National Audit Office

Report
by the Comptroller
and Auditor General

Department of Health

Maternity services in England

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National Audit Office

Department of Health

Maternity services in England

Report by the Comptroller and Auditor General

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Comptroller and Auditor General
National Audit Office

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This report examines whether the Department of Health is achieving value for money from its spending on maternity services, and looks at the performance and management of these services.

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This report can be found on the National Audit Office website at www.nao.org.uk/2013-maternity-services

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Key facts

694,241
live births in England in 2012

£2.6bn
cost of NHS maternity care in 2012-13

1 in 133
babies are stillborn or die within seven days of birth

87 per cent	of women gave birth in obstetric units in hospital in 2012
84 per cent	of women reported that the care they received during labour and birth was excellent or very good in 2010, compared with 75 per cent in 2007
£482 million	cost of maternity clinical negligence cover in 2012-13
12 per cent	increase in the number of midwives since 2007
2,300	shortfall in midwives in 2012, calculated using a widely recognised benchmark of 29.5 births per midwife per year
152	midwifery-led units in June 2013, an increase from 87 in April 2007
79 per cent	of women are within a 30-minute drive of both an obstetric unit and a midwifery-led unit, compared with 59 per cent in 2007
28 per cent	of maternity units reported that they closed to admissions for half a day or more between April and September 2012

Summary

Overview of maternity services

1 Having a baby is the most common reason for admission to hospital in England. In 2012, there were 694,241 live births. Maternity is a unique area of the NHS as the services support predominantly healthy people through a natural, but very important, life event that does not always require doctor-led intervention.

2 Maternity care cost the NHS around £2.6 billion in 2012-13, equivalent to some £3,700 per birth. The total cost represents around 2.8 per cent of health spending, about the same proportion as a decade ago.

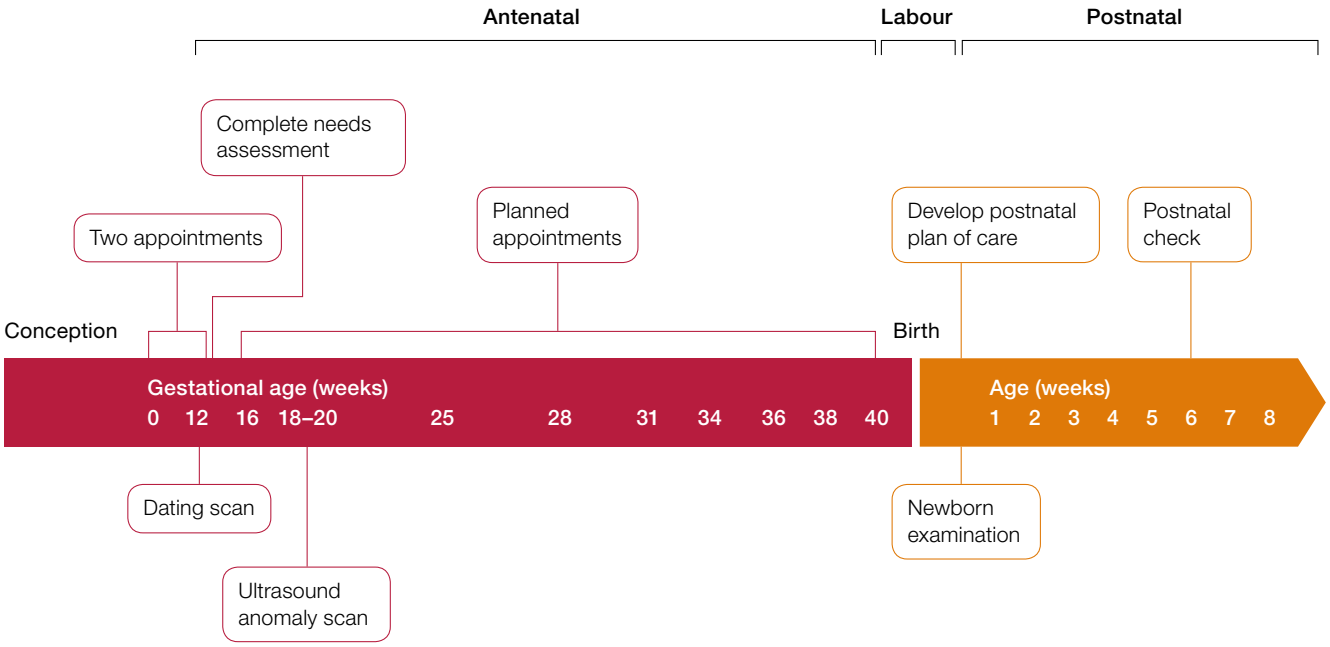
3 The number of births has increased by almost a quarter in the last decade and is currently at its highest level for 40 years, placing increasing demands on NHS maternity services. Over recent years there has also been an increase in the proportion of 'complex' births, such as multiple births (for example twins) and those involving women over 40 or women with obesity or pre-existing medical conditions. These complexities increase the risks of childbirth, meaning care often requires greater clinical involvement.

4 Pregnant women receive care from a range of health professionals. All are cared for by midwives, who act as the coordinating professional for every birth. For women at higher risk or undergoing medical procedures, care is also provided by doctors led by consultant obstetricians.

5 This report examines the performance and management of maternity services. We set out our audit approach in Appendix One and our evidence base in Appendix Two. The report covers the care provided before birth (antenatal), during labour and birth, and after birth (postnatal) (**Figure 1** overleaf).

6 We made our assessment against a variety of indicators. We focused on the Department of Health's (the Department's) objectives for maternity care, although these are expressed in broad terms with few quantified measures of performance. We therefore used comparisons and trends to evaluate performance. In addition, we drew on other measures and benchmarks, including the staffing levels endorsed by the Royal Colleges.

Figure 1
Maternity care pathway



Note
1 The diagram represents a simplified summary of the actual pathway and includes only key, indicative elements.

Source: Adapted from NHS England

Organisations involved in delivering maternity services

7 The Department is ultimately responsible for securing value for money for spending on maternity services. The Department's Permanent Secretary, as the Accounting Officer, is responsible for the proper and effective use of resources voted by Parliament for health services. With reduced departmental involvement in operational matters, the Accounting Officer relies on a system of assurance around the commissioning, provision and regulation of healthcare.

8 The structures for commissioning healthcare, including maternity services, changed from 1 April 2013 as part of the reforms introduced under the Health and Social Care Act 2012:

- Until 31 March 2013, 151 primary care trusts were responsible for commissioning maternity services, overseen by ten strategic health authorities on behalf of the Department.

- Responsibility for commissioning maternity services now rests with 211 clinical commissioning groups, overseen and held to account by NHS England. NHS England is an arm's-length body of the Department but is operationally independent. It is accountable to the Department for the outcomes achieved by the NHS. Under the old and the new structures, funding for maternity services has not been ring-fenced. For 2013-14, the Department has granted NHS England £95.6 billion, 68 per cent of which has been passed on to clinical commissioning groups. Each clinical commissioning group has an 'accountable officer' who is responsible for the stewardship of resources and the performance achieved.

9 Clinical commissioning groups commission maternity services from local providers – NHS trusts and NHS foundation trusts (trusts). In 2012, most women (87 per cent) gave birth in obstetric units in hospitals, with 9 per cent in 'alongside midwifery units' (situated on the same site as an obstetric unit), 2 per cent in freestanding midwifery units, and 2 per cent at home.[1]

10 Providers are regulated by the Care Quality Commission. The Commission assesses whether services meet essential standards of quality and safety. Individual healthcare professionals are regulated by the Nursing and Midwifery Council and the General Medical Council.

The Department's objectives for maternity care

11 The Department's main aims for maternity services are:

- to improve performance against quality and safety indicators;
- for mothers to report a good experience;
- to encourage normality in births by reducing unnecessary interventions;
- to promote public health with a focus on reducing inequalities;[2] and
- to improve diagnosis and services for women with pregnancy-related mental health problems.

12 The Department outlined its strategy for maternity services in 2007 in *Maternity Matters*.[3] It intended to achieve its aims by: offering choice in where and how women have their baby; providing continuity of care; and ensuring an integrated service through networks and agreed care pathways.

1 A very small number of women receive exclusively private care (0.4 per cent of births are in private hospitals or maternity units). There are also around 150 independent midwives (less than 1 per cent of the NHS midwifery workforce) who work outside the NHS in a self-employed capacity and provide some or all of a woman's care during pregnancy.
2 While reducing inequalities is a specific focus of the public health aim, as a general aim of the NHS, reducing inequalities is also inherent in the other maternity aims.
3 Department of Health, *Maternity Matters: Choice, access and continuity of care in a safe service*, April 2007.

Key findings

Performance of maternity services

Women's overall experience

13 Women's experiences of maternity care are positive. In 2010, 84 per cent of women reported that the care they received during labour and birth was excellent or very good, compared with 76 per cent for the care received during pregnancy and 67 per cent for the care received after the birth. Between 2007 and 2010 there was similar improvement across all three parts of the care pathway. There were, however, significant inequalities in reported satisfaction between white women and black and minority ethnic women (paragraphs 1.4 and 1.5).

Providing safe care and reducing unnecessary interventions

14 Outcomes in maternity care are good for the vast majority of women and babies but, when things go wrong, the consequences can be very serious. In 2011, 1 in 133 babies were stillborn or died within seven days of birth. This mortality rate has fallen, but comparisons with the other UK nations suggest there may be scope for further improvement. There are wide unexplained variations in the performance of individual trusts in relation to complication rates and medical intervention rates, even after adjusting for maternal characteristics and clinical risk factors. This variation may be partly due to differences in aspects of women's underlying health not included in the data and inconsistences in the coding of the data (paragraphs 1.7 to 1.12, 1.19 and 1.20).

15 Maternity care accounted for a third of the clinical negligence bill in 2012-13, which highlights the importance of improving safety. As in other parts of the NHS, litigation in maternity care is rising – the number of claims increased by 80 per cent in the five years to 2012-13. The cost to the NHS for litigation cover against maternity claims totalled £482 million in 2012-13. Nearly a fifth of spending on maternity services is for clinical negligence cover (paragraphs 1.14 to 1.17).

16 The level of consultant presence on labour wards has improved substantially, but some trusts are failing to meet recommended levels. At September 2012, 73 per cent of obstetric units provided 60 hours or more of consultant presence per week (equivalent to at least 8am to 8pm, Monday to Friday), compared with just 8 per cent of units in March 2007. However, more than half of the units were not meeting the levels of consultant presence recommended by the Royal College of Obstetricians and Gynaecologists (paragraph 1.22).

Continuity of care

17 Women's experiences relating to continuity of care are mixed. In 2010, 92 per cent of women reported having a named midwife they could contact during pregnancy. However, 22 per cent stated that they had been left alone, during or shortly after birth, at a time when it worried them. In 2013, 78 per cent of maternity units reported that they provided one-to-one care for at least 90 per cent of women (paragraphs 1.25 and 1.26).

18 The number of midwives has increased but the NHS is not meeting a widely recognised benchmark for midwife staffing levels. The availability of sufficient midwives is a key factor in providing continuity of care. Since 2007, midwife numbers have increased by some 12 per cent compared with a 6 per cent increase in the number of births. Nationally, there were 21,132 full-time equivalent midwives, on average, in 2012. This equated to 32.8 births per midwife. Meeting the national benchmark suggested by an established workforce planning tool (29.5 births per midwife) would have required around 2,300 extra midwives nationally. Even after excluding the highest and lowest 10 per cent of trusts, the birth-to-midwife ratio in individual trusts in 2011-12 ranged from 26:1 to 39:1 (paragraphs 1.30 to 1.33).

19 The government has commissioned more places to study midwifery, but it is unclear whether these will be sufficient to meet future demand for maternity care. The pressure on midwife numbers will increase in the coming years, in part because an increasing number are nearing retirement age. Around 2,500 student midwife places were commissioned in each of the four years to 2012-13, but a growing proportion of students are failing to complete their courses. A 2013 report commissioned by the Department suggests that changes in demand for maternity care are likely to be met by the expected growth in midwife numbers to 2016. However, this projection was based on broad assumptions and did not consider, for instance, what staffing levels would be needed to meet the Department's policy objectives (paragraphs 1.35 to 1.37).

