



# research digest

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## BIRTHPLACE IN ENGLAND – NEW EVIDENCE

Availability, safety, processes, and costs of different settings for birth

This digest highlights new evidence from recently published research on maternity services across England. It provides authoritative findings from the Birthplace Research Programme, commissioned in 2007 to address key gaps in the evidence, including a national prospective cohort study of low-risk women (see glossary) giving birth in different settings. The Birthplace cohort study is the largest study of its kind in the world, designed to inform those who plan, commission and deliver maternity services. The first four studies were completed in November 2011 and a further two are due to complete during 2012.

### Overview

The last ten years has seen clear policy direction on the importance of offering healthy women choice in where they give birth<sup>1</sup>. However, to date, the evidence on the quality, safety and costs of different settings has been limited to small scale and inadequate studies. Maternity services are complex, covering a range of providers from community midwives supporting uncomplicated home births to specialist units delivering high dependency care for sick women

and babies. Different models of care have developed in each locality, reflecting local patterns of services and national changes in medical training, restricted junior doctor hours, new maternity staffing standards and reconfigurations of neonatal care<sup>2</sup>. In addition to consultant-led obstetric units based in hospital, many areas have midwife-led units, or birth centres, either as freestanding units or alongside hospital obstetric units. Different services are configured in different ways, but these are poorly described and understood.

At the same time, maternity services have come under increasing scrutiny. Around 60 per cent of all litigation payments are for obstetric and gynaecology cases<sup>3</sup>, consistent messages emerge from examination of unexpected deaths<sup>4</sup> and safety concerns have continued to have high profile in local and national press. Regulators have highlighted uneven access and standards of

### Read more to find out:

- what maternity services are provided in England and how these vary
- the latest data on costs, quality and safety in different birth settings
- how local services are rising to the challenge of providing a choice of high-quality services for women giving birth.

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care across providers<sup>5</sup>. In addition, birth rates have been rising since 2003 and have reached the levels last seen in the early 1970s<sup>6</sup>, with associated pressures on workforce and provision.

The Birthplace Research Programme was commissioned in 2007 to address key gaps in the evidence. These included the pattern of current services and availability of different models of care; the ways in which maternal and infant outcomes differ between settings; their comparative cost-effectiveness; and the organisational features of maternity care systems that might affect the quality and safety of care. These important questions were addressed in an ambitious programme of work led by the National Perinatal Epidemiology Unit and funded by the NIHR Service Delivery and Organisation Programme and the Department of Health Policy Research Programme.

### What did we know already and what does this research add?

In 2007, NICE clinical guidelines on intrapartum care<sup>7</sup> emphasised the need for good quality research comparing the clinical outcomes, including safety, of

planned place of birth. There was moderately good evidence<sup>8</sup> that women planning to give birth in a midwifery unit or at home had a higher likelihood of having a normal birth with fewer medical interventions, but reliable evidence relating to possible risks to either the mother or baby was lacking. Since then, there have been several observational studies in the Netherlands, Canada and Sweden suggesting no differences in outcomes for birth at hospital or home, although not all were large enough to detect serious but uncommon outcomes for mothers and babies. In these studies, not all health systems and staffing models are directly comparable to maternity services in the UK. Another difficulty is that many studies make inferences about planned place of birth, but data are drawn from the actual place of birth, which can be different. Taken together, the evidence base did not give definitive answers for managers, clinicians or patients on the quality and safety of different places of birth for low risk women.

The Birthplace Research Programme was designed to address these knowledge gaps. For the first time, we now have good information on the costs, safety and quality of different

NHS birth settings for low risk women. We also know how services vary in different parts of the country and have some insights into the characteristics of those organisations which deliver high-quality care.

