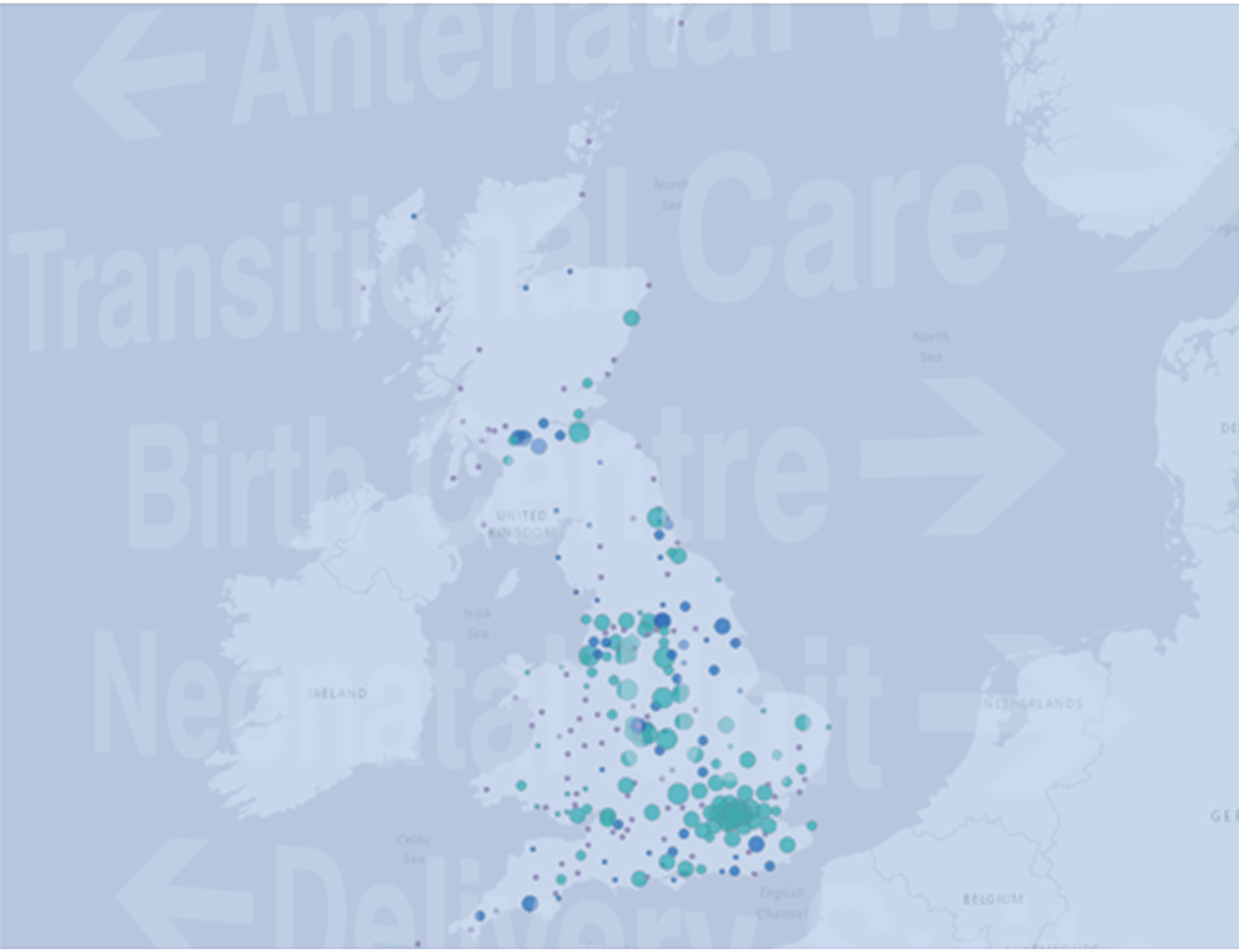
National Maternity and Perinatal Audit

Organisational report 2017



LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
RCPCH Royal College of Paediatrics and Child Health Leading the way in Children's Health
THE ROYAL COLLEGE OF MIDWIVES
Royal College of Obstetricians & Gynaecologists
HQIP Healthcare Quality Improvement Partnership

National Maternity and Perinatal Audit

Organisational report 2017

A snapshot of NHS maternity and neonatal services in England, Scotland and Wales in January 2017

The National Maternity and Perinatal Audit is led by the Royal College of Obstetricians and Gynaecologists (RCOG) in partnership with the Royal College of Midwives (RCM), the Royal College of Paediatrics and Child Health (RCPCH) and the London School of Hygiene and Tropical Medicine (LSHTM)

This report was prepared by the NMPA project team:

Ms Andrea Blotkamp, NMPA Clinical Fellow (Midwifery)
Dr David Cromwell, NMPA Senior Methodological Advisor
Miss Becky Dumbrill, Lindsay Stewart Centre Administrator
Dr Ipek Gurol-Urganci, NMPA Senior Methodological Advisor
Dr Tina Harris, NMPA Senior Clinical Lead (Midwifery)
Dr Jane Hawdon, NMPA Senior Clinical Lead (Neonatology)
Dr Jen Jardine, NMPA Clinical Fellow (Obstetrics)
Ms Hannah Knight, NMPA Audit Lead
Dr Lindsey Macdougall, NMPA Data Manager
Ms Natalie Moitt, NMPA Statistician
Dr Dharmintra Pasupathy, NMPA Senior Clinical Lead (Obstetrics)
Prof Jan van der Meulen, NMPA Senior Methodologist (Chair)

Please cite as:

NMPA project team. National Maternity and Perinatal Audit: organisational report 2017. RCOG London, 2017.

Contents

Tables and figures

Figures

Tables

Acknowledgements

We are immensely grateful to all NHS trusts and health boards in England, Scotland and Wales for completing the organisational survey of the National Maternity and Perinatal Audit (NMPA); the 100% response rate is testament to the commitment of the maternity and neonatal services to quality improvement. In particular, we would like to thank the nine organisations which took part in the survey pilot: Cardiff and Vale University Health Board, Central Manchester NHS Foundation Trust, Hampshire Hospitals NHS Foundation Trust, NHS Greater Glasgow and Clyde, NHS Highland, Powys Teaching Health Board, Royal Cornwall Hospitals NHS Trust, Royal Free London NHS Foundation Trust and Wye Valley NHS Trust.

The organisational survey and report have benefitted greatly from the advice of the members of the NMPA Women and Families Involvement Group and the NMPA Clinical Reference Group (see appendix 6). We are also grateful to the National Audit Office and the National Perinatal Epidemiology Unit for sharing the questionnaires of previous organisational surveys of maternity care and to the Maternity Clinical Networks for their help with an initial mapping exercise.

Finally we would like to thank NHS Digital, the Information Services Division Scotland, the Knowledge and Analytical Services of the Welsh Government and NHS Improvement for providing additional workforce data.

The NMPA project team and board

Foreword

We are pleased to present the first report of the National Maternity and Perinatal Audit (NMPA). A pioneering collaboration between our three Colleges, the NMPA represents a major step towards understanding what it is to give birth in Britain today and improving the quality of care for women and their babies.

This report describes the organisation of maternity and neonatal services in England, Scotland and Wales. As well as providing insight into current service delivery, the information collected will, for the first time, enable evaluation of clinical outcomes and processes within their organisational context as part of the NMPA clinical audit.

The fact that all eligible trusts and boards have submitted organisational data to the NMPA demonstrates a clear commitment to understanding, measuring and improving quality across NHS maternity services. The NMPA organisational survey ensures that we have a baseline report as we enter a period of substantial change in the wake of the English maternity review and the Scottish maternity and neonatal review.

Improving care quality requires a multidisciplinary approach. The NMPA will provide high quality data to facilitate a concerted effort to improve the care provided to women and babies by our three professions. This, together with the clear commitment to improvement demonstrated in this project, will ensure that we are able to continue to develop services to provide world class care to mothers and their babies.

Professor Lesley Regan, President of the Royal College of Obstetricians and Gynaecologists
Professor Cathy Warwick, Chief Executive of the Royal College of Midwives
Professor Neena Modi, President of the Royal College of Paediatrics and Child Health

It has been a pleasure to be involved in the development of the first NMPA organisational survey. As chair of the Audit's Clinical Reference Group and mother of three children born under NHS maternity care, I believe that maternity and perinatal services are uniquely placed to support and empower parents of all backgrounds to maximise their own health as well as their child's health and development during pregnancy, birth and beyond.

The report covers many topics of importance to pregnant women and new mothers, and the accompanying website provides clear and detailed information about services and facilities available locally and across regions.

This is an exciting time for the maternity and neonatal services; there is a clear will to implement changes to really put women, their babies and their families at the centre of care. The NMPA will support this by holding up a mirror for services so they can identify areas for improvement and examples of good practice to share.

Mrs Victoria Stakelum, Chair of the NMPA Clinical Reference Group
and RCOG Women's Network Member

Executive summary

Introduction

The National Maternity and Perinatal Audit (NMPA) is a national audit of the NHS maternity services across England, Scotland and Wales, commissioned in July 2016 by the Healthcare Quality Improvement Partnership (HQIP) on behalf of NHS England, the Welsh Government and the Health Department of the Scottish Government.

Maternity policy in recent years has focussed on the key themes of improving the safety, effectiveness and experience of maternity care, reducing unnecessary intervention, and reducing inequalities.[1, 2, 3, 4] The NMPA aims to provide high-quality information about NHS maternity and neonatal services; this can be used by providers, commissioners, policy makers and users of the services to benchmark against national standards and recommendations where these exist, compare service provision and maternal and neonatal outcomes among providers, and identify good practice and areas for improvement in the care of women and babies.

The NMPA consists of three separate but related elements:

- an organisational survey to provide an overview of maternity and neonatal care provision in England, Scotland and Wales
- a continuous prospective clinical audit of a number of key measures to identify unexpected variation between service providers or regions
- a programme of periodic audits on specific topics ('sprint audits')

The NMPA organisational report presents a snapshot of maternity and neonatal care provision at the start of 2017, based on information submitted by every NHS trust and board in England, Scotland and Wales.

The information presented in the report and on the NMPA website

- provides context to the NMPA continuous audit and sprint audits, enabling identification of organisational factors which may contribute to variation between service providers
- forms an up-to-date and comprehensive resource providing an overview of maternity and neonatal services nationally, as well as detailing the services provided by individual sites and trusts/boards
- where possible, indicates if the maternity services offer selected organisational aspects of care for women experiencing straightforward and complex pregnancies as recommended in national guidance, standards or policy, and identifies barriers to the implementation of these

Methods

The NMPA organisational survey was developed with reference to national standards, recommendations and government policy regarding organisational aspects of maternity and neonatal care. Following a pilot with a diverse sample of 9 trusts and boards, the survey was conducted online from late January to March 2017.

All NHS trusts and boards providing intrapartum care on site across England, Scotland and Wales were eligible to take part and 100% of the 155 eligible trusts and boards submitted a completed survey (134 English trusts, 14 Scottish and 7 Welsh boards).

This report presents aggregated results; individual trust/board results and results by region are available on the NMPA website (www.maternityaudit.org.uk).

Summary findings

Maternity and neonatal care settings

Maternity and neonatal service configuration is subject to constant change, with half of NHS trusts and boards reporting planned or anticipated changes in the next 3 years. There has been a steady increase in the number of alongside midwife-led units, which quadrupled during the last decade. Two thirds of British obstetric units are now co-located with an alongside midwife-led unit.

A fifth of trusts and boards offer the full range of birth settings (home, freestanding midwife-led unit, alongside midwife-led unit and obstetric unit)[1] and three quarters offer homebirth, at least one of the midwife-led unit types, and obstetric units.

Availability of services and facilities

Maternity and neonatal services are organised in many different ways and 'typical' maternity units do not appear to exist, which may reflect services responding to local needs. More than four fifths of trusts and boards are involved in a maternity network and two thirds in a perinatal mental health network.[a]

Nearly all trusts and boards use an electronic maternity information system to record the care of women and babies but half report that this was not fully accessible to community midwives and only a tenth report that women themselves have access to their electronic maternity record. Nearly all trusts and boards conduct multiprofessional team training for emergency situations involving mothers and babies.

The number of planned community postnatal contacts for healthy women and babies ranges from 2 to 6 between different maternity services. Many services are taking measures to put women and their families at the centre of care, but these are not universal.

Fewer than two thirds of sites with a neonatal unit provide transitional care for babies who need some additional support, either on a postnatal ward or on a dedicated transitional care ward.

Maternity and neonatal services staffing

There is variation in staffing provision, reflecting differences in staffing models and the absence of clear national standards for midwifery and obstetric staffing across the antenatal, intrapartum and postnatal care periods. The level of continuity of carer that maternity services perceive they provide is low, regardless of how midwifery care is organised.

[1] See glossary on p.9/10 for definitions

These findings gave rise to the key messages which follow this executive summary.

Conclusion

The NMPA organisational survey results reveal the extent to which some of the key themes of recent and longstanding national policies have or have not been implemented. With a second NMPA organisational survey due in 2019, they serve as a baseline at the start of a period of considerable change and provide an opportunity to identify barriers to the implementation of recommendations, examine organisational factors in association with clinical outcomes and develop additional standards to benefit women and babies.

Key messages

Maternity and neonatal care settings

Maternity and neonatal service configuration is subject to constant change.

More than a third of NHS trusts and boards report configuration changes in the past 3 years and half report planned or anticipated changes in the next 3 years. These proportions are similar across England, Scotland and Wales. Likewise, half of all trusts and boards report that their neonatal service configuration is under review or that changes are planned.

There has been a steady increase in the number of alongside midwife-led units, which quadrupled during the last decade to 124.

Two thirds of British obstetric units are now co-located with an alongside midwife-led unit (68% in England, 38% in Scotland and 100% in Wales). In England, the number of obstetric units has decreased by 13% since 2007 to 157 and although individual freestanding midwife-led units opened and closed, the overall number increased by 13% during this period to 63.

22% of trusts and boards offer the full range of birth settings (home, freestanding midwife-led unit, alongside midwife-led unit and obstetric unit).[2]

In some areas, geographical factors may impact on the feasibility of providing all four settings. 77% of trusts and boards offer homebirth, at least one of the midwife-led unit types, and obstetric units. However, 19% do not have any midwife-led units and 3% do not have any obstetric units. Trusts and boards, and their commissioners where applicable, should collaborate across geographical areas to ensure all women have access to all four birth settings.

[2] See glossary on p.9/10 for definitions

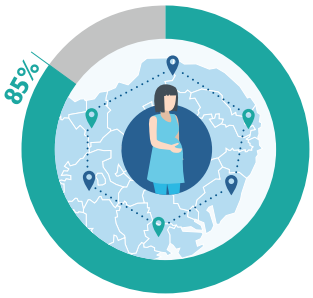
Availability of services and facilities

Maternity and neonatal services are organised in many different ways and 'typical' maternity units do not appear to exist.

This may reflect services responding to local needs. Service planning would be supported by the development of a categorisation system for maternity units based on service provision, unit size and the characteristics of the women who use the service, along similar lines as that for neonatal services.

85% of trusts and boards are involved in a maternity network and 68% in a perinatal mental health network.

All trusts and boards, and commissioners where applicable, should participate in networks to share best practice, plan services and develop agreed referral routes for women and babies needing specialised care. This will allow consideration of the regional distribution of services across all unit types and referral pathways, and integrated planning of maternity and neonatal services.