Choice

20 The number of midwifery-led units has increased, and more women now live within a 30-minute drive of both an obstetric unit and a midwifery-led unit. Seventy-nine per cent of women were within 30 minutes of both types of unit in 2013, compared with 59 per cent in 2007. In 2010, 84 per cent of women reported they had a choice of where to have their baby, although this varied between regions. Combining these findings suggests that the NHS has not fully achieved the Department's aspiration that all women should be able to choose where they give birth, depending on their circumstances (paragraphs 1.40 to 1.45).

21 Where the demand for maternity services might outstrip capacity, some trusts are restricting access through pre-emptive caps on numbers or reactive short-term closures in order to safeguard the quality and safety of care. Twenty-eight per cent of units reported that they closed for half a day or more between April and September 2012. Of these units, 11 per cent (eight units) had been closed for the equivalent of a fortnight or more. The main reason for closing was a lack of either physical capacity or midwives. Caps and closures are designed to manage demand and safeguard the quality and safety of care. However, they limit choice and also indicate a service that can, at times, be overstretched (paragraphs 1.46 to 1.48).

Managing maternity services

22 The Department did not fully consider the implications of delivering the ambitions set out in its strategy for maternity services. The Department has failed to demonstrate that it satisfactorily considered the achievability and affordability of implementing the strategy. There are potential tensions between different elements of the strategy, such as between choice and quality-and-safety considerations. Reconciling these different elements is challenging for NHS bodies. The Department intended that strategic health authorities and primary care trusts would monitor maternity services through the established NHS performance management arrangements. The Department has not regularly or comprehensively monitored national progress against the strategy (paragraphs 2.2 to 2.7).

23 It is unclear how local commissioners are monitoring the performance of the providers of maternity services and holding them to account. Twenty-eight per cent of trusts did not have a written service specification with their lead commissioner in 2012-13. In addition, 31 per cent of trusts did not expect to have a specification in place with their clinical commissioning group by the time the groups assumed responsibility for commissioning in April 2013 (paragraph 2.15).

24 There is scope for more local commissioners and providers to work together in networks to meet local needs. Maternity networks can support the effective planning and delivery of a full range of services. The coverage of networks has increased since 2007, although around a quarter of trusts are not part of one. In addition, less than 40 per cent of trusts belong to a network with a paid coordinator, which may limit networks' effectiveness (paragraph 2.18).

25 There is substantial variation between trusts in the costs of delivering maternity care. In 2011-12, the reported costs for individual procedures varied considerably. For example, the cost of a normal, uncomplicated delivery ranged from £620 to £1,535, even after excluding the highest and lowest 10 per cent of trusts. Totalling the costs of all maternity-related procedures also indicates wide variation between trusts. We identified some instances where commissioners were providing funding to support services that would not otherwise be financially viable. It is hard to see that supporting unviable services in this way will be sustainable as the NHS seeks to make efficiency savings during a period of greater financial constraint (paragraphs 2.12, 2.13 and 2.20 to 2.22).

26 Efficiency, in terms of lengths of stay, has improved in recent years but local bed occupancy levels vary significantly, and some small maternity units are unlikely to be viable in the long-term unless occupancy is better managed. Nationally, the proportion of women staying for more than two days after giving birth fell from 23 per cent in 2007-08 to 18 per cent in 2011-12. However, there is substantial variation in lengths of stay and bed occupancy at unit-level. Ten per cent of units with at least four beds reported that they were empty at midday on a sample day in February 2013. All of these units had fewer than ten beds. Unless occupancy rates are better managed, trusts will face difficult decisions about whether they can afford to keep units open (paragraphs 2.25, 2.26 and 2.28).

Conclusion on value for money

27 For most women, NHS maternity services provide good outcomes and positive experiences. Since 2007 there have been improvements in maternity care, with more midwifery-led units, greater consultant presence, and progress against the government's commitment to increase midwife numbers.

28 However, the Department's implementation of maternity services has not matched its ambition: the strategy's objectives are expressed in broad terms which leaves them open to interpretation and makes performance difficult to measure. The Department has not monitored progress against the strategy and has limited assurance about value for money. When we investigated outcomes across the NHS, we found significant and unexplained local variation in performance against indicators of quality and safety, cost, and efficiency. Together these factors show there is substantial scope for improvement and, on this basis, we conclude that the Department has not achieved value for money for its spending on maternity services.

Recommendations

a **The Department and NHS England should develop a framework to gain assurance about the performance of maternity services.** Without comprehensive data on key outcomes and activity, the Department has only limited assurance on progress and value for money. There is also a risk that, at local level, the NHS focuses disproportionately on performance against the limited measures that are available or overlooks areas where data are poor. The new maternity dataset, in conjunction with information held by other stakeholders, provides the opportunity to better monitor performance.

b **The Department should assess the affordability of implementing the various commitments in its strategy for maternity services.** The Department did not satisfactorily consider the achievability, affordability and local implications of implementing its 2007 strategy, and there are concerns that the available resources are not sufficient to meet all the objectives in full.

c **NHS England and Monitor should ensure that the payment framework for maternity services is fair and incentivises cost-effective behaviour.** Many commissioners pay for services outside the payment by results framework and the reported costs of providers vary substantially. NHS England and Monitor should review the recently introduced pathway tariffs to check that the tariffs are set at the correct level and are working as intended.

d **NHS England should support the NHS to understand how to implement the Department's choice commitment cost-effectively.** Against a backdrop of large variations in bed occupancy, there is limited understanding of the factors that affect demand for different settings of maternity care. NHS England should oversee research to understand what affects women's choices, such as travel distances, demographic factors and the availability of specialist services. Such research would help the NHS bodies within each local area to manage occupancy better.

e **Clinical commissioning groups and trusts should agree long-term, sustainable plans for the distribution and capacity of maternity services in their locality.** The plans should be agreed regionally and involve other relevant bodies, including NHS England, and representatives of service users. The plans should include agreements on how neighbouring trusts and maternity units will cooperate, for example through networks, and arrangements for ensuring that resources are used efficiently if expected occupancy levels are not met.

f **All clinical commissioning groups should have agreed service specifications with their trust.** These should include how local maternity care is expected to contribute to achieving the Department's objectives, including those that have historically received less attention, such as mental health and reducing inequalities. In developing the service specifications, local NHS bodies should compare local performance and resources against suitable benchmarks and investigate significant variations.

Part One

Performance of maternity services

1.1 This part of the report covers the performance of maternity services with reference to the Department of Health's (the Department's) strategy. It also covers key aspects of the capacity of the NHS to provide maternity care. While we have drawn together relevant outcomes and resources, the causal links are complex and progress in each area relates to multiple factors. For example, midwife numbers, which we cover in the context of continuity of care, will clearly also influence performance against other objectives such as quality and safety.

1.2 We investigated whether factors such as staffing levels and size of maternity units were associated with better performance. We did not identify any consistent, significant associations. This is likely to reflect the complexity of the relationships between inputs and outcomes, rather than demonstrating that such factors are not important influences.

1.3 Specifically, this part covers:

- women's overall experience;
- providing safe care and reducing unnecessary interventions, including consultant presence on labour wards;
- continuity of care, including midwife numbers;
- choice, including the distribution of maternity units; and
- supporting mental health and promoting public health.

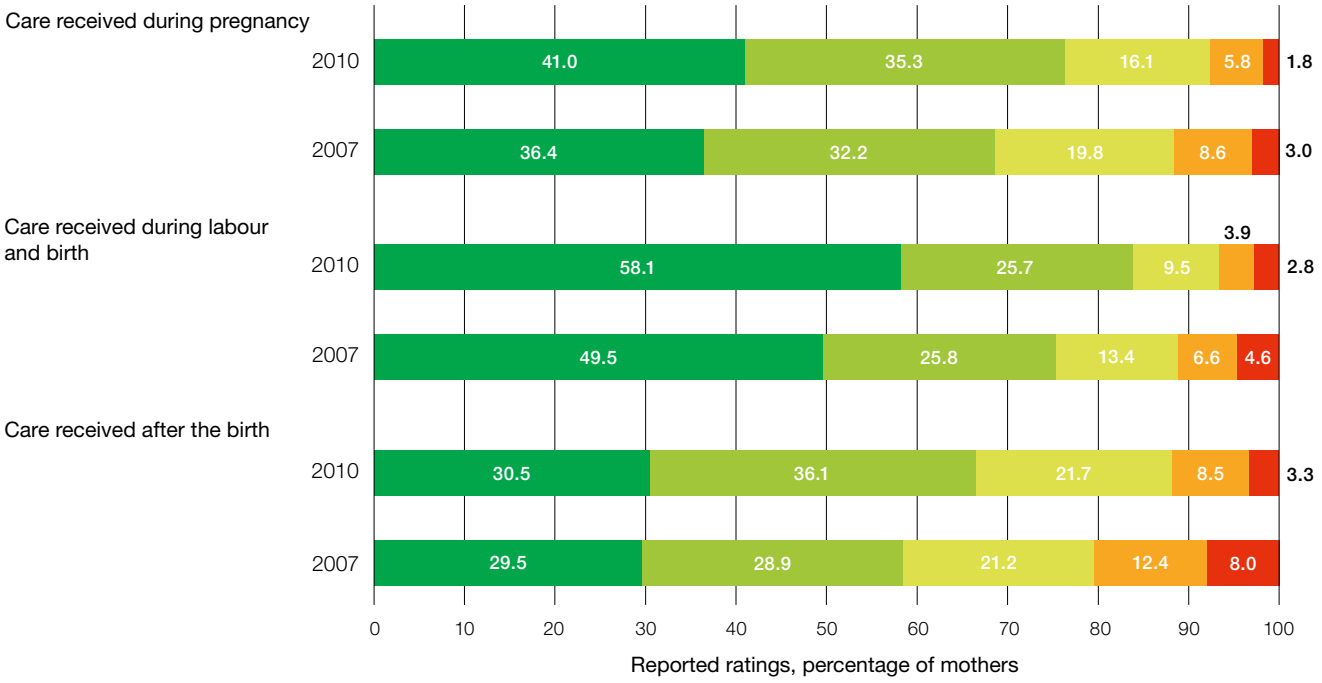
Women's overall experience

1.4 Women's experiences of maternity care are positive and have improved. A survey by the Care Quality Commission in 2010[4] found satisfaction levels were highest for the care received during labour and birth: 84 per cent of women reported that this care was excellent or very good, compared with 76 per cent for the care received during pregnancy and 67 per cent for the care received after the birth.[5] Between 2007 and 2010, there was similar improvement across all three parts of the care pathway (**Figure 2** overleaf).

4 The results of a further survey are due to be published in December 2013.
5 The scale used for these satisfaction questions was biased towards positive results, with the following responses: 'excellent', 'very good', 'good', 'fair' and 'poor'. For this reason we used the ratings above the mid-point on the scale ('good').

Figure 2
Women's experience of maternity care

In 2010, 84 per cent of women reported that the care they received during labour and birth was excellent or very good, compared with 75 per cent in 2007



Note

1 Figures for each year may not sum to 100 per cent due to rounding.

Source: Data from the Healthcare Commission (2007) and the Care Quality Commission (2010) maternity services surveys

1.5 The 2010 survey showed persistent inequalities against key measures of satisfaction. Seventy-five per cent of black and minority ethnic mothers rated care during labour and birth as very good or excellent, compared with 86 per cent of white mothers. In addition, black and minority ethnic women were significantly more likely to report shortfalls in choice and continuity of care. For example, 57 per cent of black and minority ethnic mothers said they saw a midwife as often as they wanted after birth, compared with 79 per cent of white mothers. We found that these inequalities were significant even after taking account of factors such as the mother's age, previous births and health status.

1.6 The Department intended to address inequalities through improved early access to maternity care. While the proportion of women receiving an antenatal appointment within 12 weeks of conception increased from 81 per cent to 87 per cent in the three years to 2012-13,[6] there were regional and demographic inequalities. For example, performance against this measure varied from 80 per cent in London to 90 per cent in the East Midlands in 2012-13. The available data also indicate that black and minority ethnic women were significantly less likely to have early access to services compared with white women.