The significance of this research programme is in its scale and comprehensive coverage. The cohort study of over 60,000 'low risk' births provides definitive answers<sup>9</sup>. The research programme has also generated new information to overcome gaps and shortcomings in the quality and availability of routinely collected data. The various components of the programme collected individual level data on interventions, complications, outcomes and resource use, and unit-level data on throughput, staffing levels, and skill mix. The cost-effectiveness component included 'bottom-up' and top down costing using clinical and cost data not available from routine data sources, including detailed tracking of costs associated with each planned place of birth, such as the costs of transfer and any subsequent treatment and care required in hospital by women or their babies immediately following the birth<sup>10</sup>. This is the first study to capture individual-level activity, costs and

### What does this mean for me?

"The Birthplace study is an essential source of information and evidence to inform the organisation and planning of maternity services, and vital reading for anyone involved in delivering or commissioning of maternity care. This digest provides the key messages from the research in a condensed and accessible format, highlighting the main issues and asking questions about how we can improve the quality of services we offer to women."

Liz Rutherford, General manager: Maternity and Neonatology, Imperial College Healthcare NHS Trust

outcome for complex maternity service pathways on this scale.

Overall, the Birthplace study confirms that giving birth is very safe, with a very low rate of harm to women and their babies. The study provides evidence that healthy women with straightforward pregnancies can safely be offered a choice of birth setting and confirms that for 'low risk' women, midwifery units offer a safe and cost-effective alternative to obstetric units, with benefits for the mother such as considerably lower rates of intervention.

This study also provides new insights – namely, the increased risks for the babies of first-time mothers in planned home births and greater chances of transfer during labour to hospital for women who plan to have their first baby at home or in a midwifery unit. Transfer rates were high for first-time mothers with almost half of planned home births, to just over a third for those in freestanding midwifery units transferring during labour. In many ways, this study underlines a key distinction between first-time and other mothers, with distinct risk profiles and needs. Routine information does not currently capture transfer activity adequately, so this new information is important.

The study found that intrapartum care costs are lower for planned births outside an obstetric unit with potential for cost savings in these settings, particularly for women having second or subsequent babies where the

### At a glance

- Evidence supports the policy of offering low risk women a choice of birth setting.
- There is considerable variation within and between regions on what services are provided and evidence of inequalities in provision. Options for place of birth have improved since 2007, but almost half of all women do not have a full range of choice. At present, less than 10 per cent of women give birth outside an obstetric unit.
- Planned births in midwifery units have the same outcomes for babies compared with obstetric units, with fewer interventions and around half the rate of caesarean sections for low-risk women.
- For women having a first baby, a planned home birth increases the risk for the baby and there is a fairly high probability of transfer to hospital during or immediately after labour.
- For women having a subsequent baby, a planned home birth does not increase risk for the baby, and reduces the risk of interventions for the mother.
- A third to almost a half of first-time mothers transfer from home and midwifery units to obstetric units.
- Intrapartum care costs are higher in obstetric units, even given substantially lower occupancy rates and higher staff ratios in midwifery units. Should occupancy rates rise in freestanding midwifery units, the cost-effectiveness differential could be even more marked. However, the main cost drivers are unit overheads and staffing, which would make simple cost shifting difficult.
- The shortage of midwifery staff is another challenge – given higher staff ratios in settings outside obstetric units, any expansion of home and midwifery units (although potentially cost-saving) is likely to require more midwives. Those reviewing services need to consider the impact across the whole system, taking into account costs, benefits and staffing capacity.
- There is substantial variability in costs, occupancy rates and staffing levels between units of similar types.
- Increased provision of midwifery units (freestanding and alongside units) and home births is potentially cost saving, particularly for women having their second or subsequent children, but the study did not assess the potential financial impact on trusts of changing the configuration of services.
- Variations exist at trust level in support to out-of-hospital births, including deployment of community midwifery and teamwork across the maternity workforce. Hub and spoke models, with an obstetric unit linked to a number of freestanding midwifery units, may offer benefits, including rotation of midwifery staff to different settings.

cost-effectiveness analysis favours non-obstetric unit settings. However, the study noted that the main cost drivers are fixed unit overheads and staffing costs, making it potentially difficult to realise cost savings or make simple disinvestment decisions based on these figures alone.