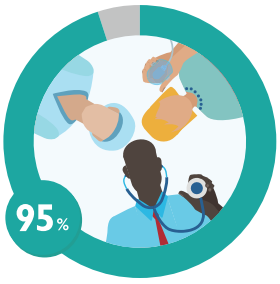


97% of trusts and boards use an electronic maternity information system to record the care of women and babies but half report that this was not fully accessible to community midwives. Only a tenth report that women themselves have access to their electronic maternity record.

Hospital clinicians in other specialities do not have access to electronic maternity records in two thirds of trusts and boards. Commissioners (where applicable) and providers, with the support from their governments, need to address electronic information sharing to enable safe and effective care and give women access to their electronic maternity record.

95% of trusts and boards conduct multiprofessional team training for emergency situations involving mothers and babies.

However, only 56% provide multiprofessional training in communication and 17% in facilitating normal birth. This provision should be expanded.



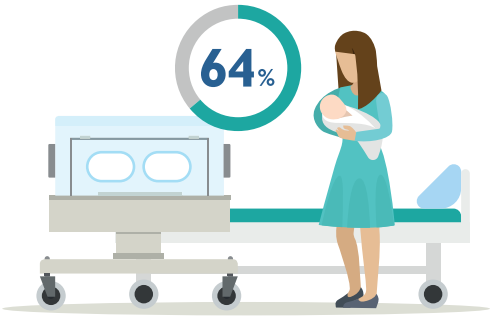
The number of planned community postnatal contacts (home visits or postnatal clinic appointments) for healthy women and babies ranges from 2 to 6 between different maternity services. The median number of contacts is 3.[3]

Scottish and Welsh boards report a higher average number of planned postnatal contacts than English trusts (medians 4.5, 4 and 3 respectively). Services should examine the reasons for the variation in the number of postnatal contacts and national standards should be developed.

Many services are taking measures to put women and their families at the centre of care, but these are not universal.

For example 99% of trusts and boards report involving women in the development and improvement of the services, and 62% and 71% of maternity unit sites respectively allow birth partners to stay at all times on the ward after the birth and in case of labour induction. However, only 63% of sites have a private bathroom for every birth room, which should be improved to preserve privacy and dignity for women in labour.

Although 95% of neonatal units have at least one bedroom for parents of admitted babies, only 16% of neonatal intensive care units have the number recommended by the Department of Health.



64% of sites with a neonatal unit provide transitional care for babies who need some additional support, either on a postnatal ward or on a dedicated transitional care ward.

To reduce unnecessary admissions to neonatal units and keep mothers and babies together where possible, all sites with a neonatal unit should provide transitional care.

69% of sites with a neonatal unit report they are not able to provide data on the transfer of pregnant women from one maternity unit to another for the purpose of immediate access to the appropriate level of neonatal care after the birth (in utero transfer).

Maternity and neonatal services should collaborate to improve the recording of in-utero transfers.

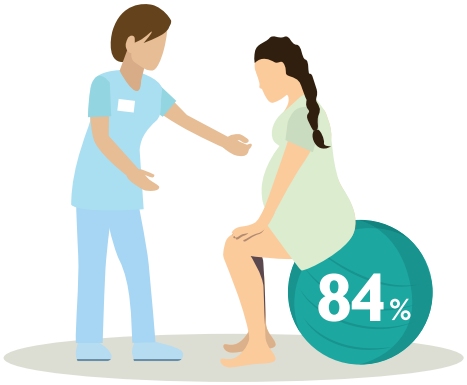
[3] Per definition, postnatal contacts with the midwifery service would take place within 28 days after the birth, although for healthy women and babies they would usually take place during the first 10 to 14 days.

Maternity and neonatal services staffing

There is variation in staffing provision, reflecting differences in staffing models and the absence of clear national standards for midwifery and obstetric staffing across the antenatal, intrapartum and postnatal care periods. To inform the development of such standards, associations between staffing and outcomes should be explored.

88% of sites with an obstetric unit report difficulties in filling obstetric middle grade rotas during the previous 3 months. Medical staffing requirements should be evaluated and standards for obstetric staffing should be developed with reference to case mix and levels of specialist service provision.

Of the sites which monitor one to one midwifery care during established labour, 84% report that at least 95% of women receive this. There is variation in the reported number of antenatal and postnatal beds per rostered midwife, which ranges from 2 to 16 (median 7). Midwifery ward staffing requirements should be examined and standards for antenatal and postnatal ward staffing should be developed after further exploration of associations between staffing and outcomes.



The level of continuity of carer that maternity services perceive they provide is low, regardless of how midwifery care is organised.

Only 15% of trusts and boards use care models for which they report that women see the same midwife for most care contacts in the antenatal, intrapartum and postnatal period, including care in labour from a known midwife. However, none use these care models for all women. Maternity services, and where applicable commissioners, should work towards electronic recording of all maternity care contacts to monitor progress in the ability to provide continuity of carer and to evaluate which care models are associated with the highest levels of continuity of carer.

Abbreviations and glossary

AAGBI – Association of Anaesthetists of Great Britain and Ireland

Amniocentesis – a procedure in which a small amount of the amniotic fluid surrounding the baby or babies is removed in order to test for infection or chromosomal abnormalities

AMU – alongside midwife-led unit; a maternity unit where midwives have primary responsibility for care during labour in women at low risk of complications and which is located on the same site as an obstetric unit so it has access to the same medical facilities if needed

ANNP – advanced neonatal nurse practitioner

BAPM – British Association of Perinatal Medicine

Caseloading – women having a primary midwife providing care during pregnancy, birth and postnatally with back-up provided by another midwife known to the women when necessary

Case mix – the demographic characteristics and state of health of the people using a particular health service

Cell salvage – the process of recovering blood lost during surgery and re-infusing it into the patient after filtering and cleaning

Chorionic villus sampling – a procedure in which a small amount of placental tissue is removed in order to test for chromosomal abnormalities

CQC – Care Quality Commission, responsible for inspecting healthcare services

Declared cots – planned neonatal cot capacity if fully staffed

DoH – Department of Health

Echocardiography – ultrasound scanning of the heart to assess its function and identify any structural abnormalities

Elective caesarean section – planned caesarean section before labour onset

Emergency caesarean section – unplanned caesarean section (prior to, or during labour)

FMU – freestanding midwife-led unit; a maternity unit where midwives have primary responsibility for care during labour in women at low risk of complications and which is not located on the same site as an obstetric unit

Forceps – an instrument to assist vaginal birth

HDU – high dependency unit (level 2 care); a care unit for people who require more intensive observation and treatment than can be provided on a general ward but who do not need intensive care

HQIP – Healthcare Quality Improvement Partnership

ICU – intensive care unit (level 3 care); a specialist care unit that provides continuous monitoring and treatment for people who are very ill and who need support for more than one organ or advanced respiratory support

Integrated midwifery – midwives who work across antenatal, intrapartum and postnatal care in the community and in hospital. Sometimes combined with core staff for different areas

Interventional radiology – a subspecialist service which uses imaging by X rays, CT or MRI to diagnose and guide minimally invasive treatment of diseases. In obstetric haemorrhage, interventional radiology can be used to block the blood supply to the uterus to stop bleeding

Intrapartum – during labour and birth

IUGR – intra-uterine growth restriction

In-utero transfer – the transfer of a pregnant mother from one unit to another, in order to ensure the right level of care for her baby or babies after birth

LNU – local neonatal unit. LNUs provide all categories of neonatal care for their own catchment population, but they transfer babies who require complex or longer-term intensive care to a NICU. LNUs may receive transfers from other neonatal services in the network.

Maternal-fetal medicine – a subspeciality of obstetrics focused on the care of mothers and babies with additional needs

Maternity network – linked group of maternity care providers working in a coordinated manner to ensure equitable provision of high-quality clinically effective services, unconstrained by existing professional and geographical boundaries

MBRRACE-UK – Mothers and babies: Reducing Risk through Audits and Confidential Enquiries across the UK; the collaboration appointed by the HQIP to run the national Maternal, Newborn and Infant Clinical Outcome Review Programme, conducting surveillance and investigating the causes of maternal deaths, stillbirths and infant deaths

Morbidly adherent placenta – a pregnancy complication in which the placenta grows deeply into the wall of the uterus and is unable to detach normally after childbirth. The condition can lead to severe bleeding

MSLC – Maternity Services Liaison Committee

MSW – maternity support worker

MDT – multidisciplinary (multiprofessional) team

NAO – National Audit Office

NCT – National Childbirth Trust

Neonatal network – linked group of neonatal care providers working in a coordinated manner to ensure equitable provision of high-quality clinically effective services, unconstrained by existing professional and geographical boundaries

NHSE – NHS England

NHS board/health board – in Scotland and Wales, NHS services are provided by 14 NHS boards and 7 health boards respectively, which each include a number of hospitals and community services

NHS trust – in England, NHS services are provided by NHS trusts (commissioned by clinical commissioning groups)

NICE – National Institute for Health and Care Excellence

NICU – neonatal intensive care unit. NICUs provide the whole range of medical neonatal care for their local population, along with additional care for babies and their families referred from the neonatal network. NICUs may be co-located with neonatal surgery services and other specialised services

NMPA – National Maternity and Perinatal Audit

NNU – neonatal unit

Normal birth – in the context of the organisational survey this is defined as spontaneous (unassisted) vaginal birth, regardless of how labour started

NPEU – National Perinatal Epidemiology Unit

OAA – Obstetric Anaesthetists' Association

Obstetric haemorrhage – heavy bleeding from the genital tract before, during, or after birth

OU – obstetric unit; a maternity unit where care is provided by a team of midwives and doctors to women at low and at higher risk of complications. All women will be cared for by midwives during

pregnancy, birth and after the birth. Midwives have primary responsibility for providing care during and after labour to women at low risk of complications, while obstetricians have primary responsibility for women who are at increased risk of, or who develop complications. Diagnostic and medical treatment services - including obstetric, neonatal and anaesthetic care - are available on site

Perinatal – related to events around the time of birth; may be used in general or in relation to pregnant women and new mothers, as in perinatal mental health, or to unborn and newborn babies, as in perinatal mortality and in the National Maternity and Perinatal Audit

Postnatal – after the birth

RCM – Royal College of Midwives

RCoA – Royal College of Anaesthetists

RCOG – Royal College of Obstetricians and Gynaecologists

RCPCH – Royal College of Paediatrics and Child Health

SCBU – special care baby unit. SCBUs provide special care for their own local population and may also provide some high dependency services. In addition, SCBUs provide a stabilisation facility for babies who need to be transferred to a NICU or LNU for intensive or high dependency care, and they also receive transfers from other units for continuing special care

Sustainability and Transformation Plan (STP) – joint proposals by NHS organisations and local councils in 44 areas covering all of England to make improvements to health and care built around the needs of the local population

Therapeutic hypothermia – lowering of body temperature in order to preserve brain function

Transitional care – care of babies who need more support than can be provided by the mother and normal midwifery care alone, but with mother and baby remaining together and the mother remaining the primary carer, usually on a postnatal ward or dedicated transitional care ward

Twin to twin transfusion syndrome – a rare, serious complication of identical twin (or higher multiple) pregnancies that share a placenta. Abnormal blood vessels develop which cause unequal distribution of blood supply between the twins

Ventouse – an instrument to assist vaginal birth using a vacuum cup applied to the baby's head

Introduction

The National Maternity and Perinatal Audit

The National Maternity and Perinatal Audit (NMPA) is a national audit of the NHS maternity services across England, Scotland and Wales.[4] It was commissioned in July 2016 by the Healthcare Quality Improvement Partnership (HQIP)[5] as one of the National Clinical Audit and Patient Outcomes Programmes on behalf of NHS England, the Welsh Government and the Health Department of the Scottish Government.

The NMPA is led by the Royal College of Obstetricians and Gynaecologists (RCOG) in partnership with the Royal College of Midwives (RCM), the Royal College of Paediatrics and Child Health (RCPCH) and the London School of Hygiene and Tropical Medicine (LSHTM).

The overarching aim of the NMPA is to produce high-quality information about NHS maternity and neonatal services which can be used by providers, commissioners and users of the services to benchmark against national standards and recommendations where these exist, and to identify good practice and areas for improvement in the care of women and babies. The NMPA consists of three separate but related elements:

- an organisational survey of maternity and neonatal care in England, Scotland and Wales providing an up-to-date overview of care provision, and services and options available to women
- a continuous prospective clinical audit of a number of key measures to identify unexpected variation between service providers or regions
- a programme of periodic audits on specific topics ('sprint audits')

Some NMPA themes overlap with those of other national programmes, such as the National Neonatal Audit Programme and MBRRACE-UK (Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK). Where this is the case, discussion takes place to avoid duplication and to explore collaboration to enhance the value of each programme.

The organisational survey

In order to aid the interpretation of clinical data and the variation in the processes and outcomes of maternity and neonatal care, it is vital to understand the different contexts in which care is delivered. The aim of this report is to provide an overview of the organisation and provision of care by NHS maternity and neonatal services across England, Scotland and Wales, covering midwife-led and obstetric units, community midwifery and neonatal care.

---

[4] Due to data legislation it was not possible to include Northern Ireland

[5] HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. Its aim is to promote quality improvement, and in particular to increase the impact that clinical audit has on healthcare quality in England and Wales. HQIP holds the contract to manage and develop the National Clinical Audit and Patient Outcomes Programme, comprising more than 30 clinical audits that cover care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual audits, also funded by the Health Department of the Scottish Government, DHSSPS Northern Ireland and the Channel Islands (www.hqip.org.uk).

The information presented in this report and on the NMPA website

- provides context to the NMPA continuous audit and sprint audits, and enables identification of organisational factors which may contribute to variation between service providers
- forms an up-to-date and comprehensive central resource providing an overview of maternity and neonatal services nationally, as well as detailing the services provided by individual sites and trusts/boards (www.maternityaudit.org.uk)
- where possible, indicates if the maternity services offer selected organisational aspects of care for women experiencing straightforward and complex pregnancies as recommended in national guidance, standards or policy, and identifies barriers to the implementation of these

Standards produced by organisations such as the National Institute for Health and Care Excellence (NICE), the British Association of Perinatal Medicine (BAPM), the RCOG and the RCM include many organisational aspects of care, and the recent national maternity review in England and national maternity and neonatal review in Scotland gave rise to a number of organisational recommendations. However, there are relatively few organisational standards and recommendations which are strictly defined and suitable for measurement by survey at a national level. For example, referral pathways are best audited at a local level where implementation can be verified, and information provision is best evaluated by surveying women and their families to assess effectiveness. Where suitable standards or recommendations exist,[6] we have reported on adherence; in their absence, we describe the survey responses received, and highlight opportunities for improvement and potential development of national standards.

This report presents aggregated results; results by organisation (and where appropriate by region, site or unit) are available on the NMPA website and will allow services to benchmark themselves against other services or national or regional averages.

Background

Pregnancy and birth are among the most common reasons for contact with the NHS and for hospital admission.[5] Maternity care serves women who are generally well and may have had little previous contact with the health service. As a result, maternity services are uniquely placed to support and empower parents of all backgrounds to maximise their own health as well as their child's health and development during pregnancy, birth and beyond.

Increasingly however, women accessing NHS maternity services are older and have more complex social, physical and mental health needs that may affect their pregnancy. This trend, coupled with a 16% increase in the birth rate since 2001 across England, Scotland and Wales,[6, 7] has led to increasing demands on the service.

Pregnant women receive care from a range of different healthcare professionals. All women are cared for by midwives, who act as the coordinating professional for most pregnant women and as lead professional for those at low risk of complications. For women at higher risk or undergoing medical procedures, care is also provided by doctors, led by consultant obstetricians. Care of healthy babies is provided by midwives, while neonatal doctors and nurses provide care to babies who are born too early or who have clinical conditions or concerns.