Providing safe care and reducing unnecessary interventions

Mortality rates

1.7 Outcomes in maternity care are generally good for women and babies, but when there are shortcomings in care the consequences can be very serious. Data for England and Wales combined show that 46 women died from causes related to 'pregnancy, childbirth and the puerperium' (the six-week period following birth) in 2012, compared with 47 in 2007.[7] This is equivalent to 1 in 15,000 births.

1.8 In 2011, there were 5,183 perinatal deaths (stillbirths and babies dying within seven days of birth), which equates to a perinatal mortality rate of 7.5 per 1,000 births (or 1 in 133). This rate has fallen over time (from 7.7 per 1,000 births in 2007).

1.9 International comparisons are difficult to interpret due to differences in women's general health and inconsistent definitions. In addition, in countries with relatively few births, performance is more susceptible to random fluctuations so can be volatile year-on-year. Nevertheless, comparisons indicate there may be scope for further improvement. The published data show that, in 2011, the perinatal mortality rate in England (7.5 per 1,000 births) was higher than in:

- each of the other UK nations (6.9 per 1,000 births in Scotland, 6.6 in Wales and 6.4 in Northern Ireland);[8] and
- other European countries for which data are available, including Spain (3.7 per 1,000 births), Sweden (4.7) and Germany (5.5).[9]

6 Data for 2009-10 cover only the second six months of the year.
7 Office for National Statistics, *Death Registrations Summary Tables, England and Wales*, *2012*, July 2013.
8 Office for National Statistics, *Child Mortality Statistics: Childhood, Infant and Perinatal, 2011*, February 2013.
9 Organisation for Economic Co-operation and Development health data.

Complications

1.10 We focused on selected complications for which data are available – such as readmission rates, injuries and infections – as indicators of the quality of care. Some of these complications will be caused by factors outside the control of maternity services. However, trends over time and variations between providers indicate differences in quality.

1.11 The emergency readmission rate for babies has increased (from 5.3 per cent in 2008-09 to 6.0 per cent in 2011-12), but has remained consistent for mothers (at 1.0 per cent). The most common reasons for maternal emergency readmission were infections (13.8 per cent of readmissions) and blood loss (12.4 per cent).[10] Trends in many other complications are difficult to interpret, as improvements in clinical coding have increased the likelihood of such adverse events being recorded.

1.12 Analysis of the performance of individual trusts shows wide unexplained variation in complication rates (**Figure 3**). For example, the rate of emergency readmissions for women varied from at most 0.5 per cent for the lowest 10 per cent of trusts to at least 1.6 per cent for the highest 10 per cent of trusts, with the performance of 39 trusts being significantly different (either better or worse). For some of the measures, this variation will be in part due to differences between trusts in aspects of women's underlying health not included in the data, such as obesity or smoking, and inconsistencies in the coding of the data.

1.13 We also found some evidence to suggest that outcomes are worse at weekends than on weekdays. Across three of the six indicators of complications shown in Figure 3, performance was slightly poorer for women admitted at the weekend. For example, the chance of injury to the baby varied from 1 in 68 on weekdays to 1 in 60 at weekends. These differences remain after adjusting for maternal characteristics and the type of cases.

Clinical negligence rates

1.14 Adverse outcomes can have serious consequences for the taxpayer as well as for the women and babies concerned. In 2012-13, there were 1,146 clinical negligence claims relating to maternity care, equivalent to around one claim for every 600 births. The number of claims increased by 80 per cent in the five years from 2007-08 to 2012-13, which is consistent with the rise in claims across the NHS as a whole (88 per cent).[11]

1.15 Over the last decade, the most common reasons for maternity claims have consistently been mistakes in the management of labour and relating to caesarean sections, and errors resulting in cerebral palsy.[12] The average time from an incident occurring to a claim being resolved is over four years and therefore it is difficult to draw conclusions about the quality and safety of current care from the claims that have been settled.

10 Royal College of Obstetricians and Gynaecologists, *Patterns of Maternity Care in English NHS Hospitals 2011/12*, May 2013.

11 Figures on the total number of claims are based on claims made under the Clinical Negligence Scheme for Trusts in the year, irrespective of the date of incident, and do not include those made under the previous litigation schemes (covering incidents occurring before April 1995).

12 NHS Litigation Authority, *Ten Years of Maternity Claims: An Analysis of NHS Litigation Authority Data*, October 2012.

Figure 3

Variation in complication rates by trust, 2011-12[1]

Complication rates vary widely between trusts

Indicator	Mean (%)	Range[3] (%)	Number of statistical outliers[2] Better	Worse
Maternal indicators				
Third- and fourth-degree perineal tears	3.1	2.1–4.0	17	13
Emergency readmission within 30 days of delivery	1.0	0.5–1.6	22	17
Infection rates	0.9	0.2–1.9	57	26
Baby indicators				
Injury to neonate	1.5	0.3–3.1	63	37
Emergency readmission within 28 days of birth	6.0	3.7–8.8	47	38
Infection rates	2.1	0.6–4.2	63	35

Notes

1 Figures are adjusted for maternal characteristics and clinical risk factors, with a base of 142 trusts (one trust was removed from the maternal infection indicator due to missing data).

2 Outliers are at the 99.8 per cent confidence level. The assessment of whether a trust is a statistical outlier includes information about the variation from the mean and the number of births (since those with smaller numbers may have greater variation by chance alone). As a result, a trust's performance could fall outside the range and it would not be an outlier (if small) or vice versa (if large). By chance alone, around two trusts would be outliers across all the indicators.

3 The range is defined as the 10th percentile – the score below which 10 per cent of trusts fall – and the 90th percentile – the score above which 10 per cent of trusts fall.

Source: Dr Foster Unit, Imperial College, London

1.16 In 2012-13, maternity care accounted for 12 per cent of the claims resolved, but 33 per cent of the payments made through the NHS Litigation Authority's Clinical Negligence Scheme for Trusts (**Figure 4** overleaf). The average cost per case is higher than in other parts of the NHS because the settlements cover the cost of care and support for the whole of the individual's life from birth. The payments for maternity claims as a proportion of all claims have decreased over the past five years, although this is likely to be due to maternity cases increasingly being settled as ongoing (periodic) payments – rather than lump sums – which defers spending to future years.

1.17 The scale of litigation highlights the importance of improving risk management and the safety of care. In 2012-13, trusts paid £482 million for maternity clinical negligence cover, equating to nearly a fifth of spending on maternity services (equivalent to around £700 per birth). The Committee of Public Accounts recently highlighted the spiralling cost of clinical negligence as a key issue in the *Whole of Government Accounts*.[13]

13 HC Committee of Public Accounts, *HM Treasury: Whole of Government Accounts 2010-11*, Thirty-seventh Report of Session 2012-13, HC 867, April 2013.

Figure 4

Clinical negligence payments, 2007-08 and 2012-13

Maternity payments accounted for a third of total clinical negligence payments in 2012-13

	2007-08 (in 2012-13 prices)	2012-13	Change
Average payment per claim	£255,000	£277,000	+9%
Maternity claims closed as proportion of total	13%	12%	-1% point
Maternity payments as proportion of total	38%	33%	-5% points

Notes

1 Data relate to claims closed in that year or periodic payments (where the NHS has committed to meeting ongoing care needs) settled in that year, irrespective of notification or incident date. The total number of claims closed does not equal the number of claims made, due to the lag time in resolving them.

2 Payments cover damages, and defence and claimant costs. The payments are for claims made under the Clinical Negligence Scheme for Trusts and do not include costs under previous litigation schemes.

3 Costs adjusted to 2012-13 prices using gross domestic product (GDP) deflator.

Source: Data provided by the NHS Litigation Authority

Reducing unnecessary interventions

1.18 The Department's objectives include decreasing the number of 'unnecessary interventions' by promoting normal births. This involves the NHS keeping rates of caesarean sections, inductions of labour and instrumental births at appropriate levels. Normal births are associated with shorter hospital stays, better outcomes and lower costs.

1.19 Nationally, rates of medical interventions have increased slightly over recent years. However, it is not known to what extent this represents a change in the type of cases or maternal preferences, or an increase in unnecessary interventions. In the five years from 2006-07 to 2011-12:

- elective (planned) caesarean sections increased from 9.5 per cent to 10.2 per cent of births, while emergency caesarean sections remained steady (14.7 per cent compared with 14.8 per cent);
- induction rates increased from 20.3 per cent to 22.1 per cent; and
- instrumental births (forceps, ventouse or breech extractions) increased from 11.5 per cent to 13.0 per cent.

1.20 Rates of medical intervention vary widely between providers (**Figure 5**). For example, the rate of emergency caesarean sections varied in 2011-12 from at most 11.3 per cent for the lowest 10 per cent of trusts to at least 18.1 per cent for the highest 10 per cent of trusts, with the performance of 69 trusts being significantly different (either higher or lower). For some of the measures, this variation will be in part due to differences between trusts in aspects of women's underlying health not included in the data.

Figure 5

Variation in intervention rates by trust, 2011-12[1]

Rates of medical intervention vary widely between trusts

Indicator	Mean (%)	Range[3] (%)	Number of statistical outliers[2] Higher	Lower
Elective caesarean section[4]	10.2	8.1–11.6	13	18
Emergency caesarean section	14.8	11.3–18.1	32	37
Induction of labour	22.1	17.3–28.3	36	38
Instrumental delivery	13.0	9.5–16.1	34	35

Notes

1 Figures are adjusted for maternal characteristics and clinical risk factors, with a base of 142 trusts (17 trusts were removed from the induction measure due to missing data).

2 Outliers are at the 99.8 per cent confidence level (see Figure 3 notes for more detail).

3 The range is defined as the 10th percentile – the score below which 10 per cent of trusts fall – and the 90th percentile – the score above which 10 per cent of trusts fall.

4 Elective caesarean section includes previous caesarean as a risk factor; more variation would be seen if this were excluded.

Source: Health and Social Care Information Centre and Dr Foster Unit, Imperial College, London

Consultant presence

1.21 The provision of high-quality, safe maternity care requires the presence of appropriately skilled staff. As well as midwives and other support staff, medical staff are needed, for example for caesarean sections. Currently, doctors in training provide the medical staffing of most hospital obstetric units at night and weekends. They are supervised by consultants who are usually at home but available on the telephone and able to get to the hospital within 30 minutes.

1.22 Increasing routine consultant presence on the labour ward to support, teach and supervise junior staff may result in better decision making and fewer unnecessary interventions. There have been very substantial improvements in levels of consultant presence on labour wards, although some obstetric units are failing to meet recommended levels. Our survey found the following at September 2012:

- Almost three-quarters (73 per cent) of obstetric units provided 60 hours or more of consultant presence[14] per week (equivalent to at least 8am to 8pm, Monday to Friday), compared with just 8 per cent in March 2007.

14 A dedicated consultant obstetrician present in the labour ward or delivery suite.

- Fifty-three per cent of obstetric units (including all of the largest units) were not achieving the levels of consultant presence recommended by the Royal College of Obstetricians and Gynaecologists and endorsed by the NHS Litigation Authority (**Figure 6**).
- Twelve per cent of obstetric units did not comply with the Royal Colleges' recommendation that all units should have at least one full-time equivalent consultant anaesthetist, compared with 7 per cent in March 2007.[15]

1.23 Meeting the recommended levels of consultant presence would have significant cost implications, and some trusts told us that it is unachievable within their current budgets and service configuration. The level of advertised vacancies indicates that, taken as a whole, trusts' agreed establishment numbers are insufficient to provide the recommended levels of consultant presence. In any event, there are currently not enough consultants to provide this level of presence across the NHS.

Continuity of care

1.24 The Department intends that every woman should be supported by a midwife she knows and trusts throughout her pregnancy and after the birth. The continuity of care commitment includes that every woman should have a 'named midwife' and, during established labour, should receive supportive one-to-one care and not be left on her own except for short periods or at the woman's request.