The shortage of midwifery staff may also present a challenge. Data from the Birthplace study indicate that obstetric units currently provide less one-to-one care than other settings (as recommended in NICE guidelines<sup>7</sup>). Although an expansion of midwifery units is potentially cost-saving, an increase in one-to-one care would be likely to require an overall increase in midwifery staffing numbers. Other factors include occupancy rates. This study shows that occupancy rates in freestanding midwifery units are, on average, around half of that for obstetric units and alongside-midwifery units. Commissioning decisions need to consider costs and benefits across the system as a whole, taking into account safety, risk of transfer, occupancy rates, overheads, staffing capacity and related skills and training issues.

Before this study, we did not have up-to-date information about the extent of variation within and between regions in the models of care available to women. In 2010 just under half of trusts did not provide midwifery units although provision had increased since earlier surveys. Since 2007, there has been more choice for women, with particularly rapid expansion of alongside

midwifery units. However, these vary greatly in capacity from a few rooms in an obstetric unit to a separate floor of a hospital, and additional work is underway to better understand how these units function in practice.

Further valuable information is provided by the organisational case studies. In-depth work at four trusts provided insights into characteristics of high-performing organisations. Trusts varied in the amount of support they provide for out-of-hospital births and a key challenge for all was the effective deployment of community midwives across multiple settings. There were concerns about training, support and development for midwives, often working in isolation and with limited exposure to high-risk cases. Solutions in the case study sites included deployment

of staff on rotation across multiple settings, including hub and spoke models, and organising midwifery services within caseload models.

### Local good practice

The Birthplace Research Programme highlighted a number of challenges facing providers of maternity services. Local services are tackling these in different ways and this Digest sets out some examples that highlight the importance of delivering services across a whole system. These include trusts which have made gains by improving choice in locality by extending midwifery and home birth options; developing the support workforce; maintaining competencies of community midwives by rotating staff across settings; and improving management of transfer.

#### Five questions to ask about your maternity services:

- What choice of services is offered to women in your patch?
- Have you reviewed services against need, cost and women's preferences?
- Is there scope to expand non-obstetric unit provision?
- What are the workforce and training implications? How can you meet aspirations for one-to-one midwife care in established labour and 24/7 consultant cover on obstetric units?
- How can transfers be managed better? For instance, have you developed protocols for handover and emergency transfer, with input from ambulance and maternity staff?

## Glossary

**Alongside midwifery unit (AMU):** These are co-located units which are in the same building or on the same site as an obstetric unit, again for low-risk women where midwives are lead professionals. Transfers to obstetric units are usually by wheelchair or trolley/bed.

**Freestanding midwifery unit (FMU):** Sometimes called birth centres, these are led by midwives for low-risk women (sometimes with input from general practitioners). These units are geographically separate from hospital obstetric or consultant-led units. Transfer will normally involve car or ambulance.

**Home birth services:** Labour care provided at home by community midwives.

**Low-risk women:** As defined in NICE guidelines for intrapartum care<sup>7</sup>, excludes women at higher risk of complications, such as those with pre-existing conditions, for example diabetes or pre-eclampsia, or multiple pregnancies.

**Obstetric unit (OU):** Hospital-based care provided by a team with obstetricians taking responsibility for high-risk women and midwives taking responsibility for low-risk women (but caring for all women admitted). A full range of medical services should be available 24/7.

## References

For further detailed review of the evidence and full references, download [www.netscc.ac.uk/hsdr/files/project/SDO\\_FR1\\_08-1604-140\\_V02.pdf](http://www.netscc.ac.uk/hsdr/files/project/SDO_FR1_08-1604-140_V02.pdf)

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## Summaries of recent research

These research summaries provide more detail about the four completed Birthplace Research Programme studies, published in 2011. They provide an account of their findings on:

- the mapping of current services
- quality and safety of different places of care
- cost-effectiveness
- insight into organisational features of different settings.

Two further birthplace studies will be published during 2012, providing more information on cost-effectiveness and on possible differences between settings in the proportion of babies who die during labour or shortly after birth.

### Study one: Mapping maternity care

There have been rapid changes in the organisation of maternity services. When this study was commissioned, there was little reliable evidence about the nature, geographical location, distribution of midwifery units and their relationship to obstetric and home birth services. Detailed evidence was also lacking about staffing and capacity in all types of maternity unit. This study aimed to describe how maternity services were organised and changes over time.