[6] See appendix 1 for national organisational standards and recommendations

The majority of women giving birth in the UK receive a safe and effective service. However, although the stillbirth rate is falling, it is considerably higher in the UK than in many other European countries.[8] There is also evidence of substantial variation in maternity care and outcomes among maternity services as well as between women from different socio-economic and ethnic backgrounds.[9, 10]

Maternity policy in recent years has focussed on the key themes of improving the safety, effectiveness and experience of maternity care, reducing unnecessary intervention, and reducing inequalities.[1, 2, 3, 4] The NMPA aims to provide robust information that will allow clinicians, NHS managers and policy makers to examine the extent to which current practice meets guidelines and standards, and to compare service provision and maternal and neonatal outcomes among providers.

In this report, we will present a snapshot of maternity and neonatal care as it is organised at the start of 2017, based on information submitted by every NHS trust and board in England, Scotland and Wales. It describes where maternity and neonatal care is provided, what care is provided and by whom. The results reveal the extent to which some of the key themes of recent and longstanding national policies have or have not been implemented. These include: promoting choice in where women have their baby, encouraging better integration of specialist services and care pathways, ensuring the appropriate levels of staffing and skill-mix, and providing continuity of carer. With a second NMPA organisational survey due in 2019, this report serves as a baseline at the start of what will likely be a period of considerable change in the maternity and neonatal services.

Methods

The NMPA organisational survey was developed by the project team with reference to national standards, guidance, recommendations and government policy regarding organisational aspects of maternity and neonatal care.[7] The NMPA Audit Partners and Clinical Reference Group provided additional advice.

The survey was divided into sections to be completed by those deemed locally to be best placed to do so – for example midwifery, obstetric or neonatal leads. Using Snap survey software, respondents could access all survey sections from one overview page tailored to their organisation. The log in details were sent to the Heads of Midwifery who were asked to coordinate completion of the survey. Links to additional resources on the NMPA website were included and respondents had access to assistance by telephone and email.

The survey was piloted with 5 English trusts, 2 Scottish NHS boards and 2 Welsh health boards,[8] selected for their different organisational structure and size; adjustments were made based on the pilot results and feedback.

All NHS trusts and boards providing intrapartum care on site across England, Scotland and Wales were eligible to take part; they were identified from current RCOG project databases and the NMPA maternity information systems survey conducted in autumn 2016. The NMPA organisational survey was conducted from late January to March 2017 and 100% of the 155 eligible trusts and boards submitted a completed survey (134 English trusts, 14 Scottish and 7 Welsh boards).

Responses were checked and analysed using Stata/IC 14 and MS Excel, and maps were produced in ArcGIS Pro 1.4.0. The reported figures are those provided by the respondents. The report also draws on workforce data provided by NHS Digital, the Information Services Division Scotland (ISD Scotland), and the Knowledge and Analytical Services of the Welsh Government.

Data were analysed as appropriate at one or more of the following levels (table 1):

- whole trusts (England) or health boards (Scotland and Wales), for example configuration changes
- individual sites within each trust or board (including sites with a co-located obstetric unit and alongside midwife-led unit), for example the availability of obstetric theatres on site
- individual units, for example the number of birth rooms in each obstetric unit, alongside midwife-led unit and freestanding midwife-led unit

Where annual number of births per site (site size) may be relevant, results were stratified by this. Site size categories were broadly based on the quartiles of the annual number of births (women delivered) per site for sites with an obstetric unit, with freestanding midwife-led units as an additional category.

This report presents aggregated results; individual trust/board results and results by region are available on the NMPA website, as is the survey questionnaire (www.maternityaudit.org.uk).

---

[7] See appendix 1 for national organisational standards and recommendations

[8] Different NHS structures operate in each of the three countries; in England, maternity care is delivered by NHS trusts, whereas NHS health boards perform this function for geographical regions in Scotland and Wales

For further detail on methods please see appendix 5.

	TOTAL	ENGLAND	SCOTLAND	WALES
 TRUST/BOARD	**155**	**134** trusts	**14** boards	**7** boards
 SITE	**281** **61** OU only **124** OU+AMU **96** FMU only	**51** OU only **106** OU+AMU **63** FMU only	**10** OU only **6** OU+AMU **19** FMU only	**0** OU only **12** OU+AMU **14** FMU only
 MATERNITY UNIT	**405** **185** OUs **124** AMUs **96** FMUs	**157** OUs **106** AMUs **63** FMUs	**16** OUs **6** AMUs **19** FMUs	**12** OUs **12** AMUs **14** FMUs
or				
 NEONATAL UNIT	**184** **57** NICUs **82** LNUs **45** SCBUs	**46** NICUs **74** LNUs **37** SCBUs	**8** NICUs **5** LNUs **2** SCBUs	**3** NICUs **3** LNUs **6** SCBUs

OU – obstetric unit
AMU – alongside midwife-led unit (co-located with obstetric unit on same site)
FMU – freestanding midwife-led unit

NICU – neonatal intensive care unit
LNU – local neonatal unit
SCBU – special care baby unit

Findings

1. Maternity and neonatal care settings

Key messages

Maternity and neonatal service configuration is subject to constant change.

More than a third of NHS trusts and boards report configuration changes in the past 3 years and half report planned or anticipated changes in the next 3 years. These proportions are similar across England, Scotland and Wales. Likewise, half of all trusts and boards report that their neonatal service configuration is under review or that changes are planned.

There has been a steady increase in the number of alongside midwife-led units, which quadrupled during the last decade to 124.

Two thirds of British obstetric units are now co-located with an alongside midwife-led unit (68% in England, 38% in Scotland and 100% in Wales). In England, the number of obstetric units has decreased by 13% since 2007 to 157 and although individual freestanding midwife-led units opened and closed, the overall number increased by 13% during this period to 63.

22% of trusts and boards offer the full range of birth settings (home, freestanding midwife-led unit, alongside midwife-led unit and obstetric unit).

In some areas, geographical factors may impact on the feasibility of providing all four settings. 77% of trusts and boards offer homebirth, at least one of the midwife-led unit types, and obstetric units. However, 19% do not have any midwife-led units and 3% do not have any obstetric units. Trusts and boards, and their commissioners where applicable, should collaborate across geographical areas to ensure all women have access to all four birth settings.

Maternity care usually begins and ends in the community; most women will see a midwife at a local clinic or at home throughout pregnancy and after the birth. They may attend a maternity unit clinic for ultrasound scans, or if they have an existing medical condition or a potential problem develops. The vast majority of births take place in a maternity unit.

Midwives are responsible for healthy newborns until the care of mother and baby is transferred to the health visitor, but babies who need more specialist care, for example due to being born preterm, will be cared for by neonatal services. Neonatal care provision is closely linked with maternity care and configuration changes often affect both services.

Recent years have seen a shift in the available range of maternity care settings and this chapter will outline maternity unit types, trends over time and bed numbers, as well as neonatal unit types and cot capacity.

Maternity services

Most NHS trusts and boards operate several different types of maternity units. For consistency with current research and national guidance, the unit type definitions used in the NMPA organisational survey and report are based on those in the Birthplace in England Research Programme.[11]

- **obstetric unit (OU):** in obstetric units, maternity care is provided by a team of midwives and doctors; there is antenatal care provision for women with certain medical conditions or who develop complications during pregnancy, in the form of obstetrician-led clinics and inpatient facilities. Obstetric units provide care to women at low and at higher risk of complications and all women are cared for by midwives during pregnancy, birth and after the birth. Midwives have primary responsibility for providing care during and after labour to women at low risk of complications, while obstetricians have primary responsibility for women who are at increased risk of, or who develop complications. Diagnostic and medical treatment services (including obstetric, neonatal and anaesthetic care) are available on site.
- **midwife-led unit:** in midwife-led units**,** midwives have primary responsibility for care during labour in women at low risk of complications. Midwife-led units can be freestanding or located alongside an obstetric unit:
  - **alongside midwife-led unit (AMU):** a midwife-led unit located on the same site (though not necessarily in the same building) as an obstetric unit and which therefore has access to the same medical facilities if needed. Women will normally be transferred to the obstetric unit if they develop complications or wish to have an epidural.
  - **freestanding midwife-led unit (FMU):** a midwife-led unit which is not located on the same site as an obstetric unit (some freestanding midwife-led units are located within a hospital without an obstetric unit). If obstetric, anaesthetic or neonatal care is needed, women will be transferred to an obstetric unit by ambulance.

Not all maternity units fit these definitions exactly; for example some Scottish community maternity units and a few other freestanding midwife-led units in England and Wales, often in relatively remote areas, have some medical staff involved in maternity care.

As well as the option to give birth in one of the above unit types, women can choose to give birth at home.

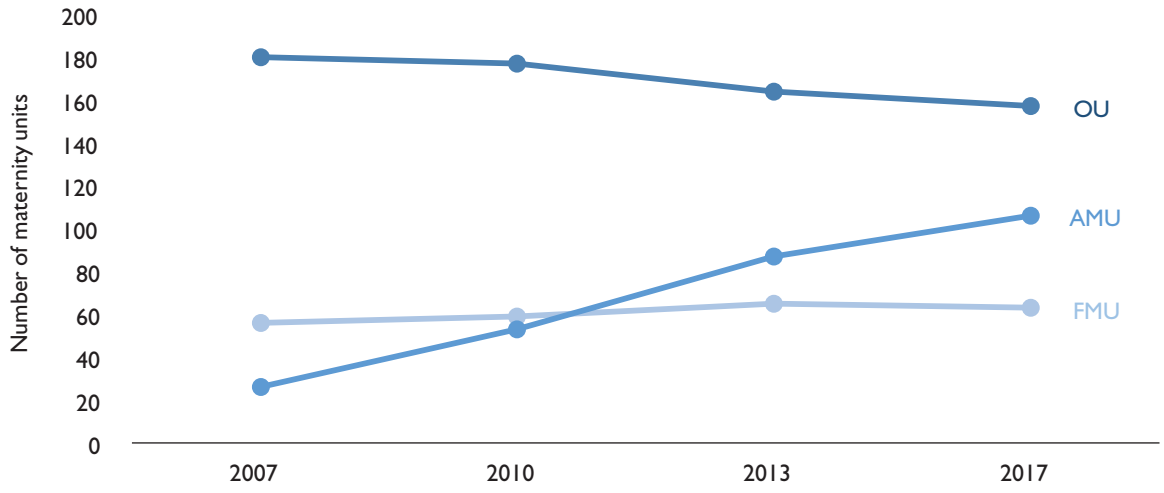
Number of maternity units

At the time of the survey (January to March 2017), there were 185 obstetric units, 124 alongside midwife-led units and 96 freestanding midwife-led units across England, Scotland and Wales (table 1). Two trusts which did not provide intrapartum care on a trust site were not included; nor were independent midwifery practices contracted by the NHS, a care model which is starting to emerge but is not widely established at this point in time.

All 12 Welsh obstetric units were co-located with an alongside midwife-led unit, as were 68% in England and 38% in Scotland. Exact unit numbers are in constant flux as units open and close, or

change from one type to another. However, a distinct trend is the steady increase in the number and proportion of alongside midwife-led units during the last decade.

In England, for which historical data were available from previous organisational surveys, the number of alongside midwife-led units quadrupled between 2007 and 2017, from 26 to 106. The number of obstetric units decreased by 13% and although individual freestanding midwife-led units opened and closed and their proportion remained static, the overall number increased by 13% during this period (figure 1).[12, 13]



Data sources 2007, 2010 NPEU/Healthcare Commission; 2013 NAO (no comparable historic data available for Scotland and Wales)

Figure 1: Maternity unit types trend 2007–2017 (England)

This trend is reflected in the NMPA organisational survey, with 15% of trusts and boards reporting the opening of an alongside midwife-led unit in the past 3 years and 10% planning or anticipating to open one in the next 3 years, as opposed to 1% reporting having closed or planning to close one. If planned openings and closures go ahead, the overall net change between 2013 and 2020 would be an increase of 36 alongside midwife-led units and 3 freestanding midwife-led units, and a decrease of 5 obstetric units (figure 2).

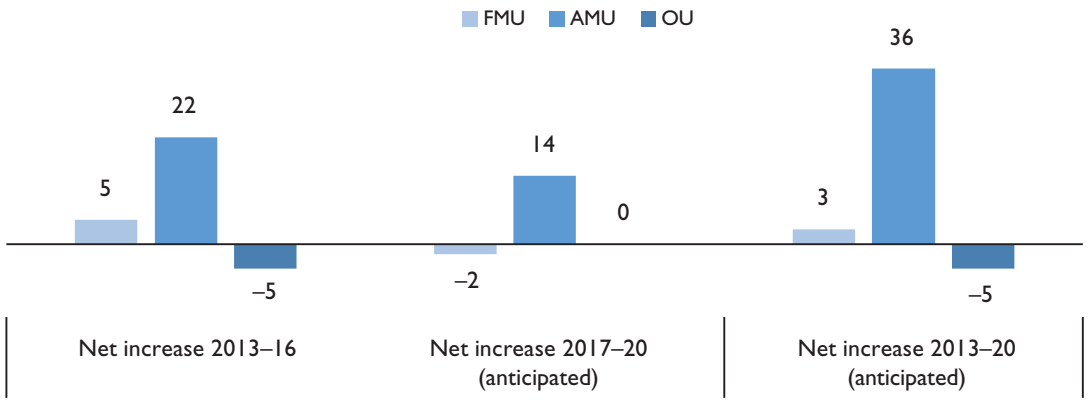


Figure 2: Maternity unit types net increase 2013–2020 if planned openings and closures go ahead

The number of English trusts providing on-site intrapartum maternity care has decreased from 152 in 2007 to 134 in 2017, while the number of individual units has increased from 262 to 326, largely accounted for by the increased number of sites with co-located obstetric and midwife-led units. Half of all trusts and boards reported planned or anticipated configuration changes in the next 3 years, including 8 potential mergers.

The majority of English trusts had only one site at which they provided intrapartum care (61%), with a further 24% having two. In Scotland this was 43% and 29% respectively, and in Wales 14% each. The range of the number of sites per trust or board was 1 to 5 in England, 1 to 9 in Scotland and 1 to 7 in Wales. 43% of Welsh boards had 4 sites or more, as did 21% of Scottish boards and 5% of English trusts.

Availability of different birth settings

Following the findings of the Birthplace in England study,[14] the National Institute of Health and Care Excellence (NICE) recommends that pregnant women at low risk of complications should be encouraged to plan birth in a midwife-led setting (at home or in a midwife-led unit) and that women with certain health conditions or pregnancy complications give birth in an obstetric unit.[15] This is echoed by Better Births, the report on the English maternity review, and The Best Start, the Scottish maternity review report.[1, 2]

22% of trusts and boards across England, Scotland and Wales now offer homebirth, freestanding and alongside midwife-led units and obstetric units as recommended by NICE (figure 3),[15] and 77% offer homebirth, at least one type of midwife-led unit and obstetric units. All maternity services offer homebirth, with the exception of one service due to geographic challenges. 19% of trusts and boards do not have any midwife-led units although some women may have access to midwife-led units at neighbouring trusts or boards. 3% did not have any obstetric units, and these reported referring women to obstetric units in neighbouring organisations when needed.