Figure 6

Compliance with recommended levels of consultant presence, September 2012

Fifty-three per cent of obstetric units were not achieving the recommended levels of consultant presence

Births per year[1]	Recommended minimum consultant presence per week	Total number of obstetric units	Number of non-compliant units (%)
2,500–4,000	60 hours	59	14 (24)
4,000–5,000	98 hours	31	21 (68)
5,000+	168 hours[2]	26	26 (100)
Total		**116**	**61 (53)**

Notes

1 Thirty-five obstetric units were excluded from this analysis because they had fewer than 2,500 births in 2012.

2 The 168 hours level is equivalent to 24 hours a day, seven days a week.

Source: National Audit Office

15 Recommendations based on: Royal College of Anaesthetists, Royal College of Midwives, Royal College of Obstetricians and Gynaecologists, Royal College of Paediatrics and Child Health, *Safer Childbirth: Minimum Standards for the Organisation and Delivery of Care in Labour*, October 2007.

Women's experiences of continuity of care

1.25 There are limited data on women's experience of some key aspects of the Department's continuity of care objective, such as whether women are supported by a midwife they know and trust. The data that are available give a mixed picture. In 2010, the vast majority of women (92 per cent during pregnancy and 95 per cent after the birth) reported having the name and contact details of a midwife they could contact if worried. However, just over one in five women (22 per cent) stated that they had been left alone, during or shortly after the birth, at a time that worried them.

1.26 Our survey confirmed that performance in relation to some aspects of continuity has been mixed:

- Ninety-six per cent of maternity units reported that they aimed to provide one-to-one care for at least 90 per cent of women, but only 78 per cent said that they were achieving this level.
- Seventy-nine per cent of trusts reported having a stated policy to assign every woman a 'named midwife',[16] compared with 85 per cent in 2007.
- Thirty-three per cent of trusts with a stated 'named midwife' policy reported that women always had the same midwife for antenatal and postnatal care.

Number of midwives

1.27 A key factor in providing continuity and one-to-one care throughout labour and birth is the availability of midwives. The exact number of midwives required by any individual maternity service will depend on a variety of factors including: the type of cases and maternal characteristics; the flexibility with which midwives are deployed; and the availability of other healthcare staff, such as maternity support workers.[17]

1.28 The Royal College of Midwives has endorsed the Birthrate Plus® tool on midwifery staffing levels. This has been widely used by maternity services and the Department has acknowledged it as an "appropriate workforce planning tool".[18] The tool suggests an average of 29.5 births per midwife per year,[19] with a range of 27.3 to 31.5[20] to reflect local variations that can affect staffing needs.[21]

16 Our survey defined a named midwife as 'a midwife who acts as a continual point of contact throughout pregnancy and can be called directly on the telephone' and advised that a 'named midwife might not always directly provide care'.
17 Maternity support workers work under the supervision of qualified midwives and assist in the care of mothers and babies. In 2012 there were 1,068 maternity support workers, 3 per cent of total maternity staff, up from 2 per cent in 2007.
18 Department of Health, *Maternity Matters: Choice, access and continuity of care in a safe service*, April 2007, p. 28.
19 For home births, the birth-to-midwife ratio is 35:1.
20 The range represents the minimum and maximum estimates for recommended birth-to-midwife ratios, based on analysis of 96 maternity services.
21 J Ball and M Washbrook, 'Birthrate Plus: using ratios for maternity workforce planning', *British Journal of Midwifery*, November 2010.

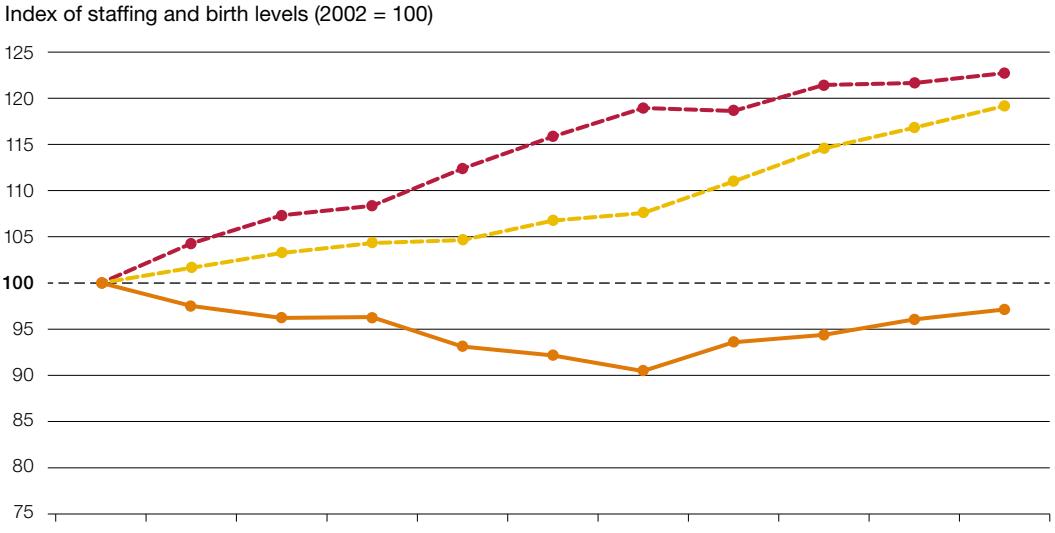
1.29 The Department has not assessed what staffing levels would be sufficient to meet its commitments on continuity of care or whether these are affordable for trusts or met by the workforce planning tools used by the NHS. Our modelling work, which was based on data from a single trust, indicated that the staffing levels recommended by Birthrate Plus® would not be enough to provide one-to-one care for every woman during established labour.

Current position

1.30 Both the number of midwives and the birth rate have grown over the last decade. However, midwife numbers levelled off around 2005, which means that there are fewer midwives per birth than there were a decade ago (**Figure 7**). Since 2007, midwife numbers have increased by some 12 per cent compared with a 6 per cent increase in the number of births. In 2012 there were, on average, 21,132 full-time equivalent midwives. This equated to 32.8 births per midwife, above the Birthrate Plus® national benchmark of 29.5. Achieving the benchmark would have required around 2,300 additional midwives.[22]

Figure 7
Midwife-to-birth ratio, 2002 to 2012

There were fewer midwives per birth in 2012 than in 2002



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Births	100	104.2	107.3	108.3	112.3	115.8	118.9	118.6	121.4	121.6	122.7
Midwives	100	101.6	103.2	104.3	104.6	106.7	107.5	110.9	114.5	116.8	119.1
Midwives: births	100	97.5	96.2	96.3	93.1	92.1	90.4	93.6	94.3	96.0	97.1

Notes

1 The births data include a small number of births that took place in, for instance, military and private hospitals, although the midwife numbers at these establishments are not captured in the registered midwives data used here.

2 Data on the number of full-time equivalent registered midwives are for 30 September each year and excludes bank staff.

Source: National Audit Office analysis of Health and Social Care Information Centre and Office for National Statistics data

22 This calculation does not account for 'bank staff' – midwives employed on a temporary basis – who work for the NHS but are not captured in the current workforce data. In 2010, there were 664 registered midwives working as bank staff. Including bank staff would reduce the estimated shortfall.

1.31 Midwife vacancies have not been recorded consistently over time, but the number of vacancies grew between 2007 and 2010. At September 2012, units reported a long-term vacancy rate of 3.3 per cent (posts unfilled for three months or longer), equivalent to a shortfall of around 700 midwives against agreed establishment numbers. The fact that this shortfall is considerably less than that calculated using Birthrate Plus® (2,300 midwives) indicates either that trusts are not aiming to achieve this benchmark or that it is not financially achievable.

1.32 The distribution of midwives across England varies substantially. The most recent comprehensive trust-level data on births, for 2011-12, show that the birth-to-midwife ratio ranged from 26:1 to 39:1, even after excluding the highest and lowest 10 per cent of trusts. Sixty-three per cent of trusts had more than 31.5 births per midwife and therefore were below the lowest staffing level suggested by Birthrate Plus® (represented by those dots below the lower black line in **Figure 8** overleaf). Some of the variation in staffing levels can be explained by the size of maternity services: trusts with fewer births have, on average, significantly more midwives per birth.

1.33 The birth-to-midwife ratio for trusts shown in Figure 8 does not account for differences in the type of cases or the range of services provided. We therefore developed a measure comparing the cost-weighted level of midwifery activity to the number of midwives to adjust for these factors. This more sophisticated indicator suggested similar variation in staffing levels, with the recorded level of activity per midwife varying by over two-thirds, even after excluding the highest and lowest 10 per cent of trusts.

Future projections

1.34 Whether or not there will be enough midwives in future depends on a variety of factors. These include the demand for maternity care (determined by the birth rate and the complexity of births), the rate of part-time working and retirement, and the number of training places and drop-out rates.

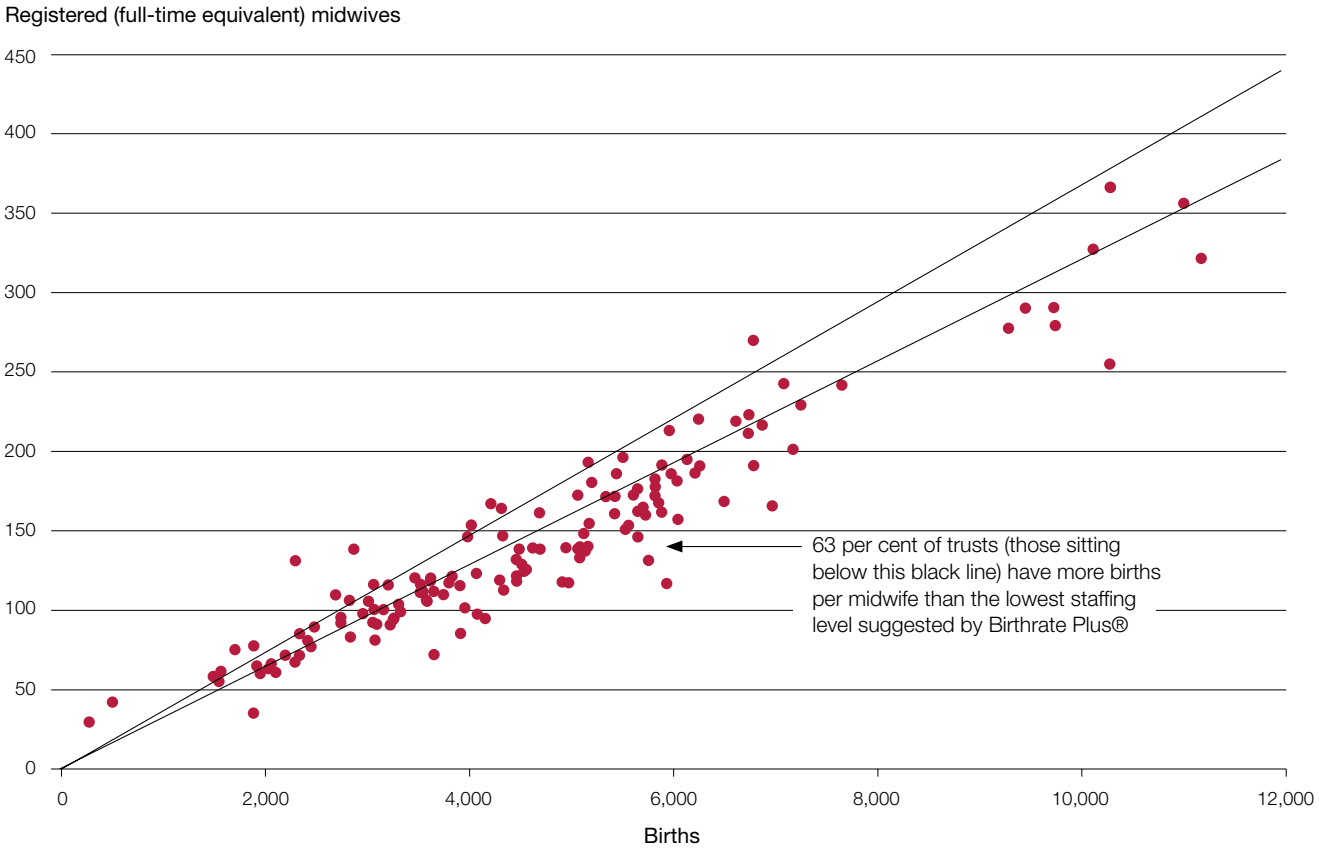
1.35 It is clear that the midwifery workforce will face significant pressure, even though the Office for National Statistics forecast in 2011 that the birth rate is expected to peak around 2013 before falling for over a decade.[23] In particular, a greater proportion of midwives are nearing retirement age: 29 per cent of the workforce were aged 50 or over in 2012, compared with 24 per cent in 2007.[24] As well as placing pressure on workforce numbers, the likely decline in the number of experienced midwives will present a challenge to the NHS in ensuring that adequate training and supervision are available for less experienced staff.