#### Method

Data from all trusts providing maternity care in England was collected by a mandatory survey in 2007 carried out as part of a Healthcare Commission review. Data were returned from all 152 trusts providing maternity care in England (100 per cent). A follow-up survey was carried out at the end of 2010 by the research team. Fewer trusts responded to the 2010 survey (63 per cent) though these were representative in terms of configuration.

Basic data were available for all trusts in 2010 (100 per cent) on numbers and types of unit and trust configuration.

#### Findings

This study generated much interesting and rich data about the organisation of maternity services. Highlights are provided below, but more detail is provided in the source report and summary.

- The configuration of maternity care within trusts changed over the course of the study: in 2007, two thirds of trusts (66 per cent) contained only one or more obstetric units and by 2010, the proportion had decreased to half (49 per cent). By 2010, the overall number of midwifery units had increased by 11 per cent, with twice as many AMUs as in 2007 (53 compared with 26).
- There were marked differences in the numbers of midwife-led units in different areas of England.
- Of women giving birth in 2007, around 8 per cent gave birth outside an obstetric unit –

2.8 per cent at home, around 3 per cent in alongside midwifery units and just under 2 per cent in freestanding midwifery units.

- There was substantial variability in 'occupancy' (women giving birth per delivery bed) within and across all unit types and between geographical regions.
- Eligibility criteria for admission to FMUs and to AMUs were not consistent for either type of unit.
- Midwifery staffing levels (midwives per 1000 births) varied between units of the same type and between the different types of unit: similarly, there was substantial variation in levels of medical staff (obstetricians and anaesthetists) at obstetric units.
- Midwifery vacancy rates varied between different parts of the country, with highest rates in London.
- Not all trusts were using maternity support workers in 2007, particularly in midwifery-led units.

### Lessons and implications

For the first time, this study gives an accurate national picture of the way maternity services are organised, with a complete census of services in 2007. It also indicates some changes in configuration and service delivery since then. Overall, the findings show substantial variation in the number, type and capacity of services in different parts of the country, over and above differences in health needs.

Other changes reflect the increase in the number of midwifery units, although still a relatively small proportion of total maternity care provision.

Changes in specialist medical training and restricted hours have changed the nature of staffing and organisation of care. Rising birth rate and health needs of mothers has put increasing pressure on maternity services of all type to meet demands. Skill mix is changing and maternity support workers are possibly under-used as a resource – greatest use is seen in obstetric units. Detailed information is presented in this study on the maternity workforce and midwifery and maternity support worker staffing, vacancies and turnover. This information could be usefully translated into tools for local use in planning and delivering care.

### Source

Mapping maternity care: the configuration of maternity care in England. Birthplace Research Programme. Final report part 3. NIHR Service Delivery and Organisation programme; 2011. [www.netscc.ac.uk/hsdr/files/project/SDO\\_FR3\\_08-1604-140\\_V04.pdf](http://www.netscc.ac.uk/hsdr/files/project/SDO_FR3_08-1604-140_V04.pdf)

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## Case study one: Shrewsbury and Telford NHS Trust

Shrewsbury and Telford NHS Trust is one of a few trusts in the country that provide women with the choice of birth in all four types of birthplace. Their 'hub and spoke' model, where a central obstetric unit supports the work of four community based freestanding midwife-led units, has been recognised for promoting high rates of normal birth outside of the hospital. Out-of-hospital birth is embedded within the service at Shrewsbury and Telford and normalised, rather than regarded as an unusual or risky choice. The trust's maternity service is notably community, rather than hospital-focused and services are brought to women living outside of the larger towns. The community freestanding midwife-led units host consultant clinics and also provide dedicated postnatal care for local women, even if they give birth in the trust's obstetric unit. Midwives rotate across

all areas to maintain their range of skills and training in normal birth skills as well as emergency skills is provided to all staff. Shrewsbury and Telford's model contributes to one of the lowest rates of caesarean section in the country and demonstrates an example of what can be achieved in promoting normal birth where there is the support of obstetricians and midwives alike. Areas for improvement identified by local practitioners and service users include how to maintain community midwifery care, which is preferred by both women and midwives.