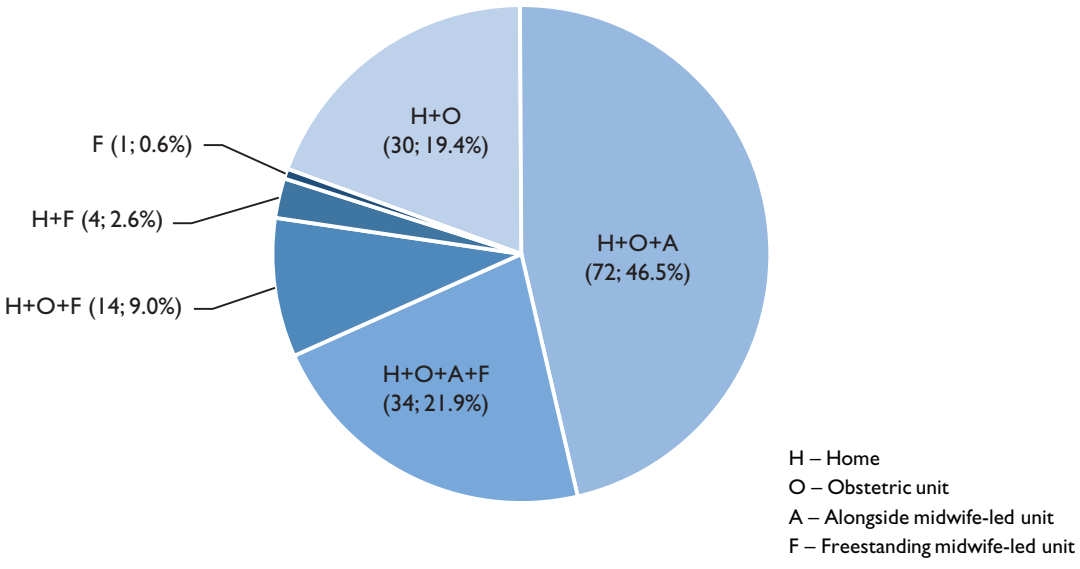
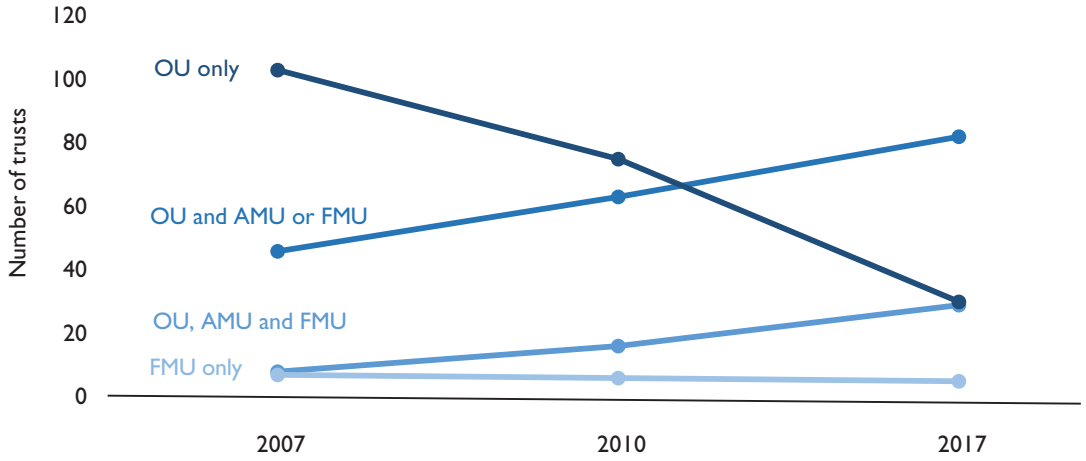


Figure 3: Birth settings available per trust/board in England, Scotland and Wales

In England, for which comparative data were available, the proportion of trusts offering all four birth settings increased from 3% in 2007 to 19% in 2017 while the proportion with only one or more obstetric units declined from 66% to 20% (figure 4).[13]



Data sources 2007, 2010 NPEU/Healthcare Commission (no comparable historic data available for 2013, or for Scotland and Wales)

Figure 4: Trends in unit types available per trust in England 2007–2017

While more than half of maternity units are now midwife-led, in England only around 14% of births take place in midwife-led units, although this has increased in recent years.[16] We will be reporting on the numbers of women giving birth in different settings later this year.

Figure 5 shows a map of the unit types available at each of the NHS sites where intrapartum maternity care was provided at the time of the survey (FMU, OU, or co-located OU and AMU). The marker size indicates the annual number of births on site. Sites with a co-located obstetric unit and alongside midwife-led unit were particularly common in densely populated areas and large conurbations, while freestanding midwife-led units were often located in rural and remote areas.

Birth rooms and antenatal and postnatal bed capacity

Obstetric units had a median of 10 dedicated birth rooms, alongside midwife-led units a median of 4 and freestanding midwife-led units a median of 2 (table 2).

62% of sites with an obstetric unit had a combined antenatal and postnatal ward, 37% had separate antenatal and postnatal wards and some had both combined and dedicated antenatal or postnatal wards. By their nature, freestanding midwife-led units tend not to have any antenatal beds and to discharge women home directly from the birth room a few hours after the birth. Most freestanding midwife-led units had no or few postnatal beds but some had a relatively large number.

The median annual number of births per dedicated birth room was 300 on sites with an obstetric unit, and 50 in freestanding midwife-led units. The range was wide, regardless of unit type(s) on site. The sites with the lowest numbers of births per birth room were remote freestanding midwife-led units, including one without any births during 2015/16.

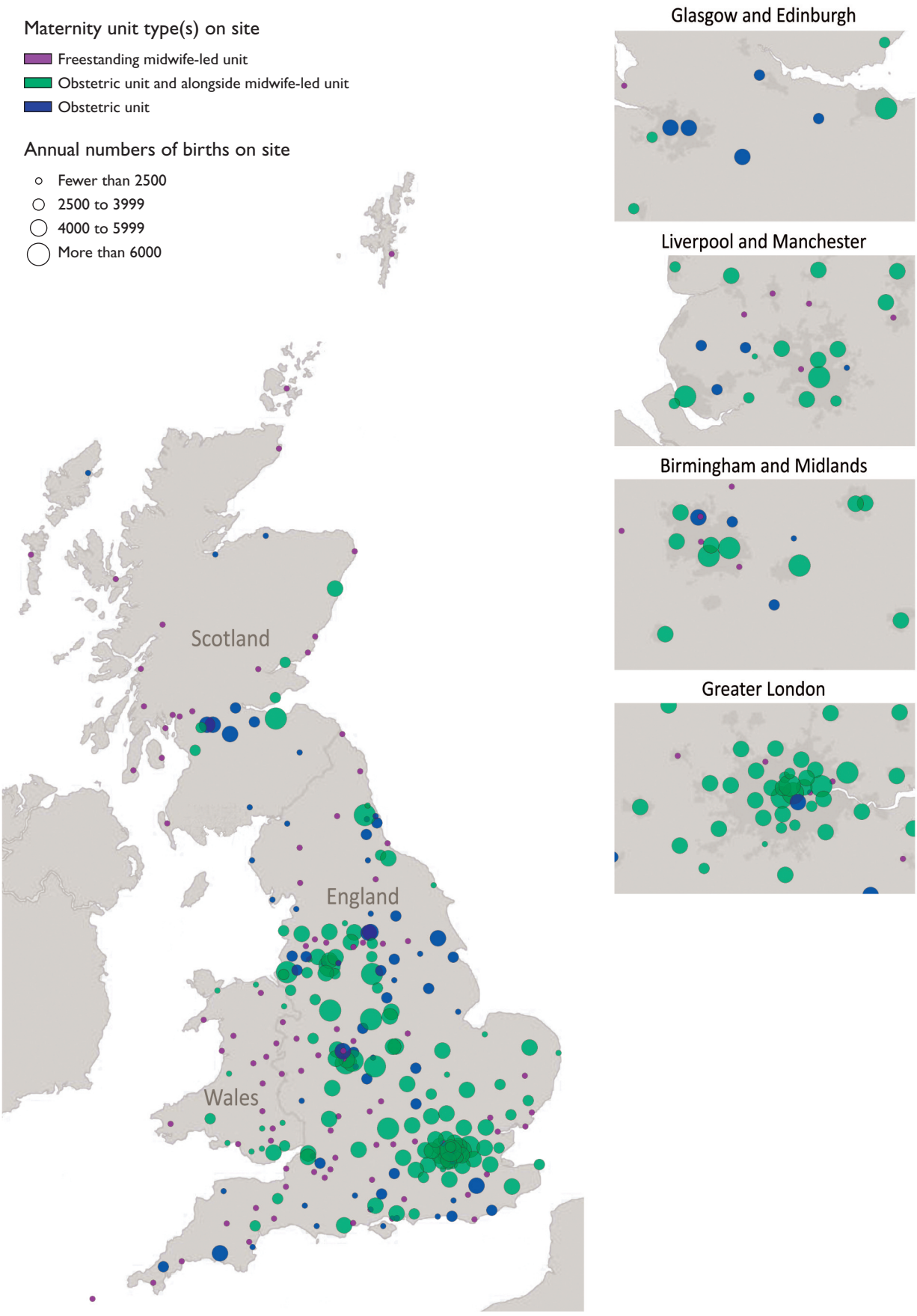


Figure 5: Maternity unit type(s) per site map

Table 2: Numbers of dedicated birth rooms and antenatal and postnatal beds

	median	range	interquartile range
Number of dedicated birth rooms per unit			
Obstetric unit labour wards	10	2 to 21	8 to 12
Alongside midwife-led units	4	2 to 12	3 to 6
Freestanding midwife-led units	2	1 to 7	1 to 3
Total antenatal and postnatal beds per site			
Sites with an obstetric unit (with or without alongside midwife-led unit)	37	8 to 86	26 to 47
Freestanding midwife-led units	0	0 to 13	0 to 3
Approximate annual number of births per dedicated birth room			
Sites with an obstetric unit (with or without alongside midwife-led unit, n=185)	300	92 to 524	248 to 342
Freestanding midwife-led units (n=86)*	50	0[$] to 218	20 to 86

*Numbers of births on site were not available for 10 freestanding midwife-led units

[$] One remote FMU had no births during 2015/16

Neonatal services

Neonatal services provide, alongside maternity staff, oversight of care for all babies and specialist care for babies who are at risk of, or have developed complications. This includes babies born too early, babies with congenital abnormalities and babies who experienced complications during birth. Not all specialist neonatal care requires admission to a neonatal unit; many babies needing treatment or observation can receive this without being separated from their mothers. Although many neonatal services provide outreach care in the community after babies go home, the focus in this report is on care in hospital.

Neonatal care is categorised as special, high dependency or intensive care, depending on the level of support babies require. Transitional care is a fourth care category, for babies who need some extra support but who can remain with their mothers either on the postnatal ward or on a dedicated transitional care ward (see chapter 2). Detailed definitions of care categories are available from the British Association of Perinatal Medicine (BAPM).[17]

Neonatal units are designated nationally as special care baby units (SCBU), local neonatal units (LNU) and neonatal intensive care units (NICU). The Department of Health Toolkit for High Quality Neonatal Services defines these as follows[18]:

- **special care baby units** provide special care for their own local population. Depending on arrangements within their neonatal network, they may also provide some high dependency services. In addition, SCBUs provide a stabilisation facility for babies who need to be transferred to a NICU for intensive or high dependency care, and they also receive transfers from other network units for continuing special care.
- **local neonatal units** provide neonatal care for their own catchment population, except for the sickest babies. They provide all categories of neonatal care, but they transfer babies who require complex or longer-term intensive care to a NICU, as they are not staffed to provide longer-term intensive care. The majority of babies over 27 weeks of gestation will usually receive their full care,

including short periods of intensive care, within their LNU. Some networks have agreed variations on this policy, due to local requirements. Some LNUs provide high dependency care and short periods of intensive care for their network population. LNUs may receive transfers from other neonatal services in the network, if these fall within their agreed work pattern.

- **neonatal intensive care units** are sited alongside specialist obstetric and feto-maternal medicine services, and provide the whole range of medical neonatal care for their local population, along with additional care for babies and their families referred from the neonatal network. Many NICUs in England are co-located with neonatal surgery services and other specialised services. Medical staff in a NICU should have no clinical responsibilities outside the neonatal and maternity services.

Neonatal units are organised into regional neonatal networks with designated transport services to transfer babies between units when necessary. Of great importance is the ability to transfer the mother to the appropriate unit before the birth in order to avoid postnatal transfer of a vulnerable baby.

Number of neonatal units and cot capacity

At the time of the survey there were 184 neonatal units across England, Scotland and Wales; 157 in England, 15 in Scotland and 12 in Wales (table 1). All sites with an obstetric unit had a neonatal unit on site, except one small and remote unit which provided obstetric intrapartum care and could provide some special neonatal care on the maternity ward but did not have a neonatal unit.

NICUs tended to be co-located with larger obstetric units (figure 6) and trusts and boards with higher annual numbers of births tended to have a higher maximum neonatal unit designation within their service than those with smaller numbers of births (table 3). It has to be borne in mind that some trusts or boards with high overall annual birth numbers consist of several relatively small units. As with obstetric services, large NICUs and LNUs were concentrated in densely populated areas, some in very close proximity to each other (figure 7).

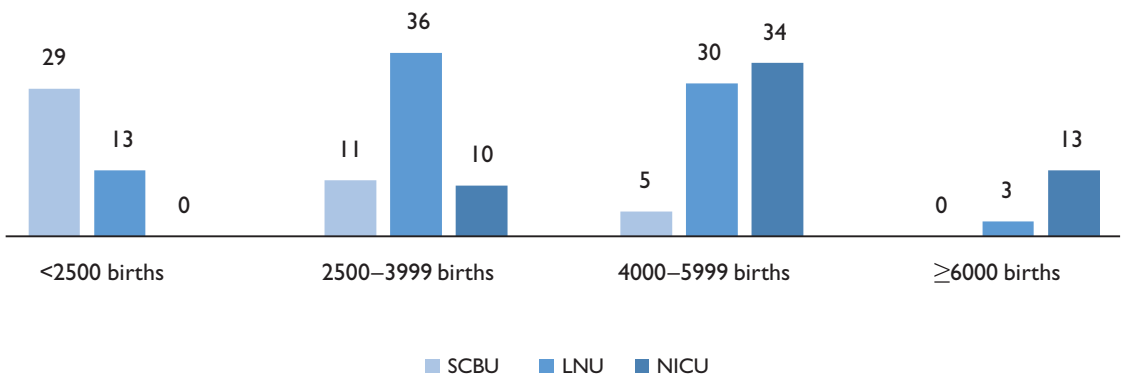


Figure 6: Neonatal unit designation and number of births on site

Table 3: Maximum neonatal unit (NNU) designation within the trust or board

Trust/board annual number of births (i.e. of all trust/board sites combined)	No NNU	SCBU	LNU	NICU	Total
<2500	6	13	9	0	28
2500-3999	0	8	21	6	35
4000-5999	0	3	32	23	58
≥6000	0	0	8	26	34
Total	6	24	70	55	155

The range of planned cot capacity when fully staffed ('declared cots') was wide, although cot numbers tended to be related to the number of births on site and to neonatal unit designation (table 4).

Like the maternity services, the configuration of neonatal services is subject to constant change. 15% of neonatal units reported plans to expand capacity, in particular for high dependency and intensive care, and a further 13% were involved in review of provision, for example as part of Sustainability and Transformation Plans or neonatal network reviews.