23 Based on 2010 national population projections.
24 Based on headcount data where age of midwife was known. Source: Health and Social Care Information Centre.

Figure 8

Variation in midwife staffing levels, 2011-12

Sixty-three per cent of trusts had fewer midwives per birth than the lowest level suggested by Birthrate Plus®



Notes

1 Some of the outliers may represent issues in the underlying data, including inconsistencies in how births and midwives were assigned to organisations during service reconfigurations. We have removed two trusts with known data issues.

2 The two black lines represent the minimum and maximum estimates for recommended birth-to-midwife ratios as calculated using Birthrate Plus®, based on analysing 96 maternity services that did not include freestanding midwifery units or obstetric units with fewer than 2,000 births. We may expect that a small number of trusts represented in the figure care for women who require, on average, more or less midwifery input than at any of these 96 services and, therefore, their recommended birth-to-midwife ratio would fall outside the lines.

3 Data on home births are not included. Trusts with high numbers of home births would have a higher birth-to-midwife ratio if home births were included, and would therefore be more likely to fall below the lowest Birthrate Plus® staffing level.

4 Staffing levels are taken as the monthly average between April 2011 and March 2012.

Source: National Audit Office analysis of Health and Social Care Information Centre data

1.36 The government has responded to the expected workforce pressures by commissioning more university places to study midwifery. Around 2,500 places were commissioned for courses starting each year from 2009-10 to 2012-13, compared with around 1,800 places for courses starting in 2005-06. However, it may be misleading to focus solely on the number of places commissioned: the drop-out rate has also increased, meaning that a smaller proportion of places result in a qualified midwife. Twenty-seven per cent of students dropped out of courses that were due to end in 2011-12, compared with 18 per cent in 2009-10 (equating to around 200 fewer qualified midwives).

1.37 A 2013 report commissioned by the Department suggested that changes in demand for maternity care were likely to be met by the expected growth in midwife numbers to 2016.[25] However, this projection is very sensitive to the assumptions made and is not based on a comprehensive assessment of potential factors. For example, the analysis started from the assumption that the current supply of midwives matches the demand for maternity care; and it did not consider what staffing levels would be needed to meet the Department's objectives on continuity of care.

Choice

1.38 The Department intends that women should have a choice of where they have their baby, depending on their circumstances. This encompasses choice of both setting (that is obstetric unit, midwifery-led unit or home birth) and provider. However, the Department has not provided guidance to local NHS bodies or to women on what this choice means in practice: for example, what level of accessibility (such as travel time) may represent a realistic choice?

1.39 National guidelines recommend that women with pre-existing medical conditions or at higher risk of developing complications should be advised to give birth in an obstetric unit. In addition, women may need to be transferred to an obstetric unit during labour if complications occur or they need medical intervention.

Women's experiences of choice

1.40 Across England as a whole, the proportion of women who reported that they had a choice about where to have their baby increased from 82 per cent in 2007 to 84 per cent in 2010. This national picture hides significant regional variations – from 80 to 88 per cent in 2010 – that cannot be explained by the clinical needs of mothers captured in the data. When we combine this with our findings on geographical accessibility (paragraph 1.44), it suggests that the NHS has not fully achieved the Department's aspiration that all women should be able to choose their place to give birth, depending on their circumstances, by the end of 2009.

25 Centre for Workforce Intelligence, *Future Midwifery Workforce Projections: Starting the Discussion*, June 2013.

1.41 The majority of women (87 per cent in 2012) give birth in hospital obstetric units, although the proportion of births in midwifery-led units has grown in recent years:

- The proportion of births in midwifery-led units increased from 4 per cent of births in 2006-07 to 11 per cent in 2012.
- Home births remain a small proportion of all births, falling from 2.8 per cent in 2007 to 2.4 per cent in 2011.
- The position is not uniform across the country. Only 4 per cent of mothers in the East Midlands gave birth outside a hospital obstetric unit (that is at home or in a midwifery-led unit), compared with 21 per cent of mothers in the East of England.

Distribution of maternity services

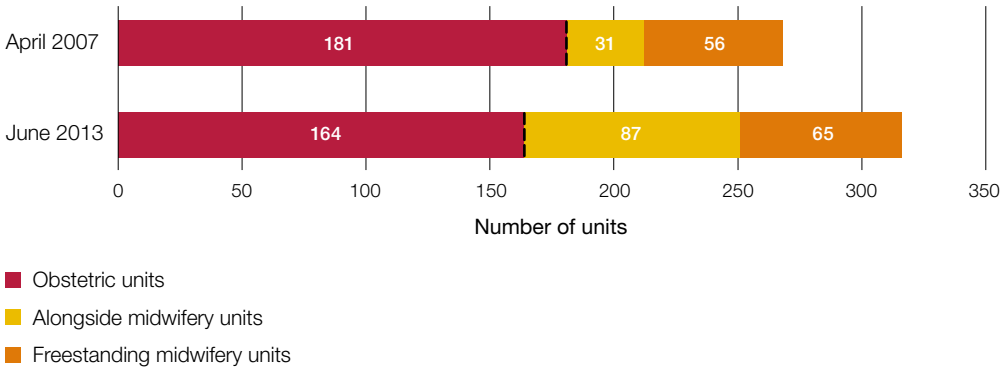
Number and distribution of midwifery-led units

1.42 Nearly all trusts that provide maternity services have an obstetric unit, and an increasing proportion also have midwifery-led units. Neither the Department nor NHS England holds information on the location of maternity services across the country. Using data from BirthChoiceUK[26] and from our survey, we found that the number of midwifery-led units increased from 87 in April 2007 to 152 in June 2013 (**Figure 9**). This was mainly due to an increased number of alongside midwifery units (units on the same site as an obstetric unit). Services are now being provided in fewer different geographical locations because the number of obstetric units has decreased.

Figure 9

Number of maternity units in England, 2007 and 2013

The number of midwifery-led units increased from 87 in April 2007 to 152 in June 2013



Note

1 The definitions used for the different types of maternity units are given at the end of Appendix Two.

Source: BirthChoiceUK and National Audit Office

26 BirthChoiceUK is a voluntary organisation established to help women choose their maternity care. The figures presented here are for England only.

1.43 We used mapping software to assess the extent to which choice is available by comparing population data and the locations of maternity services. This indicated that the average time to drive to the nearest unit has remained constant (13 minutes), despite the decrease in different geographical locations. The availability of choice of type of unit has improved:

- The estimated proportion of women of childbearing age living within a 30-minute drive[27] of both a midwifery-led unit and an obstetric unit increased from 59 per cent in 2007 to 79 per cent in 2013.
- The proportion living within a 60-minute drive increased from 97 per cent in 2007 to 99 per cent in 2013.

1.44 Despite the improvements, there are still a few areas where women lack a meaningful choice of type of maternity unit. For instance, in the areas shaded in dark red on the map in **Figure 10** overleaf, women have over an hour's drive to reach both types of unit. In addition, around 8 per cent of women have no obstetric unit within a 30-minute drive. Also, this analysis is based on theoretical choice; it does not, for example, account for maternity units being closed (paragraphs 1.46 to 1.48).

1.45 The Department's choice commitment includes that a woman may choose to access services outside her area with a provider that has available capacity. Based on drive times to the nearest two or more obstetric units, we estimate that most women have reasonable access to a choice of provider. Nearly two-thirds (65 per cent) of women are within a 30-minute drive of two or more units, although 3 per cent would have to drive for more than an hour to reach their second-nearest unit.

Restricted access to maternity units

1.46 Where the demand for maternity services might outstrip capacity, some trusts restrict access through pre-emptive caps on numbers or reactive short-term closures in order to safeguard the quality and safety of care. Closure does not mean that a woman who needs urgent care is turned away but that, where appropriate, women are diverted to an alternative maternity unit within the same trust or to another provider within the locality.

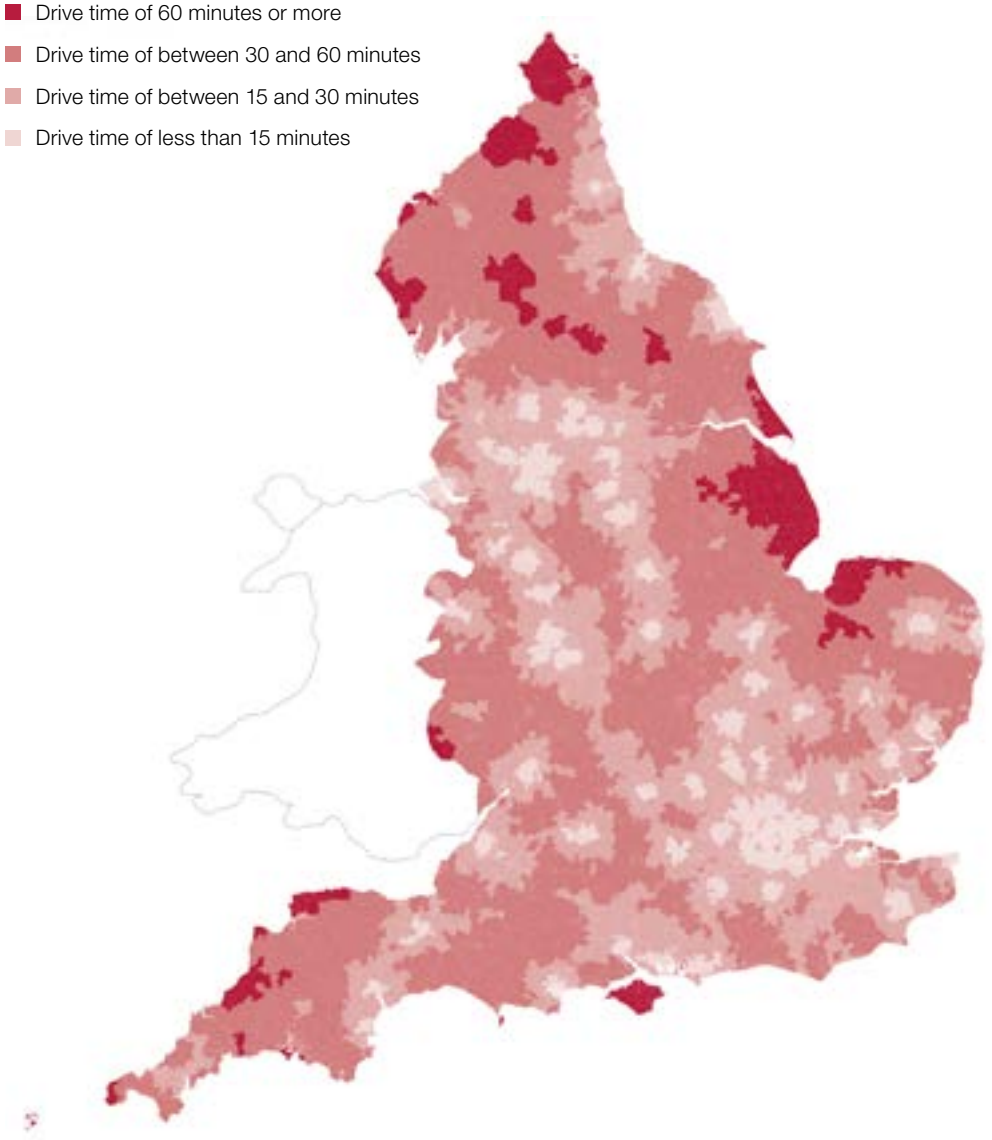
1.47 Both caps and closures have a detrimental effect on choice. Our survey found that 12 per cent of maternity units were capping the annual number of births permitted at their site. Over a quarter of units (28 per cent) reported having to close their maternity services to admissions for half a day or more between April and September 2012. Of the units reporting a closure:

- on average, the closures totalled a median of three days per unit, the same length as was found in a 2007 survey by the Healthcare Commission; and
- 11 per cent (eight units) had been closed for the equivalent of a fortnight or more during these six months.