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## Study two: Comparing outcomes for mothers and babies by planned place of birth

At the heart of the Birthplace Research Programme is the prospective national study of more than 60,000 low-risk births. This was designed to answer important questions about the comparative safety and quality of different types of care for women judged to be at low risk of complications. It compared outcomes by planned place of birth and provided descriptive data such as the proportion of women requiring transfer during labour from home or midwifery unit. This is the largest study of its kind in the world.

### Method

This study was of a cohort of 64,538 women classified as low risk. These were taken from all births planned at home and at freestanding and alongside midwifery units and a stratified sample of obstetric units.

Safety for the baby was measured by examining a collection of adverse outcomes that might be affected by the quality of intrapartum care. These included death of the baby and other potentially serious outcomes such as neonatal encephalopathy (caused by the baby's brain being deprived of oxygen before or during birth) and meconium aspiration, together with some non-life threatening, but sometimes disabling, physical injuries to the baby's shoulder. Harms to mothers were also recorded, such as serious perineal tears and need for blood transfusion. Detailed information

not routinely available about labour care and outcomes was recorded by attending midwives and additional data on adverse outcomes were collected after labour from neonatal and maternal medical records.

Detailed analysis was carried out to adjust for differences in the characteristics of women in the different settings.

### Findings

This was a large scale observational study, which yielded a number of important findings.

- Overall, the study found that harm to babies was low in all settings. After adjusting for differences in the characteristics of women, there were no significant differences in safety for women who were not giving birth for the first time. However, for first-time mothers, there was a greater risk of harm to babies for planned home births (9.3 per 1000 births as opposed to 5.3 per 1000 births in obstetric units), but no difference between obstetric units and midwifery-led units.
- Women were more likely to have a 'normal' birth, with fewer interventions in planned home births and midwifery-led services. A woman's chances of an emergency caesarean section, for example, were approximately halved in non-hospital settings for first time mothers and even more substantially reduced for women having a second or subsequent baby.

- This study found that the transfer rate to hospital from the community during labour or immediately after birth was high for first-time mothers. Of those who planned to give birth at home, 45 per cent were transferred to hospital and 36 per cent from freestanding midwifery units. Rates of transfer were much lower for mothers giving birth to second and subsequent babies, ranging from 9 to 13 per cent.
- Around 5 per cent of planned home and midwifery unit births included in the study were to women at higher risk of complications, with the proportion being highest for home births (7 per cent) and lowest for freestanding midwifery units (3 per cent). Current clinical guidelines recommend hospital birth for such women.

### Lessons and implications

The evidence presented here supports the policy of offering 'low risk' women a choice of birth setting. The authors concluded that midwifery units appear to be safe for babies and offer benefits to both the mother, with fewer interventions, and to the baby, with more frequent initiation of breastfeeding. For women not giving birth for the first time, home births appear to be safe for babies and offer benefits to both the mother, with fewer interventions, and to the baby, with more frequent initiation of breastfeeding. For women having their first baby, there is some



evidence that planning to give birth at home carries greater risk of harm to the baby, although absolute risks are small in all settings. The substantially lower incidence of major interventions, including caesarean section, in all three non-obstetric unit settings has potential future benefits to both the woman and the NHS. There is a need to address the higher frequency of major interventions and the relatively low proportion of 'normal' births for low-risk women in obstetric units. Another finding from the study was that a small but not insignificant proportion of planned home and midwifery unit births were to women at 'higher risk' of complications who, according

to current clinical guidelines, should be advised to give birth in an OU. The reasons for this are not clear but some consideration needs to be given to the information and options offered to these higher risk women.