Table 4: Cots available for different care levels, by neonatal unit designation

	SCBU		LNU		NICU	
Declared cots*	median	range	median	range	median	range
Special care	10	2 to 21	12	3 to 23	14	4 to 31
High dependency care (HDC)	1	0 to 4	3	0 to 19	7	0 to 19
Intensive care (IC)	0	0 to 4	2	0 to 13	8	2 to 19
HDC and IC combined[$]	2	0 to 8	6	2 to 23	16	4 to 38

* Planned cot capacity if fully staffed

[$] Some units use HDC and IC cots flexibly and do not differentiate when declaring cots

Strategy and engagement

The initiatives following on from the recent national maternity review in England and national maternity and neonatal review in Scotland have raised the profile of maternity and neonatal care with policy makers and the public.[1, 2, 4] To make the most of the momentum created and to successfully navigate organisational change, maternity services need strategic leadership, to collaborate with other organisations and to engage with the women who use the services and their families.

Around three quarters of trusts and boards reported having published or being in the process of developing a maternity strategy, either independently or jointly with other organisations. A similar proportion reported having a designated maternity champion on the board of the organisation as recommended by Better Births.[1] Although consultant midwives are well placed to provide strategic leadership and recommended in Safer Childbirth,[19] only 43% of trusts and boards employed one or more consultant midwives. Nearly 90% reported having a maternity service specification agreed with their commissioners or across their board.

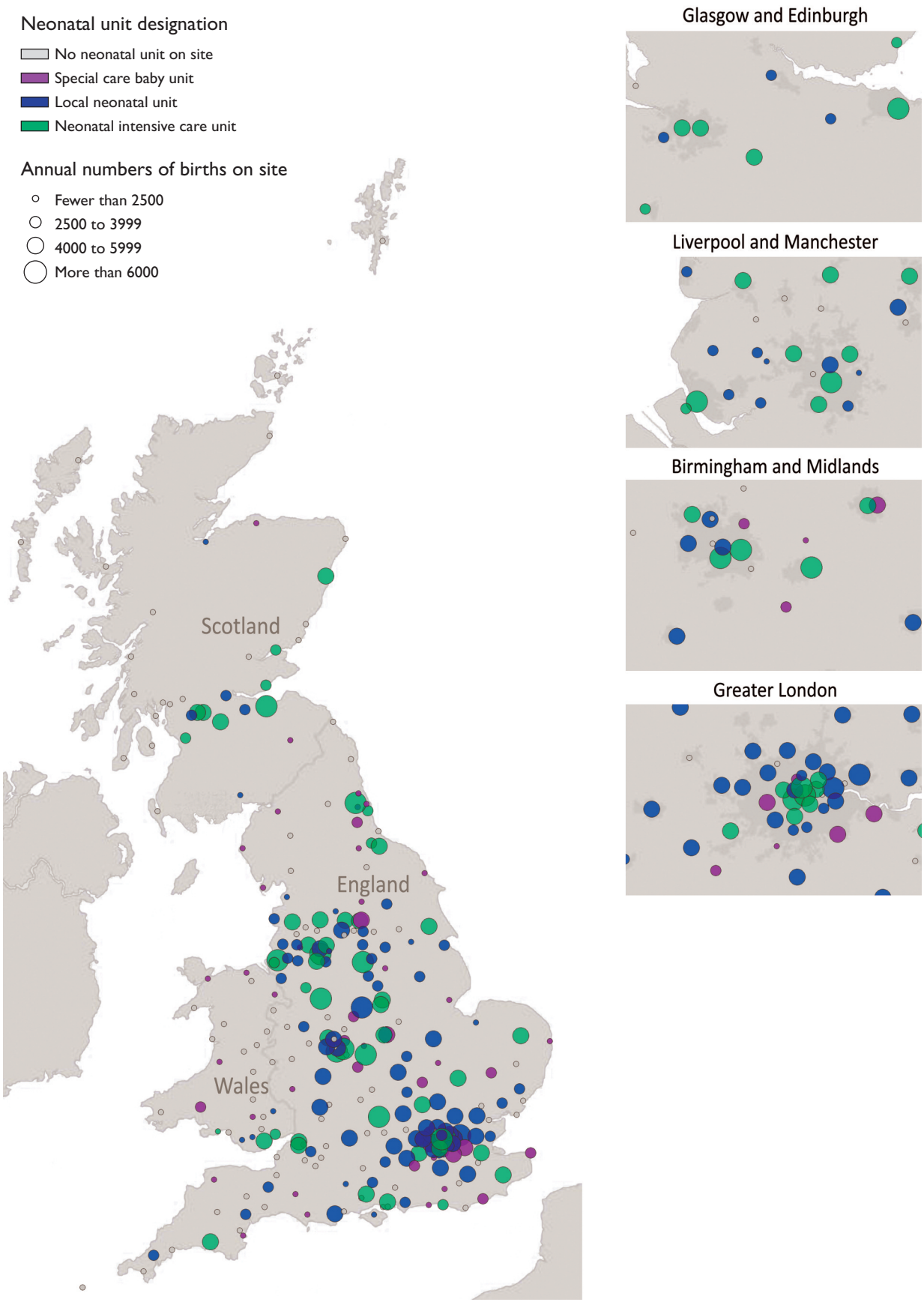


Figure 7: Neonatal units map (all neonatal units are on sites with obstetric units)

In line with the recommendations of Better Births, the RCM standards for midwifery services in the UK and the RCOG framework for maternity service standards,[1, 20, 21] more than 80% of trusts and boards were involved in a Maternity Services Liaison Committee (MSLC), either run by themselves or in collaboration with neighbouring organisations, a similar proportion as a decade ago.[22] Overall, 99% of maternity services reported they involved women and their families in one or more ways in shaping and improving the services across the different care settings (figure 8).

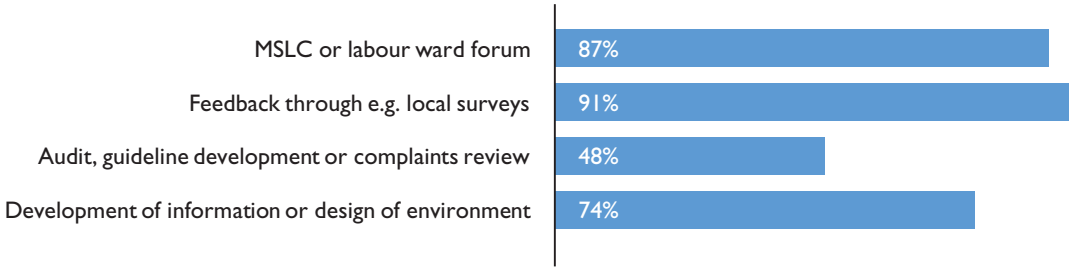


Figure 8: In what ways are women involved/represented in the maternity services?

2. Availability of services and facilities

Key messages

Maternity and neonatal services are organised in many different ways and 'typical' maternity units do not appear to exist.

This may reflect services responding to local needs. Service planning would be supported by the development of a categorisation system for maternity units based on service provision, unit size and the characteristics of the women who use the service, along similar lines as that for neonatal services.

85% of trusts and boards are involved in a maternity network and 68% in a perinatal mental health network.

All trusts and boards, and commissioners where applicable, should participate in networks to share best practice, plan services and develop agreed referral routes for women and babies needing specialised care. This will allow consideration of the regional distribution of services across all unit types and referral pathways, and integrated planning of maternity and neonatal services.

97% of trusts and boards use an electronic maternity information system to record the care of women and babies but half report that this was not fully accessible to community midwives. Only a tenth report that women themselves have access to their electronic maternity record.

Hospital clinicians in other specialities do not have access to electronic maternity records in two thirds of trusts and boards. Commissioners (where applicable) and providers, with the support from their governments, need to address electronic information sharing to enable safe and effective care and give women access to their electronic maternity record.

95% of trusts and boards conduct multiprofessional team training for emergency situations involving mothers and babies.

However, only 56% provide multiprofessional training in communication and 17% in facilitating normal birth. This provision should be expanded.

The number of planned community postnatal contacts (home visits or postnatal clinic appointments) for healthy women and babies ranges from 2 to 6 between different maternity services. The median number of contacts is 3.

Scottish and Welsh boards report a higher average number of planned postnatal contacts than English trusts (medians 4.5, 4 and 3 respectively). Services should examine the reasons for the variation in the number of postnatal contacts and national standards should be developed.

Many services are taking measures to put women and their families at the centre of care, but these are not universal.

For example, 99% of trusts and boards report involving women in the development and improvement of the services, and 62% and 71% of maternity unit sites respectively allow birth partners to stay at all times on the ward after the birth and in case of labour induction. However, only 63% of sites have a private bathroom for every birth room, which should be improved to preserve privacy and dignity for women in labour.

Although 95% of neonatal units have at least one bedroom for parents of admitted babies, only 16% of neonatal intensive care units have the number recommended by the Department of Health.

64% of sites with a neonatal unit provide transitional care for babies who need some additional support, either on a postnatal ward or on a dedicated transitional care ward.

To reduce unnecessary admissions to neonatal units and keep mothers and babies together where possible, all sites with a neonatal unit should provide transitional care.

69% of sites with a neonatal unit report they are not able to provide data on the transfer of pregnant women from one maternity unit to another for the purpose of immediate access to the appropriate level of neonatal care after the birth (in utero transfer).

Maternity and neonatal services should collaborate to improve the recording of in-utero transfers.

Maternity services need to cater for women with straightforward pregnancies and for those experiencing complications; they need to do this in an environment which encourages relaxation and bonding, and which preserves women's autonomy and dignity, regardless of where and how they give birth.

In the UK, maternity care for women at low risk of complications is primarily provided by midwives, in the community, at home and in maternity units. However, it is estimated that around 55% of women have, or will develop, risk factors as defined by NICE guidance[23, 15] and may therefore require specialist service input at some point in pregnancy. These services are provided by specialist midwives or obstetricians, together with allied health or medical professionals.

For acutely unwell women or babies, every maternity service needs to be able to facilitate access to specialised care, either within local units with facilities for appropriate multidisciplinary care or through clinical network transfer protocols to regional centres. The 2016 MBRRACE report "Saving Lives, Improving Mothers' Care" recommends the principle of 'one transfer to definitive care'.[24]

This chapter describes the availability of general and specialist maternity and neonatal services and facilities across England, Scotland and Wales, as well as participation in networks, electronic information sharing and multiprofessional training. Full tables of available services and facilities by number of births on site are provided in appendix 4.

General and midwifery care

Antenatal and postnatal community care and assessment in early labour

Providing a choice of locations and times outside normal working hours for antenatal appointments is a longstanding recommendation.[22, 1] 65% of trusts and boards offered women a choice of evenings and/or weekends for their antenatal appointments and 73% offered a choice of location.

94% of trusts and boards offered women assessment in early labour at their planned place of birth, as recommended by NICE,[15] with 13% also offering the option of assessment at home for women at low risk of complications, regardless of planned place of birth.

Community postnatal care for well women and babies was provided exclusively by midwives in 29% of trusts and boards, with 6% reporting that most or all postnatal contacts were conducted by maternity support workers. 48% offered women the choice of having home visit(s) and/or attending a postnatal clinic, with a further 31% having a fixed schedule of home visits and postnatal clinics for routine postnatal care.

Surveys of women consistently report that postnatal care is rated less positively than care during pregnancy and birth,[25, 26, 27, 28] and there are no standards regarding the number of postnatal contacts. Adequate support during the postnatal period is crucial for physical and mental wellbeing, breastfeeding continuation and the early identification of problems. The number of planned postnatal contacts (home visits or postnatal clinic appointments) for healthy women and babies ranged from 2 to 6, with a median of 3. Scottish and Welsh boards reported a higher average number of postnatal contacts than English trusts (medians 4.5, 4 and 3 respectively).[9]

Maternity day assessment units

Maternity day assessment units enable pregnant women to be seen on an outpatient basis for checks and monitoring if possible problems are identified during routine care or by women themselves (such as raised blood pressure or reduced fetal movements). They were available on 98% of sites with an obstetric unit and at 34% of freestanding midwife-led units, and 21% were open 24 hours per day. Women could self-refer to 87% of day assessment units.

Specialist midwives, public health and allied health professionals

Specialist midwives, public health and allied health professionals are vital to the support of women with additional needs. Not all of these are required at every site; local demographic factors, proximity to, and arrangements with other sites and community services may all reasonably affect provision. Freestanding midwife-led units, particularly in remote locations, may function as hubs for antenatal care and specialist support or, conversely, they may refer to an obstetric unit if one is nearby. 70% of freestanding midwife-led units, and all but one obstetric unit, reported the presence of one or more specialist midwife or allied health professional providing a specialist service on site (figure 9).

[9] Per definition, postnatal contacts with the midwifery service would take place within 28 days after the birth, although for healthy women and babies they would usually take place during the first 10 to 14 days.

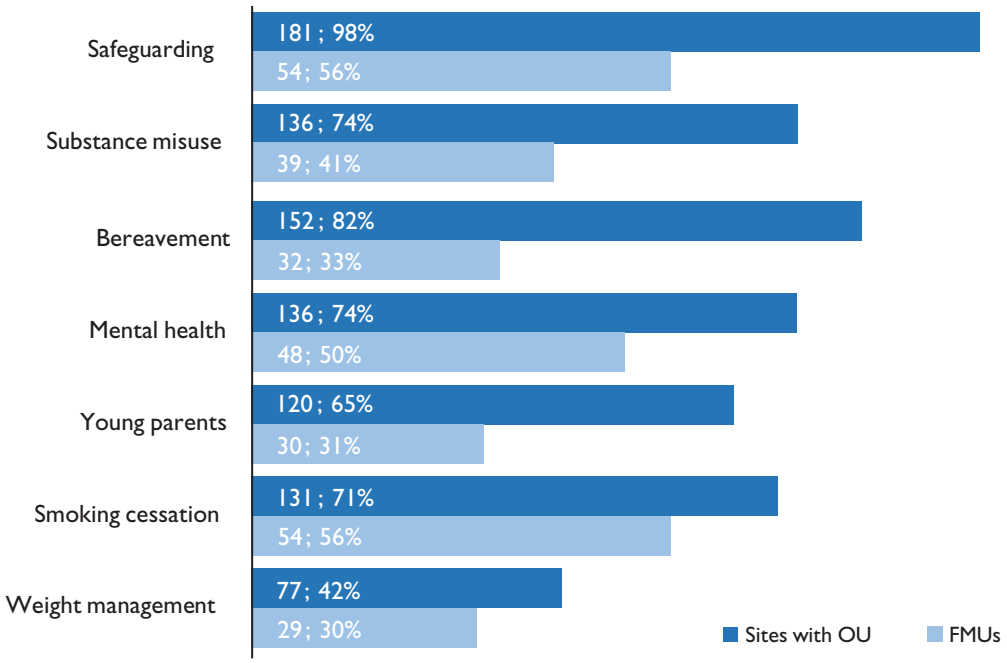


Figure 9: Availability of specialist support on sites with, and without an OU

General and specialist obstetric and medical care

Pregnant women increasingly have more complex health needs, which include, but are not limited to, increasing maternal age, overweight and obesity, and assisted conception.[29, 30, 31, 32] As a result, more women require specialist services during pregnancy. Figures 13 and 14 show the overall availability of services and facilities. Full tables of available services and facilities by number of births on site are provided in appendix 4.

Maternal-fetal medicine

117 obstetric units (63%) reported the availability of a subspecialist maternal-fetal medicine consultant, with larger units more likely to report this.

It was apparent that highly specialist services were centralised, allowing for appropriate caseloads to maintain specialists' proficiency. While 71% of units offered amniocentesis, only 30% offered chorionic villus sampling, a more challenging method of obtaining fetal DNA. For very rare conditions, there was evidence of super-specialisation, with only ten units offering laser therapy for twin to twin transfusion syndrome.

Three quarters of obstetric units overall and all but one of the very large units (6000 births per year or more) offered advanced fetal growth assessment, including management of severe intra-uterine growth restriction (IUGR). One third of units and 81% of very large units provided fetal echocardiography. Local arrangements may be in place for referral to a regional centre for fetal assessment in cases of complex fetal growth and development anomalies.