27 What constitutes close proximity is a subjective issue; the NCT, in *Location, location, location: Making choice of place of birth a reality*, October 2009, defined it as a 30-minute drive, but this may vary for different groups of women or in different parts of the country.

Figure 10

Average drive times to both an obstetric and a midwifery-led unit, 2013



Notes

1 Some women living on the border of Wales or Scotland may have access to a choice of services in those nations. If so, they may be within shorter drive times than the figure key suggests.

2 The drive times are estimates and rely on the accuracy of the software used to calculate them.

Source: National Audit Office

1.48 Our findings on closures of maternity services are consistent with previously reported data. Our survey results suggest that closures particularly affected the East Midlands and South East Coast regions in 2012. Of those units with closures, the two main reasons for shutting the unit were 'lack of physical capacity' (reported by 77 per cent of trusts as one of the primary reasons) and 'lack of midwifery staff' (reported by 41 per cent). No unit cited 'lack of doctor cover' as a primary reason for closing.

Home birth services

1.49 Nearly all trusts (96 per cent) reported that they offer all women, for whom it is clinically appropriate, the option of giving birth at home and that these services are rarely closed. No trust reported suspending its service for over 48 hours, and nearly three-quarters (73 per cent) reported no suspension at all within the six months from April to September 2012. The Royal College of Midwives told us that, when home birth services are suspended, this is often due to staff being diverted to cover shortages on labour wards.

1.50 Home birth rates have been persistently low (paragraph 1.41). The reason for this is unclear, although the NCT and the Royal College of Midwives have suggested low confidence or insufficient training in home births among some midwives, and inconsistent information provided to women. For those trusts that gave us valid data on place of birth, home birth rates varied from 0.3 per cent to 6.5 per cent in 2012. If a trust is unable to achieve a 'critical mass' of home births, low local awareness coupled with limited midwife experience and resources may affect whether such services are offered consistently and could make them unsustainable. The NCT has suggested that the critical mass is 5 per cent of all births[28] – a level achieved by only 3 per cent of trusts – although this benchmark has not been tested rigorously.

Supporting mental health and promoting public health

1.51 Improving diagnosis and services for women with pregnancy-related **mental health** problems is one of the Department's objectives for maternity care. However, there are little data to assess progress. The evidence that is available indicates some shortfalls in support. An estimated 12 per cent of women experience some form of antenatal or postnatal depression.[29] In 2010, 20 per cent of women reported that they did not receive advice on emotional changes following the birth; and the proportion who saw a midwife five times or more after returning home from birth fell from 37 per cent in 2007 to 25 per cent in 2010. In 2013, less than 30 per cent of trusts belonged to a perinatal mental health network (see Figure 11 on page 35). These networks are intended to support the provision of specialist services to women who need mental health support.

28 NCT, *Location, location, location: Making choice of place of birth a reality*, October 2009.
29 NCT, Royal College of Midwives and Royal College of Obstetricians and Gynaecologists, *Making sense of commissioning Maternity Services in England – some issues for Clinical Commissioning Groups to consider*, August 2012.

1.52 On **public health**, the Department has focused on reducing the proportion of pregnant women who smoke and increasing the number who start breastfeeding. Both these areas were covered by public service agreement targets until 2010. In 2011, the government set a national ambition to reduce rates of smoking in pregnancy to 11 per cent or less by the end of 2015. Overall performance on public health has improved, although considerable regional variations remain:

- The proportion of women smoking at the time of birth fell from 15 per cent in 2006-07 to 13 per cent in 2012-13, with a range in 2012-13 from 6 per cent in London to 20 per cent in the North East.
- The proportion of mothers who start breastfeeding increased from 66 per cent in 2005-06 to 74 per cent in 2012-13, with the proportion ranging from 59 per cent in the North East to 87 per cent in London in 2012-13. However, over a third of mothers who start breastfeeding stop completely within eight weeks of the birth.

Part Two

Managing maternity services

2.1 This part of the report covers the management of maternity services, including implementing the Department of Health's (the Department's) strategy, funding frameworks, local commissioning arrangements and the efficiency of local providers.

Implementing the Department's strategy

2.2 The Department's objectives for maternity care are not tightly defined or expressed in a way which makes performance readily measurable. Some key aspects (such as choice) are open to interpretation in terms of what they mean in practice. The Department told us that it had deliberately expressed the objectives in broad terms to allow local NHS bodies flexibility to define how services should be provided and to encourage innovation. The Department provided us with the business case that supported the strategy set out in *Maternity Matters* (paragraph 12) only at a late stage of our work. The documents do not demonstrate that the Department satisfactorily considered the achievability, affordability and local implications of implementing its strategy.

2.3 There are also potential tensions between different elements of the strategy. Reconciling these elements is challenging for the NHS, and local understanding of the priorities could reasonably result in different solutions. For instance, local NHS bodies could choose to consolidate maternity services in fewer, larger units; this could help make increased consultant presence affordable, bringing expected benefits in terms of quality and safety, but it would reduce choice. Alternatively, local NHS bodies could choose to spread services across more, smaller units; this could improve choice and access for women but make it more difficult to increase consultant presence.

2.4 The Department's policy statements have been interpreted and supplemented in guidance from other bodies, such as the Royal College of Midwives, the Royal College of Obstetricians and Gynaecologists, and the National Institute for Health and Care Excellence. In addition, in June 2008, the ten strategic health authorities published their ambitions for maternity services in their regions.

2.5 The Department supported the implementation of *Maternity Matters*, including by:

- publishing commissioning guidance and tools;
- funding regional events to communicate its policy objectives to the NHS and to consider local implementation;
- providing additional funding of £330 million to primary care trusts over three years; and
- funding the *Birthplace* study, which published its findings on the cost-effectiveness of different settings for maternity care in 2011.[30]

2.6 It is difficult to assess progress without clear, readily measurable objectives. The Department intended that maternity services would be monitored through the established NHS performance management arrangements. Strategic health authorities would hold primary care trusts to account for commissioning comprehensive maternity services; and primary care trusts would monitor the performance, quality and safety of maternity service providers. The Department has not regularly or comprehensively monitored national progress against its strategy. In addition, there are shortcomings in the evaluations of outcomes that have been conducted; for example, the surveys of women who give birth have been undertaken nationally only once every three years.

2.7 The Department also stated in *Maternity Matters* that a new national maternity dataset would be implemented by the end of 2009 to support service planning and commissioning. However, the dataset was delayed by concerns over its size and the burden it would place on the NHS, and it was not introduced until April 2013. In addition, local data systems are often poor. In 2013, almost one in five maternity units did not have an information system linked to its patient administration system, and many trusts continue to rely heavily on paper-based notes.

Funding frameworks

2.8 In April 2006, the Department brought the majority of maternity care – in terms of cost – within the 'payment by results' framework. Previously, services had been funded solely through block contracts, where commissioners pay a fixed annual amount irrespective of the number of women treated or the complexity of care provided. Under payment by results, commissioners pay providers fixed prices (tariffs) for each unit of care provided. The prices are set nationally, based on the average costs of providers. The theory is that fixed prices prevent trusts competing on price and encourage them to instead compete on the quality of services they provide.

2.9 We identified two particular issues that have limited the effectiveness of the payment by results framework for maternity care.

30 Information on the study and published reports are available at www.npeu.ox.ac.uk/birthplace.

a) Inconsistent coding

2.10 There is confusion among trusts and commissioners about the settings for some aspects of maternity care and how to record certain activities, meaning that the data they submit to the Department are likely to be inconsistent. This in turn may lead to individual trusts not being reimbursed fairly for the care provided.

2.11 For example, we found substantial variation between trusts in the proportion of non-birth-related same-day investigations coded as 'outpatient appointments' as opposed to 'inpatient admissions' in 2010-11. There is an incentive for trusts to code activity as 'inpatient admissions' rather than 'outpatient appointments', as they receive over six times more income for the former than for the latter. It is not possible to say what level of inpatient activity might be clinically justified but, if all trusts had coded 90 per cent of these investigations as outpatient appointments (as over a third of trusts did), the total cost to commissioners would have been £51 million lower than the £190 million actually paid.

b) Inconsistent use of block payments

2.12 Nine of every ten trusts reported via our survey that they received block payments in 2012-13. In total, these block payments provided 22 per cent of trust income for maternity services (an estimated £560 million). Block contracts have tended to be used to cover community care, where data tend to be limited and the payment by results framework has previously not been mandated, and also for more specialist services, such as those for vulnerable women.

2.13 In some cases commissioners have also made block payments to support general maternity services that would otherwise have not been financially viable. Stakeholders told us that the income provided through the payment by results framework is insufficient to meet the demand for services and achieve the Department's objectives. It is hard to see that continuing to provide additional support to unviable services will be a sustainable approach, particularly as the NHS seeks to make efficiency savings during a period of greater financial restraint.

New pathway tariffs

2.14 In April 2013, the Department introduced new 'pathway' tariff payments for maternity services. This involved aggregating the funding elements for different sections of the care pathway – antenatal, birth and postnatal care. The Department's aim was to incentivise better, more joined-up care and address inconsistencies in the way providers have coded their activity (paragraphs 2.10 and 2.11). The new approach also brought some activity that had historically been funded through block contracts, such as community care, within the payment by results framework. However, the Department had only limited assurance on whether the new approach was feasible. In particular, it was unable to analyse evidence from the previous year, when the system operated in shadow form, owing to poor quality data.

Commissioning arrangements

2.15 We found evidence of a lack of written service specifications between the commissioners and providers of maternity services. At February 2013:

- Twenty-eight per cent of trusts did not have a written service specification for maternity services with their primary care trust in 2012-13, almost double the level in 2007 (15 per cent).
- A slightly higher proportion (31 per cent) of trusts were not expecting to have a written service specification in place with their clinical commissioning group by the time the groups assumed responsibility for commissioning in April 2013.

2.16 Service specifications set out commissioners' expectations, including specific targets or service standards and performance monitoring arrangements. Without such specifications, it is unclear how commissioners are: stipulating the services they are purchasing; ensuring services are consistent with the Department's policy objectives; or monitoring the performance of providers and holding them to account.

2.17 The NHS comprises hundreds of autonomous bodies. There are 211 clinical commissioning groups and some 140 trusts providing maternity services. However, to make best use of resources, the individual commissioners and providers within a local area need to work together to:

- deal with fluctuations in the demand for maternity services;
- ensure a consistent and appropriate choice of services, including at the boundaries of catchment areas between trusts; and
- support the provision of specialist services where there may be too few cases in individual trusts for them to be cost-effective.