### Source

The Birthplace national prospective cohort study: perinatal and maternal outcomes by planned place of birth. Birthplace Research Programme. Final report part 4. NIHR Service Delivery and Organisation programme; 2011. [www.netscc.ac.uk/hsdr/files/project/SDO\\_FR4\\_08-1604-140\\_V03.pdf](http://www.netscc.ac.uk/hsdr/files/project/SDO_FR4_08-1604-140_V03.pdf)

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## Case study two: Northampton General Hospital NHS Trust

Like many other services, staff at Northampton General Hospital were aware of areas for improvement. Concerns included problems in recruiting and retaining staff, poor skill mix, high rates of caesarean section and inconsistent verbal and written communication between medical and midwifery staff and between hospital and community services. It was difficult to achieve one-to-one midwifery care in established labour or guarantee consultant obstetric presence on the wards. With support from the King's Fund Safer Births initiative, the Northampton maternity team developed a local improvement initiative. This included a number of components, such as:

- clarifying roles and responsibilities, with direction from the labour ward coordinator
- promoting maternity support workers, with induction and training programmes

- introducing routine labour ward consultant rounds
- improving the pathway by using more robust triage techniques to assess risk and divert women to best place of birth, preventing logjam at obstetric units.

This package of improvement measures has not been formally evaluated, but early assessment suggests improved recruitment, lower turnover of staff and higher satisfaction scores from patients as indicated on the patient experience tracker evaluation.

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## Study three: Cost-effectiveness analysis

A key consideration for managers is the relative costs and cost-effectiveness of different places of birth. Because of the scale of the cohort study, there was an opportunity to derive robust estimates of the relative costs of the intrapartum care episode in different settings.

### Method

Detailed costing data were collected by different methods, including 'bottom-up' and 'top-down' costing methods. This involved thorough tracking of overheads, medical and midwifery staffing, medication and costs of transfer by planned place of birth. This new data collection enabled the team to measure and cost actual resource use along the pathway of labour care. The cost estimates included all NHS costs associated with the birth itself, including the cost of any stay in hospital, midwifery unit, or neonatal unit immediately after the birth either by the mother or the baby. These estimates did not include longer-term costs such as those associated with caring for babies who suffer serious birth injuries, or additional care required by women in subsequent pregnancies following a caesarian section or other birth complications.

Three sets of cost-effectiveness analyses were carried out. The first was for the baby, the second for the mother and the third related to the outcome of a 'normal birth' as a desirable end. These were done using data from the large cohort study described above.

### Findings

This study generated a number of important findings, including:

- For low risk women, the cost to the NHS of giving birth, including treatment costs from immediate clinical complications following birth, is lower for births planned at home or in midwifery units compared with obstetric units.
- After adjusting for differences in mothers giving birth in different settings, home births cost £367 less on average, planned freestanding midwifery units £182 less and alongside midwifery units £129 less than births in obstetric units. The cost differences were less for first-time mothers.
- The main cost drivers were unit overheads and staffing. This analysis showed substantial variability in costs between units.
- Analysis was based on average occupancy rates from the mapping study of different places of birth. Occupancy rates for freestanding midwifery units (30 per cent) were under half that of obstetric units (65 per cent) and much lower than alongside units (57 per cent). Should occupancy rates rise in FMUs they would become an increasingly cost-effective source of provision of maternity care.

### Lessons and implications

This study found that planned births in non-obstetric units were less costly and more cost-effective than births planned in obstetric units. However, for

first-time mothers there was an increased risk of harm to babies born following planned home births and the analysis did not take account of possible difference in longer-term costs. This study collected new information on costs and this showed that the main cost drivers were fixed unit overheads and staffing. Should changes to maternity service configuration be planned for cost-effectiveness purposes, then commissioners would have to consider the resource use and related cost implications on the maternity service as a whole. This would require economic modelling and forecasting of occupancy rates, overheads, staffing capacity and related skills and training, patient safety and transfer in view of fixed and variable costs, and the relative disinvestment in one form of maternity service provision in preference for another.

### Source

Birthplace cost-effectiveness analysis of planned place of birth: individual level analysis. Birthplace Research Programme. Final report part 5. NIHR Service Delivery and Organisation programme; 2011. [www.netscc.ac.uk/hsdr/files/project/SDO\\_FR5\\_08-1604-140\\_V02.pdf](http://www.netscc.ac.uk/hsdr/files/project/SDO_FR5_08-1604-140_V02.pdf)

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## Study four: Organisational case studies

Qualitative research was commissioned alongside the other studies to get better insights into how maternity services were delivered and patient and staff experiences of care. These in-depth, qualitative studies of four 'better-performing' trusts illuminated key aspects, including insights into the characteristics of teams and units providing care and features of high-performing units.