Maternal medicine

97% of all obstetric units reported the provision of a multidisciplinary clinic for women with diabetes, attended by both obstetricians and physicians. However only 45% reported having a multidisciplinary clinic for women with other medical conditions. Larger units were more likely to offer this service, but there was no size threshold beyond which it was always offered.

Specialist services and facilities for women with cardiac disease

The 2016 MBRRACE report "Saving Lives, Improving Mothers' Care" highlighted cardiac disease as a leading cause of maternal death, with 2 deaths per 100,000 births. A particular challenge identified was the frequent lack of co-location of obstetric and cardiac services. Having the two services on different sites impeded joint working and care.[24]

For acutely ill women, lack of access to cardiology input and investigations can delay diagnosis. Echocardiography often aids diagnosis and 178 sites with obstetric units (96%) reported availability of on-site echocardiography, although only 68 (37%) had 24 hour access.

For women with pre-existing cardiac conditions, only 18% of sites with obstetric units reported a joint obstetric cardiac clinic with obstetricians and cardiologists working together, while large areas of the country did not have this facility. These services were concentrated in London, where 10 of the 34 clinics were based, in contrast to only two in Scotland and one in Wales (figure 10).

Facilities and services for women during labour and birth

49% of all women giving birth for the first time will do so by caesarean section or with the assistance of ventouse or forceps.[33] For these events and related obstetric procedures to occur safely, timely access to anaesthetic services and theatre facilities is essential. Women who experience complications in pregnancy or at birth require higher levels of monitoring. The rate of women requiring high dependency obstetric care is difficult to determine but has been estimated as being around 1.2%.[34]

98% of sites with obstetric units reported that they had a dedicated obstetric theatre available on site, as recommended by the Royal College of Anaesthetists.[35] Three very small hospitals in rural locations reported sharing their theatre with surgeons performing procedures not related to pregnancy and birth. 174 sites with an obstetric unit (94%) reported availability of specialist bariatric equipment for obese women in theatre.[35]

67% of sites reported the provision of dedicated high dependency obstetric care. Sites with very large obstetric units were more likely to report this. Where available, the median number of dedicated high dependency obstetric beds reported was one per site (range 0 to 10; table 5).

Table 5: Number of obstetric high dependency beds in obstetric units

	median	range
<2500 births per year	0	0 to 6
2500-3999 births per year	1	0 to 6
4000-5999 births per year	2	0 to 5
≥6000 births per year	3.5	2 to 10
All OUs	1	0 to 10

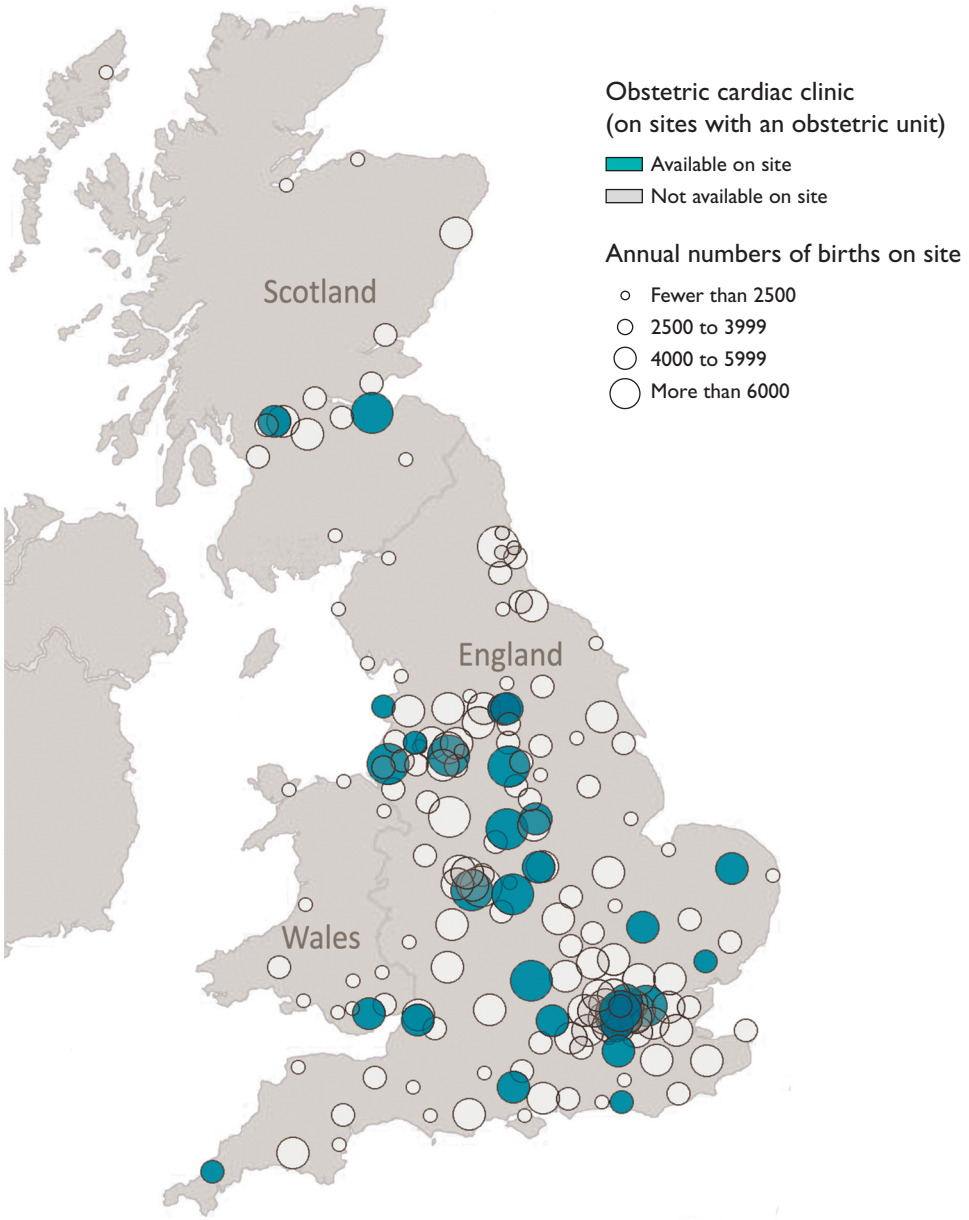


Figure 10: Obstetric cardiac clinic provision map

Specialist services and facilities for obstetric haemorrhage

Obstetric haemorrhage is the most common cause of maternal death directly related to pregnancy in the UK[24] and one of the most common causes of maternal death worldwide. Maternal haemorrhage is an emergency that can be planned for and the provision of transfusion facilities, interventional radiology and potentially cell salvage can be lifesaving.

Every site with an obstetric unit reported that they had a blood transfusion laboratory, except for a single small rural hospital. The configuration of this varied, with some laboratories being in a different building.

151 obstetric sites (82%) reported the provision of cell salvage, with 93 (50%) reporting availability at all times. 117 (63%) reported the provision of interventional radiology services, with 31 of these being available at all times.

53 obstetric sites (29%) additionally reported that they acted as a referral centre for women with a morbidly adherent placenta. Of these referral centres, 47 (89%) reported the presence of cell salvage and 45 (85%) reported provision of interventional radiology (figure 11).

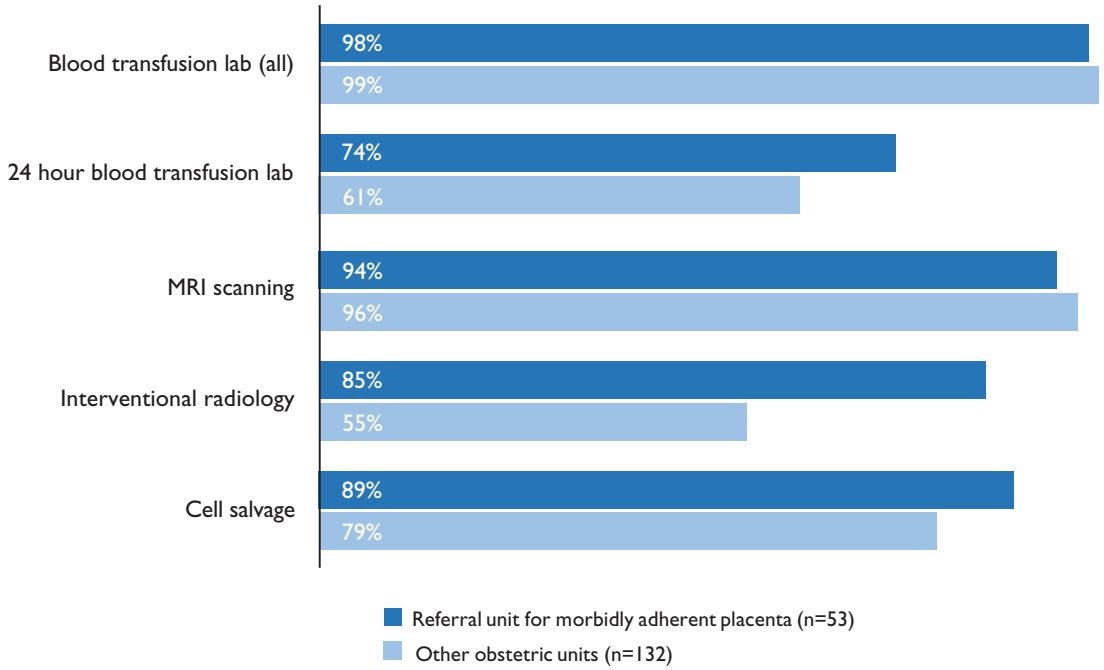


Figure 11: Availability of facilities for obstetric haemorrhage

Support from other specialities for acutely unwell women

Women who previously appeared well can develop sudden severe illness during pregnancy or the immediate period after birth. This may be due to reasons connected to pregnancy or to non-obstetric reasons and can lead to rapid deterioration and death.[24] For example, sepsis can quickly become life-threatening so urgent investigation and treatment is essential.

163 sites with an obstetric unit (88%) reported that there was always a medical registrar or more senior doctor on site who was responsible for acutely unwell adults. A further 20 sites (11%) reported having this provision but not at all times. Two large standalone women's hospitals reported they did not have this provision on site; both of these units had other sites nearby which provided this care.

Rapid access to microbiology advice and imaging can enable targeted therapy. 178 sites with an obstetric unit (96%) reported access to a microbiology laboratory and advice. 182 (98%) reported access to CT scanning and reporting, with 99 (54%) reporting that this was available at all times. 177 (96%) reported access to MRI scanning and 74 sites (40%) reported that this was available at all times.

If women deteriorate and require care beyond what can be provided on an obstetric high dependency unit, rapid access to higher dependency care is essential. 177 sites (96%) with an obstetric unit reported having a general adult high dependency unit and 173 (94%) a general intensive care unit. Absence of access to these general services on site was reported only by very small obstetric units in rural hospitals and by very large standalone obstetric units.

Multidisciplinary pelvic floor clinics

It is estimated that around 2.9% of women will sustain a tear that extends into the anal sphincter[36] and others will experience pelvic floor dysfunction following pregnancy. For these women, multidisciplinary follow up is beneficial.[37] 44% of obstetric units reported the provision of multidisciplinary pelvic floor clinics, in which specialist care can be given.

Perinatal mental health support and services

The Maternal Mental Health Alliance campaign "Everyone's Business" highlighted significant variation in the provision of perinatal mental health care.[38] 71% of all sites reported access to a community perinatal mental health team but only 37% of sites with an obstetric unit had an on-site clinic with a perinatal psychiatrist. 68% of trusts and boards reported engagement in a perinatal mental health network (43% in Scotland, 71% in Wales and 70% in England); this proportion was just 29% in England in 2013 (figure 12, table 6).[9]

Table 6: Perinatal mental health support and services

Involvement in perinatal mental health network (trusts/boards)	105/155 (68%)
Consultant midwife with remit for perinatal mental health (trusts/boards)	12/155 (8%)
Specialist midwife/allied health professional responsible for perinatal mental health (trusts/boards)	119/155 (77%)
Access to community perinatal mental health team (all sites)	199/281 (71%)
Presence of on-site clinic with perinatal psychiatrist (sites with an obstetric unit)	68/185 (37%)

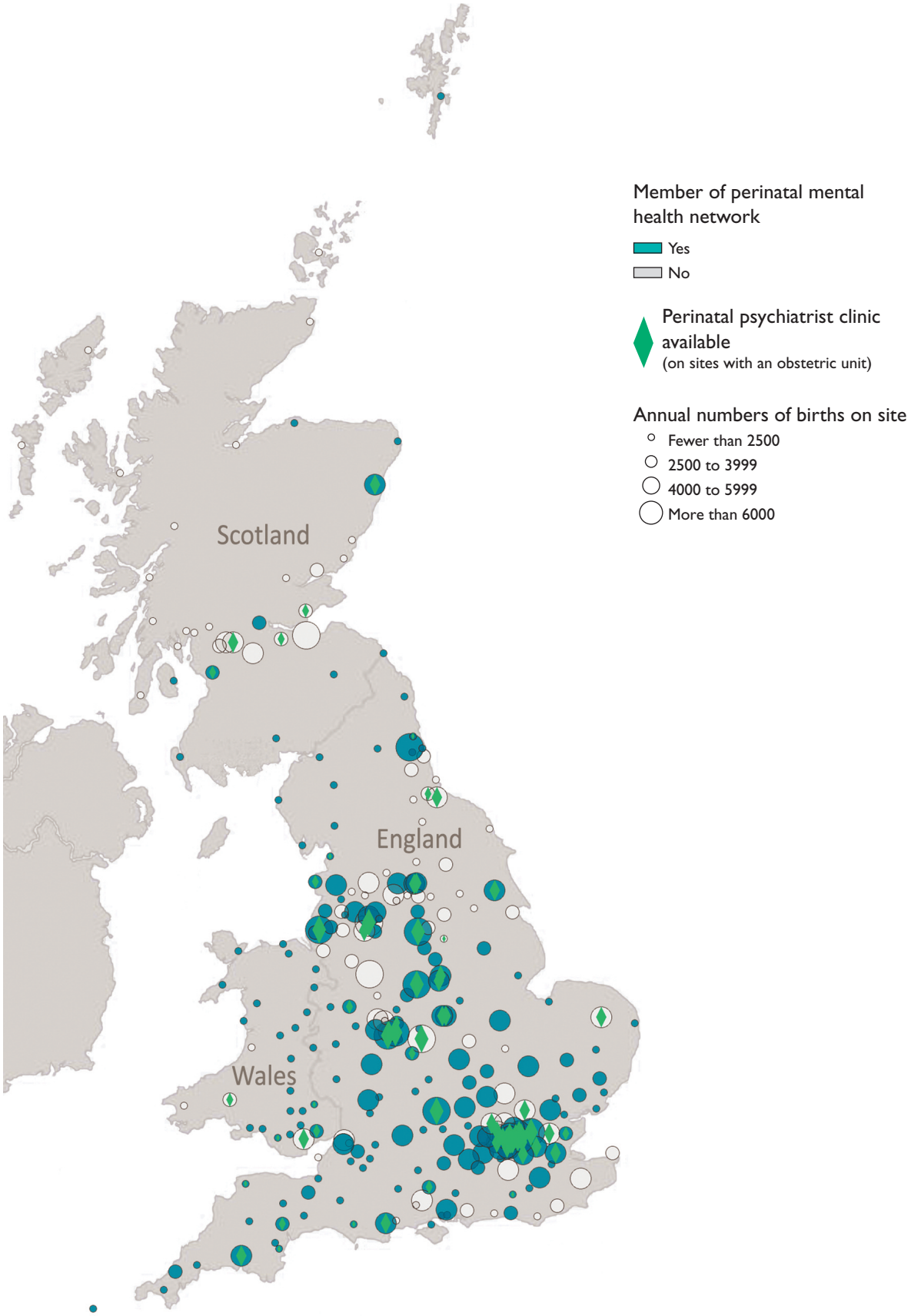


Figure 12: Map of sites providing perinatal mental health services (NB this map does not include perinatal psychiatric inpatient units (mother and baby units))

Levels of maternity care provision

Overall, it was not possible to determine an obvious classification for levels of maternity care provision in the antenatal and intrapartum period. There was no pattern of provision that was correlated with unit size. Standalone obstetric units had a different service configuration from units situated in general hospitals. Classification of obstetric units by provision of services, similar to that in neonatology, would facilitate planning of staffing and case mix.