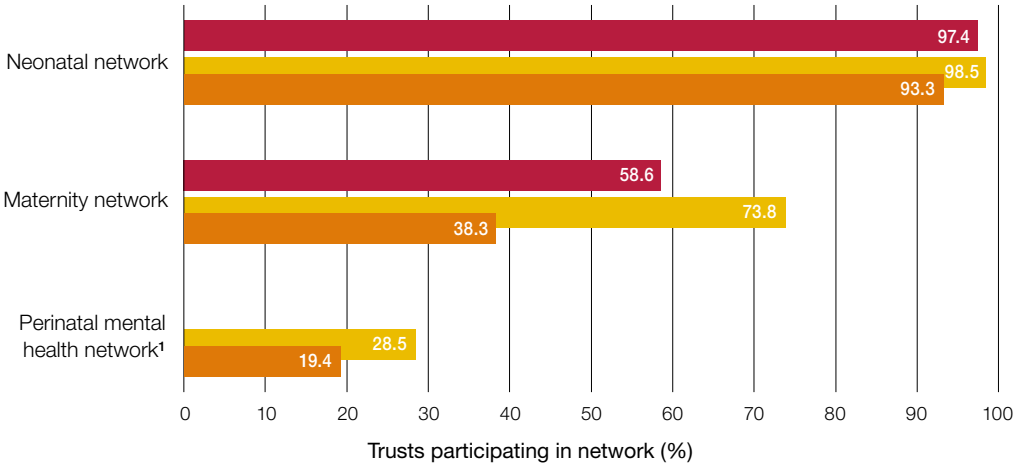
2.18 One solution to this need for local collaboration is the establishment of networks. *Maternity Matters* recommended creating maternity and perinatal mental health networks to help meet local needs. These would supplement neonatal networks, which dated from 2003 and were well-established. The coverage of maternity networks improved between 2007 and 2013, although around a quarter of trusts (26 per cent) are still not part of a maternity network (**Figure 11**). The networks vary in their level of sophistication. For instance, less than 40 per cent of trusts are part of a network with a paid coordinator, which may limit the extent to which these networks can undertake more strategic activities.

Efficiency of local providers of maternity services

2.19 Local commissioning arrangements and the funding framework are intended to support the provision of cost-effective maternity services. With the limited information available, however, it is not possible to construct a measure of providers' cost-effectiveness. We therefore focused on variations in costs and use of resources.

Figure 11
Trusts' participation in networks

Despite improvements, 26 per cent of trusts are still not part of a maternity network



Notes

1 The 2007 survey did not include questions on perinatal mental health networks.

2 Data exclude trusts that responded "don't know".

Source: National Audit Office and Healthcare Commission

Variations in reported costs

2.20 Analysis of trust-level data indicates large variation in the costs of providing maternity services. The Department uses the average cost across trusts for each procedure to calculate national tariff prices, so variation from these averages results in trusts being paid less or more than the true cost of those services.

2.21 At procedure level, the reported costs for 2011-12 varied considerably with, for example, a range – even after excluding the highest and lowest 10 per cent of trusts and adjusting for geographical differences in cost – of:

- £620 to £1,535 for a normal, uncomplicated delivery (short stay), a difference of £915; and
- £234 to £942 for routine antenatal observation (short stay), a difference of £708.

2.22 At trust level, once all maternity-related procedures are included, there is also wide variation (**Figure 12** overleaf). Those trusts with much higher relative costs may indicate inefficiencies or may reflect a difference in the type of cases that is not wholly accounted for in the design of the payment by results system. Our analysis did not reveal any consistent, significant association between organisational factors and efficiency.

Managing resources

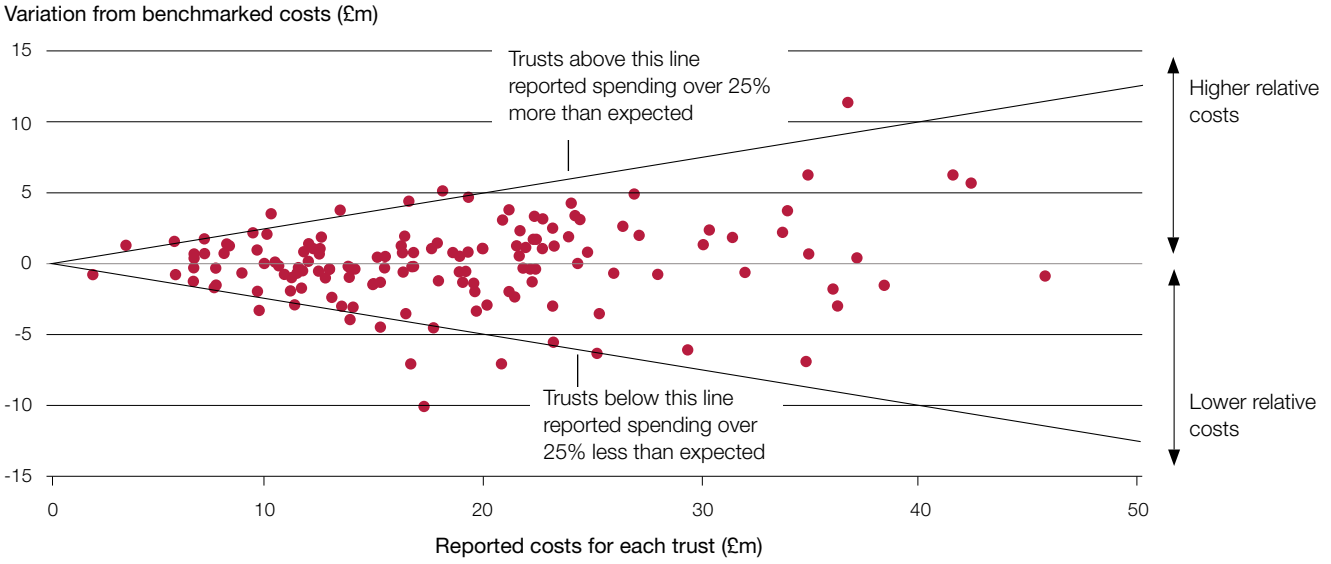
2.23 The NHS needs, as a whole, some degree of spare capacity in order to be able to offer women choice and to cope with the uncertainty around the timing of births. Making efficient use of resources is therefore a considerable challenge.

Bed occupancy

2.24 Bed occupancy rates are an indicator of whether the supply of maternity care is matching demand. Variations in occupancy indicate clear scope for improvement. There is no guidance to providers on appropriate levels of bed occupancy for maternity care. However, if bed occupancy is too low, a unit may be financially unsustainable as income is insufficient to cover fixed overhead costs. Conversely, if bed occupancy is too high, a unit may be unable to handle peaks in demand, leading to increased clinical risk and possible closure (paragraphs 1.46 to 1.48).

Figure 12
Variation in trusts' costs from national averages, 2011-12

Trusts' costs vary widely from national averages



Source: National Audit Office analysis of Department of Health data

2.25 Even after excluding very small maternity units (fewer than four beds), there is substantial variation in bed occupancy:

- Eighteen units (10 per cent) were empty at midday on a sample day in February 2013. All of these units had fewer than ten beds.
- Fourteen units (8 per cent) of varying size had occupancy rates of over 95 per cent.[31]

2.26 By reducing lengths of stay while maintaining bed occupancy levels, the NHS can reduce the number of beds and staff time required to provide the same level of service and thereby improve efficiency. Data on bed numbers and occupancy have not been collected consistently. However, the proportion of women staying for more than two days after giving birth fell from 23 per cent in 2007-08 to 18 per cent in 2011-12.[32] It should be stressed that this measure does not account for any changes in the complexity or quality of the care provided. There is, however, unexplained variation between hospitals in the length of stay for births. This cannot be wholly explained by differences in maternal characteristics or the type of cases, which suggests scope for efficiency savings.[33]

2.27 Managing bed occupancy could have a substantial effect on the cost-effectiveness of maternity units. The *Birthplace* study concluded that the policy of choice of planned place of birth for low-risk mothers could be supported on cost-effectiveness grounds. However, it noted that the cost calculations were susceptible to changes in occupancy rates because of the fixed nature of overheads (which account for around a third of costs for non-home births). We have not re-evaluated all the elements of cost-effectiveness across the different care settings. However, applying the data we collected on occupancy rates[34] would have a positive effect on the estimated cost-effectiveness of obstetric units, but a negative effect on midwifery-led units, all other things remaining unchanged.

2.28 Unless bed occupancy rates are better managed, trusts will face difficult decisions about whether they can afford to keep some units open and protect choice. Trusts can seek to increase occupancy. For example, they can collaborate through networks with a view to making more efficient use of capacity across a local area (paragraph 2.18), offer specific services (such as scanning), and encourage women to choose certain units.

31 Bed occupancy figures as measured at midday on the last Wednesday of February 2013. Data received from 72 per cent of units that responded to our survey.

32 Data for duration of postnatal stay (days from delivery to end of episode). Source: Health and Social Care Information Centre, *NHS Maternity Statistics, 2011-2012*, December 2012.

33 Comptroller and Auditor General, *Healthcare across the UK: A comparison of the NHS in England, Scotland, Wales and Northern Ireland*, Session 2012-13, HC 192, National Audit Office, June 2012.

34 Since the data were collected for the *Birthplace* study, occupancy rates have fallen in freestanding midwifery units (from 30 per cent in 2007 to 22 per cent in 2013) and alongside midwifery units (from 57 per cent to 43 per cent), but increased in obstetric units (from 65 per cent to 70 per cent).

Managing local resources

2.29 To provide an insight into the issues the NHS faces in managing resources at local level, we undertook some modelling work with a single trust. While the specific results are not generalisable to other providers, this work highlighted the challenges trusts face, given the fluctuations in activity, in providing a consistent service without having excess capacity. Key points to emerge were as follows:

- Relatively large changes in activity (increases of 10 per cent in numbers of women and caesarean sections) could be handled within current resources, albeit with some additional pressure on certain beds (postnatal ward), and fully managed through a reportedly achievable decrease in lengths of stay.
- In the labour ward, one-to-one care was achievable for around three-quarters of the time (broadly in line with the national average, paragraph 1.26). Three extra midwives on this ward (an increase of a third) would be required to provide one-to-one care for 95 per cent of the time.
- Although the emergency theatre was used for only 14 per cent of the time, there were rare occasions when an additional theatre was needed (1 per cent of the time).

2.30 The challenges highlighted by our modelling work are particularly acute for smaller maternity units – typically freestanding midwifery units – where the random variation in births is likely to have greater impact. It can be difficult for small units to ensure that staff are deployed effectively at all times. In response, some trusts are seeking to use resources flexibly, with staff providing antenatal and postnatal care in the community when there are fewer births. Other trusts rotate staff between different maternity units to ensure midwives are used effectively and gain sufficient experience.

Appendix One

Our audit approach

1 This report examines the performance and management of maternity services in England. We reviewed:

- the assurance the Department of Health (the Department) has on the value for money of maternity services;
- the capacity and capability of the NHS to deliver against the Department's strategy for maternity care; and
- the extent to which expected results are being achieved.