### Method

From the Healthcare Commission maternity review in 2007, four trusts were selected with high performance ratings, covering different configurations and rates of home birth. The configurations included combinations of obstetric units and different types of midwife-led units, including a hub and spoke model comprising an obstetric unit and a series of freestanding midwifery units. This study used ethnographic methods, combining observation, documentary analysis and 158 interviews with staff, women and key stakeholders.

### Findings

These were by definition rich and detailed studies of different organisational arrangements for maternity care. Of a range of findings, some key points emerged about organisation of care, including:

- Variations existed at trust level in the support given to out-of-hospital births, including training for safety and teamwork across the maternity workforce.

- The deployment of community midwives across multiple settings was a key challenge for managers. There were also concerns about support and development for community midwives, often working in isolation with limited exposure to higher risk births. Some trusts had managed this by deploying midwives across community and hospital settings, for example within team or caseload models. An interesting model was a hub and spoke, with an obstetric unit and linked midwifery units, offering potential for rotation of staff across settings to maintain skills.
- A key characteristic of high-performing services appeared to be strong midwifery and obstetric leadership and a culture of mutually supportive professional teamwork across settings.
- There was variation in the information provided by trusts to support choice for women.

### Lessons and implications

This study provided useful contextual information to explain and interpret some of the other findings. It indicated: uneven application of the policy of offering women choice of place of birth; variation in support for out-of-hospital births; challenges in maintaining skill levels for community midwives with limited exposure to more complex care; and organisational cultures in alongside-midwifery units which were not always distinct from those in obstetric units. Some

of these issues will be explored further in the more detailed study of alongside-midwifery units. The model of hub and spoke care, with an obstetric unit linked to a number of freestanding midwifery units, appears to be a useful model to explore.

### Source

Birthplace qualitative organisational case studies: How maternity care systems may affect the provision of care in different birth settings. Birthplace Research Programme. Final report part 6. NIHR Service Delivery and Organisation programme; 2011. [www.netscc.ac.uk/hsdr/files/project/SDO\\_FR6\\_08-1604-140\\_V02.pdf](http://www.netscc.ac.uk/hsdr/files/project/SDO_FR6_08-1604-140_V02.pdf)

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### Case study three: Guy's and St Thomas' NHS Foundation Trust

Guy's and St Thomas' maternity services are provided through an OU, an AMU, and community midwives working with a combination of models. This service provides care for home births (2 per cent) through seven caseload midwifery group practices in diverse areas, including a Teenphase team. To promote equal access, one phone number was established for all women to call for information about the range of maternity services available. In this large, busy, inner city trust, pressure on staffing and space is magnified by the demands of caring for a diverse and fast-growing population with high levels of complexity. Midwifery managers promote choice and normal birth across the system with support from multi-disciplinary teams. An 'outwith guidelines' clinic facilitated by a consultant midwife exists for midwives and women to

consult about borderline criteria for AMU admission. Risk governance, documentation, use of clear clinical guidelines to inform care choices, use of safety tools, and continual learning from discussion of cases are integrated into the everyday running of services. Midwifery managers set a positive example and maintain practice credibility by doing regular clinical shifts. Maternity managers and staff pursue levels of excellence that have been recognised in formal assessments.

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### Case study four: Ipswich Hospital NHS Trust

Following a maternal death, Ipswich midwifery services initiated a review to improve emergency transfer arrangements from community to hospital. The review involved a number of stakeholders and series of improvements, working with support from the King's Fund Safer Births initiative.

Priorities for action included:

- briefing and training for ambulance staff
- better communication between community and hospital staff to ensure receiving team had all the information they needed to act as soon as the woman arrived (using structured handover tools)

- standardising community equipment (including emergency box) for midwives working in rural areas
- scenario-based training for emergencies for a range of maternity staff
- developing robust emergency protocols (for example for cord prolapse) and making them available to all staff.