Figures 13 and 14 describe the availability of services, expertise, clinics and facilities, where relevant across the day and night.

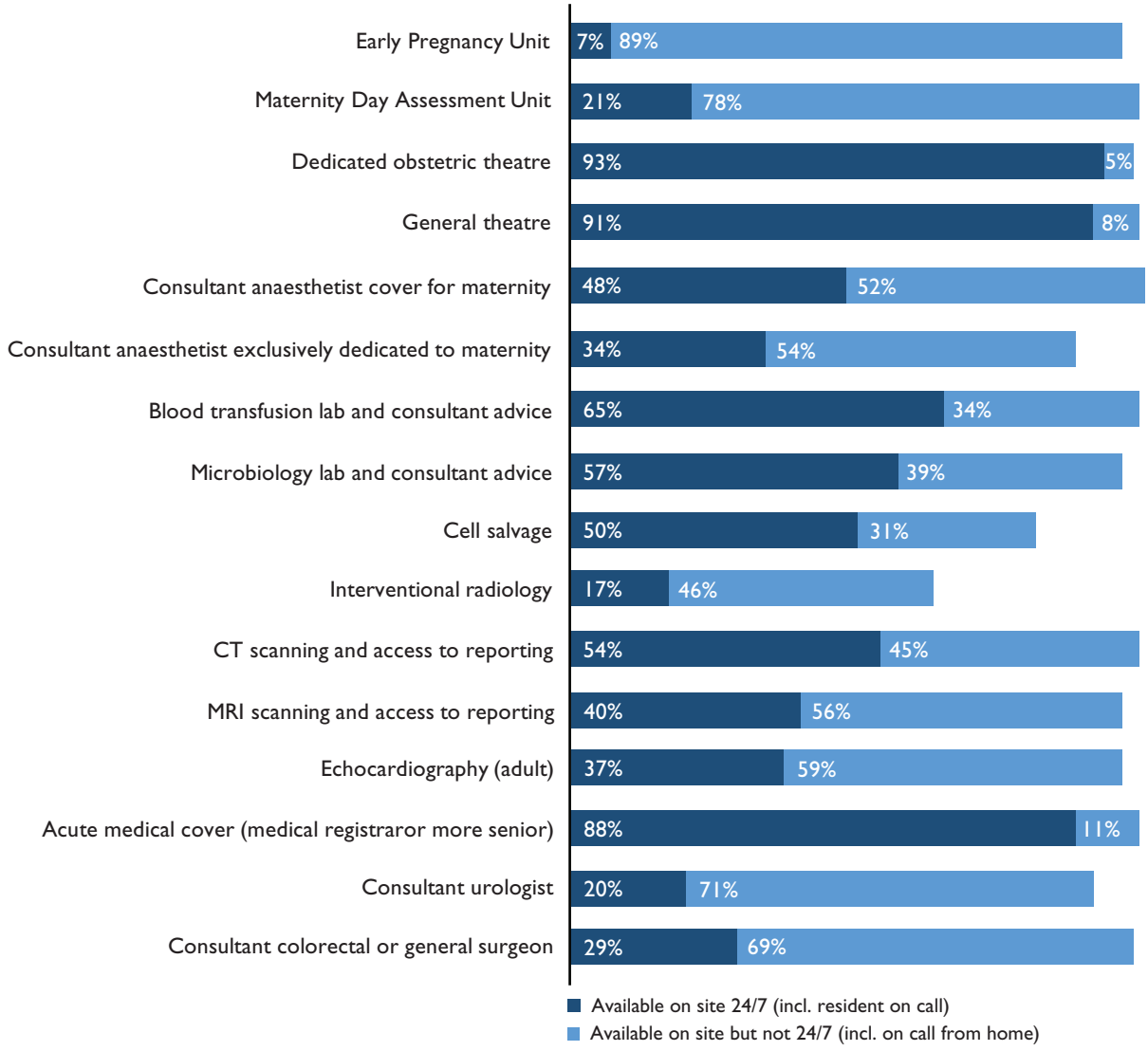


Figure 13: Availability across the day of services, expertise and facilities on sites with an OU (see appendix 4 for available services and facilities by number of births on site)

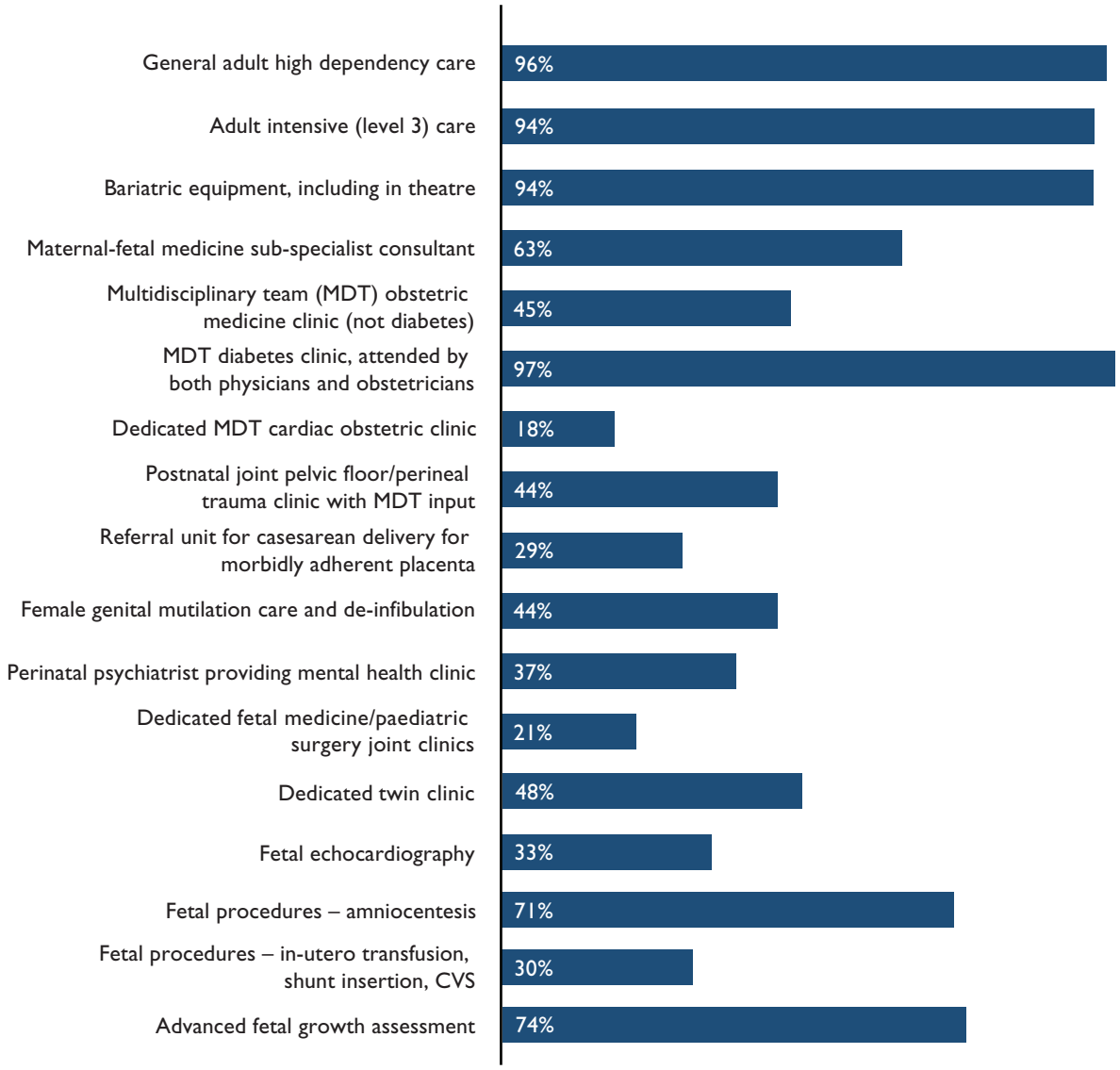


Figure 14: General availability of facilities, services, clinics and specialists on sites with an OU

Neonatal care

Transitional care

Many babies who require additional interventions, such as phototherapy or antibiotics, can receive these in close proximity to their mother rather than in the neonatal unit. Transitional care is defined as care of the baby beyond what could be provided by the mother and normal midwifery care alone, but with mother and baby remaining together and the mother remaining the primary carer. This reduces the number of admissions to neonatal units and enhances maternal-infant bonding and breastfeeding.[39]

64% of sites with a neonatal unit reported that they provided transitional care, with some planning to expand this provision (figure 15). A further 5% reported plans to introduce transitional care. Transitional care was more commonly available on sites with NICUs than with LNUs or SCBUs.

Transitional care may be provided on a dedicated ward but 75% of sites providing this care did so on the postnatal ward, often using both maternity and neonatal staff.

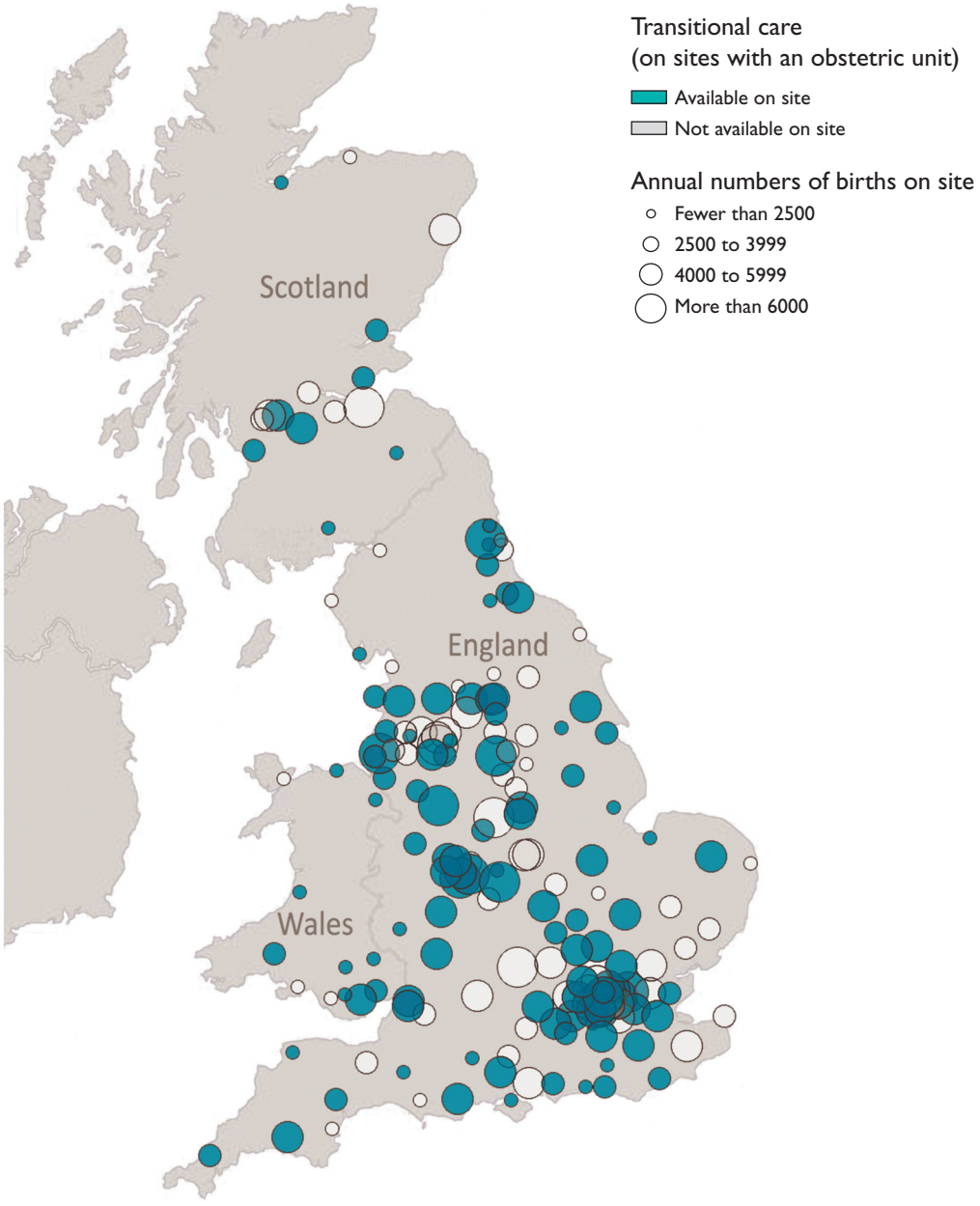


Figure 15: Provision of transitional care map

In-utero transfer

When the need for support after birth is anticipated, it is better for a baby to be born in a unit co-located with a neonatal unit of the right designation which has a cot available, than to be transferred after birth. To this end, all units participate in in-utero transfer, where women are transferred to appropriate units prior to birth. This process requires the investment of clinical time on

the part of the referring and receiving unit. 69% of sites with a neonatal unit reported they were not able to provide in utero transfer data, so this burden is not measurable. Moreover, if this information is not available, there is then no clear way of following up and recording outcomes of mothers and babies transferred.

Specialist neonatal services

Provision of services within neonatal settings varies and 72% of neonatal units reported they did not provide specialist neonatal services. While not every site with a neonatal intensive care unit would be expected to provide neonatal surgery, 23 reported providing this specialist service (40% of NICUs).

Working and learning together

Networks

Clinical networks are linked groups of healthcare providers, aiming to enable sharing of expertise, integrated working and equitable access to care, unconstrained by organisational and geographical boundaries. Neonatal networks were established following the 2003 review of neonatal intensive care by the Department of Health,[40] and a key recommendation of the English maternity review was that maternity care professionals similarly facilitate personalisation, safety, choice and access to specialist services through development of local maternity systems and wider clinical networks.[1] Likewise, the Scottish maternity and neonatal review recommended the formation of a single maternity network and a single neonatal managed clinical network across Scotland.[2]

92% of trusts in England reported that they are engaged in both a maternity and a neonatal network, an increase from 2013, when 74% of English trusts were involved in a maternity network.[13] One further trust reported involvement in a neonatal, but not a maternity, network. All trusts reported some referral of women between hospitals, for example for more specialist care.

In Wales, six of the seven health boards (86%) reported engagement in both a maternity and a neonatal network. In Scotland, configuration of services is different due to the size of the NHS boards. Only 3 Scottish boards (21%) reported involvement in a maternity network.

Electronic information sharing

Information sharing between professionals, organisations and with the women using the maternity services is vital to provide safe and effective care. A key ambition of the maternity transformation programme in England is to develop a digital maternity tool and work towards the implementation of women-held digital maternity records.[4] The Scottish maternity and neonatal review recommendations echoed this and also suggested telemedicine could be helpful for remote settings.[2] 97% of trusts and boards reported using an electronic maternity information system to record the care of women and babies. However, even among the 133 services (86%) which reported full access to electronic maternity records for maternity clinicians in hospital, access was still limited off-site, for non-maternity clinicians and in particular for women themselves (figure 16).