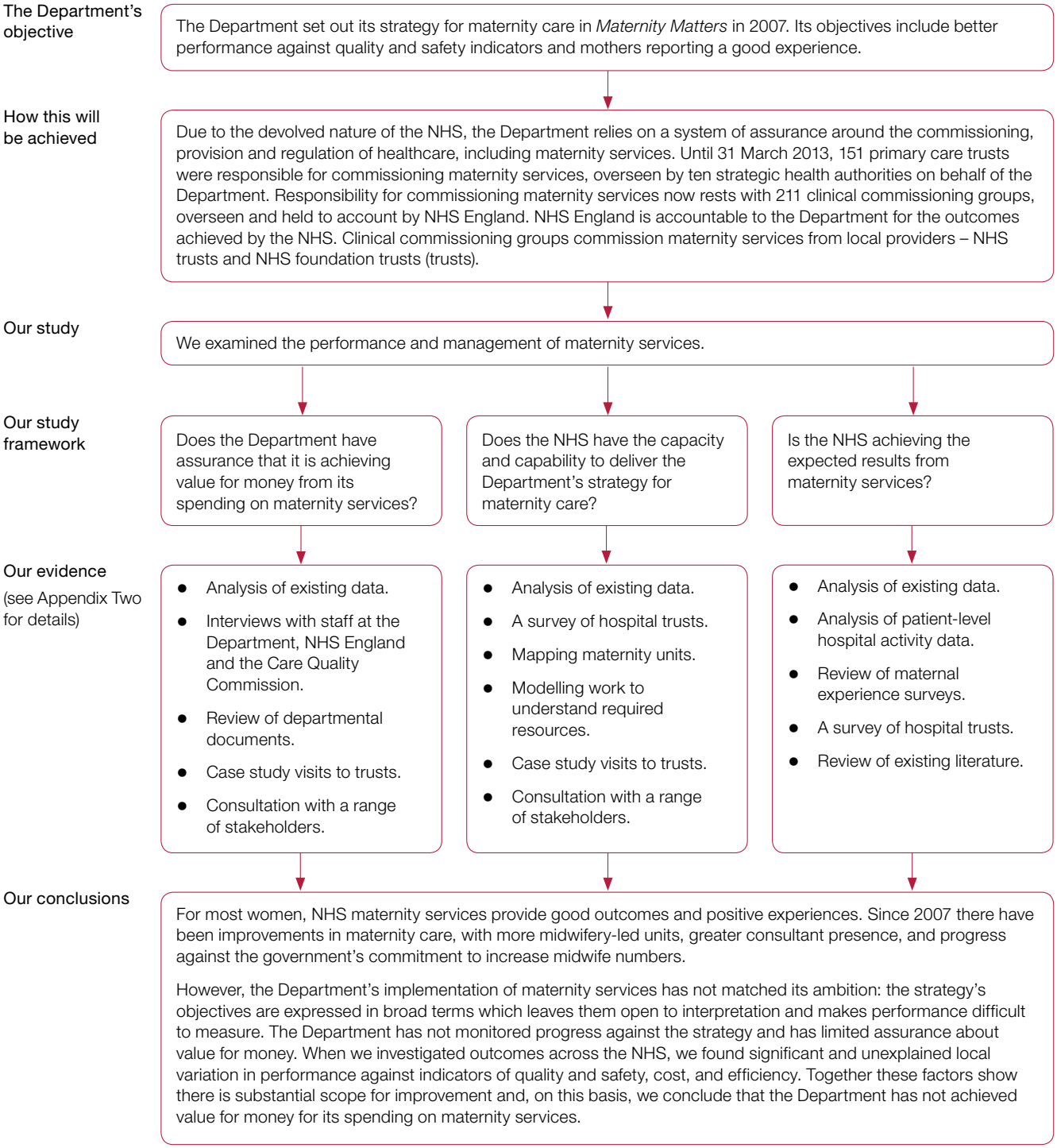
2 In reviewing these issues, we applied an analytical framework with evaluative criteria, which consider what arrangements would be optimal for delivering high quality maternity care. By 'optimal' we mean the most desirable possible, while acknowledging expressed or implied restrictions or constraints. A constraint in this context is the demographic characteristics of the population.

3 Our audit approach is summarised in **Figure 13** overleaf. Our evidence base is described in Appendix Two.

4 This report does not cover the specialist services provided to newborn babies, which were examined in our 2007 report on neonatal care.[35] A summary of progress against the recommendations subsequently made by the Committee of Public Accounts is set out in Appendix Three.

35 Comptroller and Auditor General, *Caring for Vulnerable Babies: The Reorganisation of neonatal services in England*, Session 2007-08, HC 101, National Audit Office, December 2007.

Figure 13
Our audit approach



Appendix Two

Our evidence base

1 We reached our independent conclusions on the performance and management of maternity services after analysing evidence that we collected between January and September 2013. Our audit approach is outlined in Appendix One.

2 We conducted a web-based survey of all acute trusts and all individual maternity units in England. The survey was designed to fill key gaps in information, including on the distribution and capacity of maternity units. Each trust was asked to give a collective response which the trust's chief executive signed off as accurate. Of the 139 trusts that we sent a questionnaire to, we received a response from 131: a response rate of 94 per cent. We achieved a response rate of 88 per cent from individual maternity units (277 from 316). The questionnaire was based on a previous survey administered by the Healthcare Commission in 2007. The definitions used for the different settings of maternity care are given in paragraph 10 of this appendix.

3 We carried out a mapping exercise of maternity units. The mapping built on work commissioned by the NCT in 2009[36] and was designed to explore women's access to providers of maternity care. We used software to map the current address and type of service provided at maternity units in England (using postcodes collected from our web-based survey and validated by data from BirthchoiceUK). We then assessed distances (drive times) to nearest maternity units (by type) for 2007 and 2013.

4 We conducted four case study visits to NHS trusts and NHS foundation trusts:

- We selected our case study sites to reflect key factors that might affect service configuration, including number and mix of maternity units within a trust, and geographic location.
- The case study visits consisted of interviews with a range of general and clinical management staff, clinicians and representatives from the local commissioners and maternity services liaison committee.
- The case study visits supplemented the quantitative analysis we had undertaken and were designed to explore the challenges trusts face in providing maternity services. We conducted two case studies at the start of our fieldwork to explore potential issues, and two towards the end of our work so that we could test our emerging findings.

36 R Gibson and M Dodwell, *An Investigation into Choice of Place of Birth*, NCT, 2009.

5 We analysed existing data on the performance of maternity services. The Department has had few quantified performance indicators and so, to evaluate performance, we used comparisons: with recommended benchmarks; over time; and between providers. Where possible, and relevant, we calculated adjusted rates to account for differences in maternal characteristics and risk factors to ensure comparisons were fair. We explored data on activity, outcomes and costs, including: national surveys of maternal experience; the Office for National Statistics' mortality data; the Health and Social Care Information Centre's data on hospital intervention rates and workforce numbers; litigation claims data; and the Department's reference cost data. In addition, we:

- Completed a regression analysis on **maternal experience data** collected by the Care Quality Commission to explore variation in access, experience and satisfaction levels among different groups of mothers.
- Worked in collaboration with the Dr Foster Unit, Imperial College, London to develop **measures of quality, safety and intervention rates** based on administrative data (Hospital Episode Statistics). Many of the indicators were based on a previous study by the Royal College of Obstetricians and Gynaecologists.[37] The results were adjusted for differences in type of cases, including: age of mother; gender of baby; parity; multiple deliveries; socio-economic deprivation; previous caesarean section; ethnic group; gestational age; birth-weight; delivery method; and other maternal conditions.
- Created an indicator of staffing by **comparing cost-weighted activity to staffing level**. To calculate cost-weighted activity, for each trust, we multiplied annual obstetric activity in 2011-12 by the average tariff cost. To reduce bias from some trusts conducting more medical interventions (and so increasing their cost-weighted activity), we applied standard costs for the delivery admissions. The total cost-weighted activity was divided by the full-time equivalent number of midwives to produce a rate for each trust.

6 We undertook a detailed modelling exercise with one trust to provide an insight into local management issues and the resources required to meet current policy objectives. We developed a 'discrete event simulation' model of maternity care in the trust to evaluate the effect of possible changes in demand (for example birth rate), local capacity (for example theatre availability), and objectives (for example coverage of one-to-one care in labour). A more detailed summary of our modelling work will be available on our website.

7 We examined key departmental documents relating to the *Maternity Matters* strategy and objectives. We also interviewed staff at the Department, NHS England and the Care Quality Commission. This work was designed to assess the extent to which the Department had defined its objectives, assessed whether the objectives were achievable, and monitored the progress of the NHS.

37 Royal College of Obstetricians and Gynaecologists, *Patterns of Maternity Care in English NHS Hospitals 2011/12*, May 2013.

8 **We interviewed and/or consulted a range of stakeholders.** This work was designed to obtain views on: the clarity of the Department's aims and objectives; the understanding of required resource levels in the NHS; the key successes and shortfalls of maternity services; and the challenges the NHS faces in providing a safe, cost-effective service that meets the Department's objectives. We received written submissions from: the British Association of Perinatal Medicine; the Birth Trauma Association; electivecesarean.com; the NCT; the Royal College of Midwives; the Royal College of Obstetricians and Gynaecologists; and Sands (stillbirth and neonatal death charity). We also consulted a number of academic researchers in this area.

9 **We carried out a series of discrete topic-focused literature reviews** of NHS and academic documents to explore a range of issues. These included, but were not limited to, the performance of providers against quality and safety measures, and the efficiency of providers.

Defining the different types of maternity units

10 We used the following definitions for the different settings of maternity care:[38]

- **Obstetric unit:** an NHS clinical location in which care is provided by a team, with obstetricians taking primary professional responsibility for women at high risk of complications during labour and birth. Midwives offer care to all women in an obstetric unit, whether or not they are considered at high or low risk, and take primary responsibility for women with straightforward pregnancies during labour and birth. Diagnostic and treatment medical services including obstetric, neonatal and anaesthetic care are available on site.

- **Alongside midwifery unit:** an NHS clinical location offering care to women with straightforward pregnancies during labour and birth in which midwives take primary professional responsibility for care. During labour and birth, the full range of diagnostic and treatment medical services, including obstetric, neonatal and anaesthetic care are available, should they be needed, in the same building, or in a separate building on the same site. Transfer will normally be by trolley, bed or wheelchair.

- **Freestanding midwifery unit:** an NHS clinical location offering care to women with straightforward pregnancies during labour and birth in which midwives take primary professional responsibility for care. General Practitioners may also be involved in care. During labour and birth, diagnostic and treatment medical services, including obstetric, neonatal and anaesthetic care, are not immediately available but are located on a separate site should they be needed. Transfer will normally involve car or ambulance.

38 Birthplace in England Research Programme, *2010 Update: Configuration of Maternity Care Unit Questionnaire*, 2010.

Appendix Three

Progress against the recommendations made by the Committee of Public Accounts on neonatal care

Recommendation	Progress to date
The Department should set the Task Force clear objectives and associated milestones for improving services, and monitor achievements against these milestones to ensure delivery of the objectives by the end of 2008-09.	The Neonatal Task Force was established in early 2008 and published a *Toolkit for high quality neonatal service* (the toolkit) in 2009. Having achieved its scope, the Task Force was disbanded in March 2010.
Primary care trusts need to improve their understanding of the changing demographics of their local population and model the impact on demand for neonatal services to target intervention and prevention strategies on key high-risk groups.	Understanding of local demand for neonatal services has been supported by: ● guidance on understanding local needs in the toolkit; and ● the use of joint strategic needs assessments to assess local health needs.
All networks should work with their relevant primary care trusts to use the information from local strategic needs assessment to inform the designation of neonatal units, taking into account the standards recommended by the relevant professional groups. Primary care trusts should base their commissioning of neonatal services on units being able to demonstrate that they have the right levels of suitably qualified and experienced staff to provide the designated levels of care.	The toolkit includes a list of indicative quality markers against which strategic health authorities assess performance.
In return for continued funding of networks, strategic health authorities should agree a set of performance measures and review networks' performance against these objectives.	The toolkit includes a list of indicative quality markers against which strategic health authorities assess performance.
Strategic health authorities should also require the two areas without a formal managed network to establish them as a priority.	For the two areas identified as having no formal managed network: ● a Northern network was established in 2009; and ● units in Essex were linked to existing networks. Our 2013 survey found that 98 per cent of trusts were participating in a neonatal network.
In setting tariffs for neonatal care, the Department should ensure that the full costs, including the costs of meeting professional staffing standards and providing transport services, are taken into account.	Care for 'neonates' became part of the national payment by results tariff in 2009. Tariff figures are based on results of the neonatal minimum critical care dataset, which has been mandatory for collection since April 2008.

Recommendation	Progress to date
Strategic health authorities and the new Neonatal Task Force should develop a national action plan to address neonatal nurse shortages, including developing recruitment and retention initiatives based on good practice.	The Neonatal Task Force published guidance on staffing of neonatal services as part of the toolkit.
Strategic health authorities working with networks need to develop local partnering arrangements so that all neonatal units have 24-hour access to appropriately staffed transport services.	NHS England service specifications require that regional neonatal transfer services provide 24-hour access to safe and secure neonatal transport services for all units within their catchment area. Our 2013 survey found that 89 per cent of trusts had a dedicated neonatal transport service available to their trust, 24 hours a day, seven days a week.
The functionality of the national cot locator needs to be improved so that it identifies occupancy levels in order to meet the needs of networks and units wishing to transfer babies.	A national cot locator system was established in 2006 but was discontinued in 2008-09. Cot location is now provided by regional neonatal transfer services.

Source: National Audit Office assessment on progress against recommendations in: HC Committee of Public Accounts, *Caring for Vulnerable Babies: The reorganisation of neonatal services in England*, Twenty-sixth Report of Session 2007-08, HC 390, May 2008.

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