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## Case study five: Southend University Hospital NHS Trust

Maternity care in Southend was formerly provided by an obstetric unit and community midwives working through GP surgeries, with local variations in uptake of home birth services. Following a community study and a sustained period of participatory planning, in 2010 an AMU was opened and community midwifery services were reconfigured. These changes, achieved with few additional resources, were introduced to increase women's choice and equality of access to midwife-led care. Woman-centred care and communication continue to be promoted with strong and positive leadership across all services. Despite concerns about the co-located unit affecting the trust's high home birth rate (5 per cent), this had been successfully maintained. A fifth of all births now occur in the AMU and there has been some reduction

in caesarean section rates. Midwife recruitment was slow before reconfiguration, but most vacancies have now been filled and the new staffing arrangements have gained acceptance. Southend University Hospital NHS Trust shows considerable promise as a model for integrating 'low-risk' births across community and hospital settings, and for providing community midwives with adequate opportunities to strengthen their birth support skills and experience.

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## Case study six: North Cumbria University Hospitals NHS Trust

Community midwives in north Cumbria are providing continuity of care in deprived rural and urban areas. Local neighbourhood midwives help women to access maternity care early in their pregnancy and this has been particularly effective within communities that do not otherwise engage with local health services. The maternity service has good relationships with other local agencies and they collectively support vulnerable women and provide specialist services, for example for teenage parents and newly arrived migrant women. The workforce is longstanding and stable, meaning staff are familiar with each other and used to working together. Positive relationships, both within and between professional groups are particularly valuable during escalation of care and transfer, which is important in an area where transfer from home or

the freestanding midwife-led unit is complicated by long distances. This is an important underpinning to the provision of a free-standing midwife unit in this large rural area. Areas for improvement identified by local practitioners and service users include levels of community midwife staffing, training and experience to maintain home birth support over a highly dispersed community area and resources to restore 24-hour availability of the FMU.

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## Related research underway

The Birthplace Research Programme provides a rich source of data for further analysis and investigation. Two further studies will be published during 2012, providing more information on cost-effectiveness and transfers from midwifery units. A qualitative follow-on study of AMUs was commissioned by the NIHR HS&DR Programme in the last six months and further follow-on studies are also imminent.

### Further birthplace cost effectiveness analysis

The cost-effectiveness study described earlier was based on individual patient analysis using data from the Birthplace cohort study. This later study uses decision analytic modelling techniques to estimate cost-effectiveness of different planned

birth settings on linked outcomes for mothers and babies to provide a useful single measure of a healthy birth. Overall, the modelling work will identify areas for further research for longer-term outcomes on the cost-effectiveness of different planned places of birth.

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### Linked study of transfer from midwifery units to obstetric units during labour

The Birthplace study found high rates of transfer to hospital, particularly for first-time mothers. This study provides further information on transfers from midwifery units, including:

- detailed analysis of information on transfers from midwifery units using birthplace cohort data
- a review of NHS trust guidelines on transfer
- qualitative research with women about their experience of transfer in labour.

Results provide useful pointers improving care and women's experiences of care. These include information on the socio-demographic and clinical characteristics associated with transfer, the need for clearer information and better preparation for possible transfer for women planning birth in midwifery units, and the need for good communication throughout the transfer process, particularly at handover and transfer debrief.

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## Follow-on organisational study of alongside midwifery units

The mapping study highlighted the new organisational form of alongside-maternity units, which appeared to be growing in number. They varied greatly, from a few rooms in a delivery suite to an entire floor or unit on a hospital site, but there has been little research carried out. This study will look in depth at four of these units – chosen to

reflect key differences – to explore the way they are organised, staffed and managed. Case study methods will be used, combining observation and interviews with staff and women using services. The study will report in 2013 and should provide insights to inform the development, management and staffing of these units.

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### The Service Delivery and Organisation (SDO) Network

The SDO Network supports NHS managers to use research to improve and develop the services they manage. The network is funded by the National Institute for Health Research Service Delivery and Organisation (NIHR SDO) programme.

For more information visit [www.nhsconfed.org/SDONetwork](http://www.nhsconfed.org/SDONetwork) or contact [SDONetwork@nhsconfed.org](mailto:SDONetwork@nhsconfed.org)

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