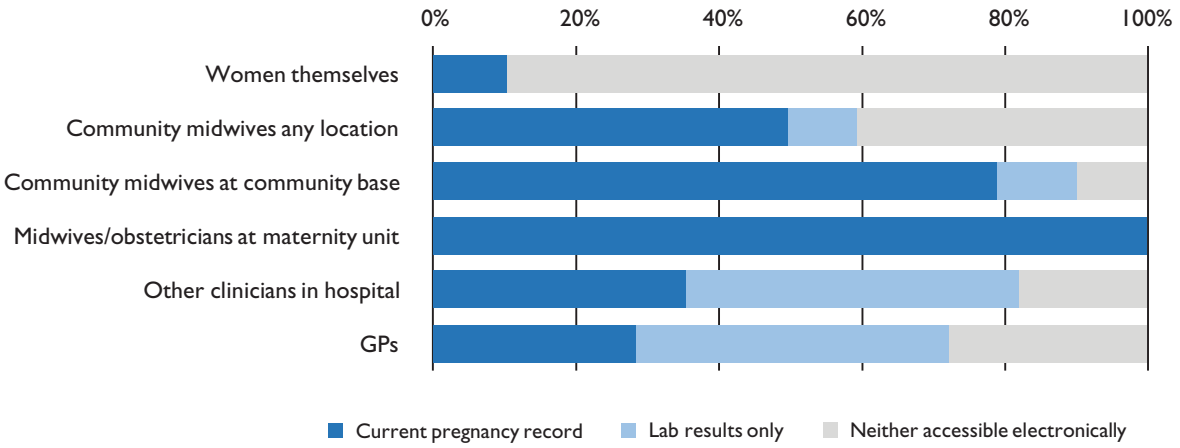


Figure 16: Who has access to electronic pregnancy details? (out of those services which reported full access for maternity clinicians in hospital n=133)

Multiprofessional training

Multiprofessional training is recommended by the Royal College of Midwives, the Royal College of Obstetricians and Gynaecologists and the Royal College of Anaesthetists.[20, 21, 35] 95% of trusts and boards conducted multiprofessional training for emergencies, and over 80% had this for fetal monitoring. Training in other subjects was less frequently multiprofessional, with only 56% reporting joint training in communication and 17% in facilitating normal birth (figure 17).

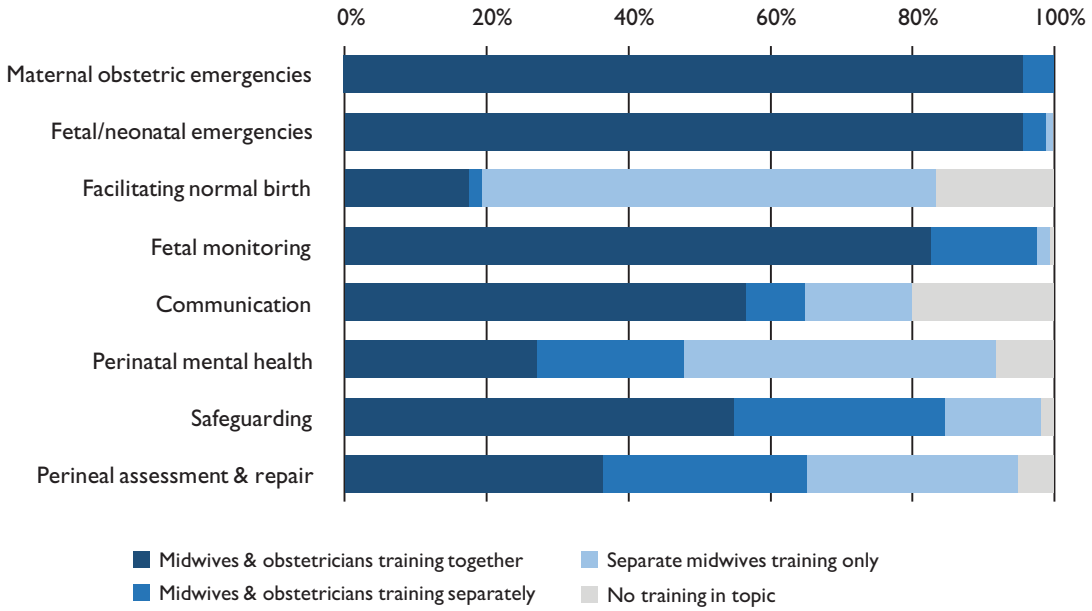


Figure 17: Mandatory and multiprofessional training

The care environment

Birth room facilities

The Department of Health recommends that birth rooms should have private bathroom facilities and that there should not be more than four beds in maternity ward rooms.[41] 59% of trusts and boards reported involving women in the design of the care environment but only 63% of sites reported having en-suite or private bathrooms for all their birth rooms. 29% had some antenatal or postnatal ward rooms with more than four beds.

The option of using a pool for pain relief should be available to labouring women according to NICE guidance.[15] 82% of labour wards and 91% of midwife-led units had at least one plumbed in birth pool. On average, freestanding midwife-led units had 1 pool per 1.5 birth rooms, alongside midwife-led units 1 pool per 2 rooms and obstetric unit labour wards 1 pool per 9 rooms.

Facilitating support from birth partners at all times

At 71% of sites with an obstetric unit, birth partners could stay at all times (i.e. outside of visiting hours, including overnight) if a woman was having labour induced. At 80% of sites, birth partners could stay at all times in the birth room after the birth, and at 62% of sites they could stay at all times on the postnatal ward, in line with National Childbirth Trust (NCT) recommendations.[42]

Accommodation for parents with babies receiving neonatal care

The Department of Health and the All Wales Neonatal Standards recommend that accommodation should be available for parents with babies in intensive care at the ratio of one bedroom per intensive care cot[18, 43] (in Scotland, exact numbers are not specified).[44] Overall, 49% of neonatal units with declared intensive care cots met this standard with the largest units less likely to do so than the smallest. Regardless of designation, 95% of neonatal units had at least one parents' bedroom (range 0 to 12, median 2) but only 16% of NICUs had the recommended number (table 7).

Table 7: Number and proportion of neonatal units meeting parents' accommodation standard (of those units which reported they had intensive care cots; n=146)

Number of births on site	No	Yes
<2500	3 (16%)	16 (84%)
2500-3999	19 (40%)	28 (60%)
4000-5999	38 (59%)	26 (41%)
≥6000	15 (94%)	1 (6%)
Neonatal unit designation		
SCBU	1 (9%)	9 (90%)
LNU	26 (33%)	53 (67%)
NICU	48 (84%)	9 (16%)
Overall	75 (51%)	71 (49%)

3. Maternity and neonatal services staffing

Key messages

There is variation in staffing provision, reflecting differences in staffing models and the absence of clear national standards for midwifery and obstetric staffing across the antenatal, intrapartum and postnatal care periods. To inform the development of such standards, associations between staffing and outcomes should be explored.

88% of sites with an obstetric unit report difficulties in filling obstetric middle grade rotas during the previous 3 months. Medical staffing requirements should be evaluated and standards for obstetric staffing should be developed with reference to case mix and levels of specialist service provision.

Of the sites which monitor one to one midwifery care during established labour, 84% report that at least 95% of women receive this. There is variation in the reported number of antenatal and postnatal beds per rostered midwife, which ranges from 2 to 16 (median 7). Midwifery ward staffing requirements should be examined and standards for antenatal and postnatal ward staffing should be developed following further exploration of associations between staffing and outcomes.

The level of continuity of carer that maternity services perceive they provide is low, regardless of how midwifery care is organised.

Only 15% of trusts and boards use care models for which they report that women see the same midwife for most care contacts in the antenatal, intrapartum and postnatal period, including care in labour from a known midwife. However, none use these care models for all women. Maternity services, and where applicable commissioners, should work towards electronic recording of all maternity care contacts to monitor progress in the ability to provide continuity of carer and to evaluate which care models are associated with the highest levels of continuity of carer.

The professional bodies related to maternity and neonatal care have each published a number of reports highlighting the staffing challenges faced by their professions, such as the ageing midwifery and neonatal nursing workforce and the difficulty in filling middle grade medical rotas.[45, 46, 47, 48, 49]

Different ways of working have emerged to address some of these challenges, with for example the roles of maternity support workers and advanced neonatal nurse practitioners expanding.[50, 51] However, achieving continuity of carer, as prioritised by the maternity reviews, may require considerable changes in staffing models.[1, 2]

This chapter describes midwifery care models, skill mix, presence of senior obstetric and neonatal staff, and unit closures.

Midwifery and maternity support worker staffing

Care models and continuity

Midwifery staffing was organised in different ways; some services had separate staff in the community and in hospital, while others had integrated staff, who worked across antenatal, intrapartum and postnatal care in the community and in hospital. 10% of trusts and boards reported all midwives worked in an integrated way, with a further 34% having some integrated midwives. Only 3% of trusts and boards reported that all their midwives carried a caseload, defined as a primary midwife providing care during pregnancy, birth and postnatally with back-up provided by another known midwife when necessary; a further 35% reported having some midwives who carried a caseload, most commonly of women with particular needs.

58% of trusts and boards operated more than one care model and 92% had community midwives organised into teams. 36% of these reported that the majority of their teams had 4 to 6 midwives as recommended by Better Births[1], but over half mostly had larger teams than this (figure 18).

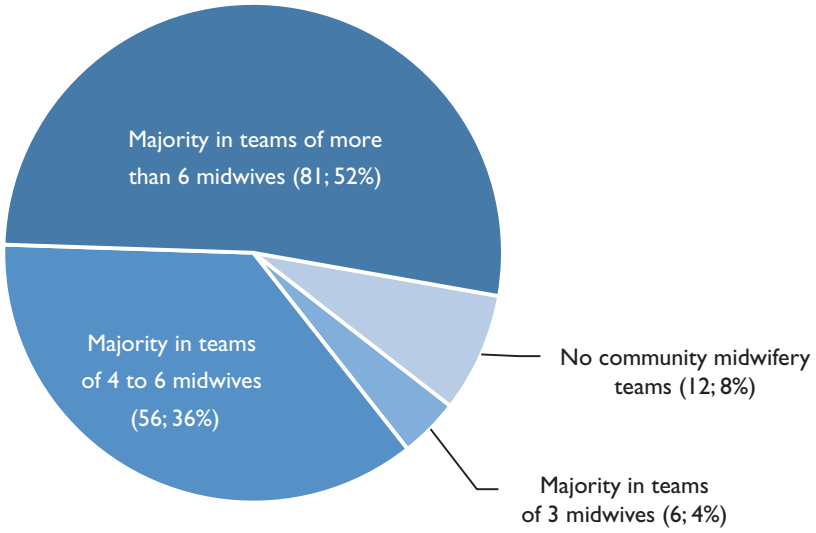


Figure 18: Community midwifery team size

The need for continuity of carer is among the most prominent of recommendations resulting from the national maternity reviews, without the concept being defined in great detail.[10] Only electronic recording of all contacts during pregnancy, birth and the postnatal period would give a precise record of the number of different caregivers women see, but this would require sustained adequate IT provision. Currently services rely mainly on time-consuming audit of paper records and 40% of maternity services do not monitor continuity of carer at all; this, as well as the lack of clear definitions and standards, will make it difficult to measure if progress is being made with this maternity care improvement ambition.

[10] For the purpose of this organisational survey, continuity of carer within the antenatal or postnatal period is interpreted as women seeing the same midwife for most (more than 50%) of their antenatal or postnatal care contacts respectively. Continuity across care periods would imply women seeing the same midwife for most care contacts in these periods, including care in labour from a known midwife for continuity across the antenatal and intrapartum period. This pragmatic interpretation draws on existing literature, Care Quality Commission surveys, and Royal College of Midwives and Better Births recommendations.[43, 46, 6]

The survey asked respondents to indicate the level of continuity which they perceived they were currently able to provide with the care model(s) they operated. Although numbers were small for the different care models, it was evident that only a small minority of respondents perceived they were able to provide continuity of carer across pregnancy, birth and the postnatal period, regardless of the way care was organised; only 15% of trusts and boards used care models for which they reported that women saw the same midwife for most care contacts in the antenatal, intrapartum and postnatal period, including care in labour from a known midwife. However, none used these care models for all women (figure 19).

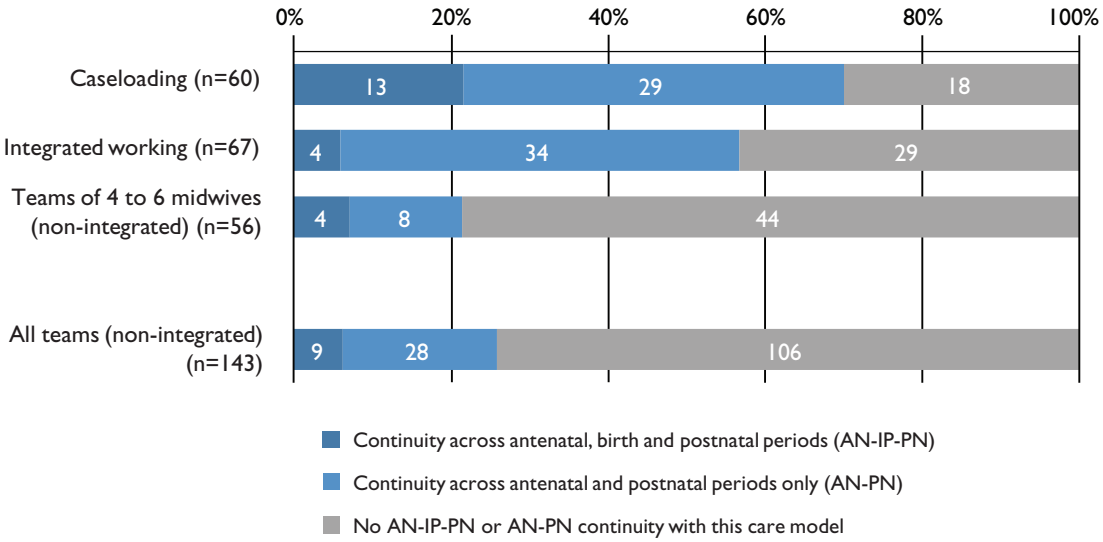


Figure 19: Level of continuity of carer provided with different care models (as estimated by respondents)

Midwifery staff numbers and skill mix

According to published national workforce data, there were 21,470 full time equivalent (FTE) qualified midwives in England and 6583 FTE maternity support workers in January 2017.[11, 52] The midwifery figure includes midwives in management roles such as matrons and heads of midwifery. In Scotland there were 2253 FTE qualified midwives and 487 FTE maternity support workers in September 2016 (most recent data available),[53] and in Wales there were 1332 FTE qualified midwives and an additional 37 FTE nurse managers, matrons and consultants working in maternity care in 2016, and 415 FTE maternity support workers.[54]

According to further workforce figures provided by NHS Digital, the Information Services Division Scotland and the Knowledge and Analytical Services of the Welsh Government, two thirds of maternity support workers overall were employed at band 2, while two thirds of midwives overall were employed at band 6. There was considerable variation in skill mix between trusts and health boards across the three countries, including in the proportion of maternity support workers and proportions of staff on different bands (figure 20).

[11] The term 'maternity support worker' to denote staff members working in a midwifery support role at pay bands 1 to 4 is not used universally, but is used in this report for any staff in this role.

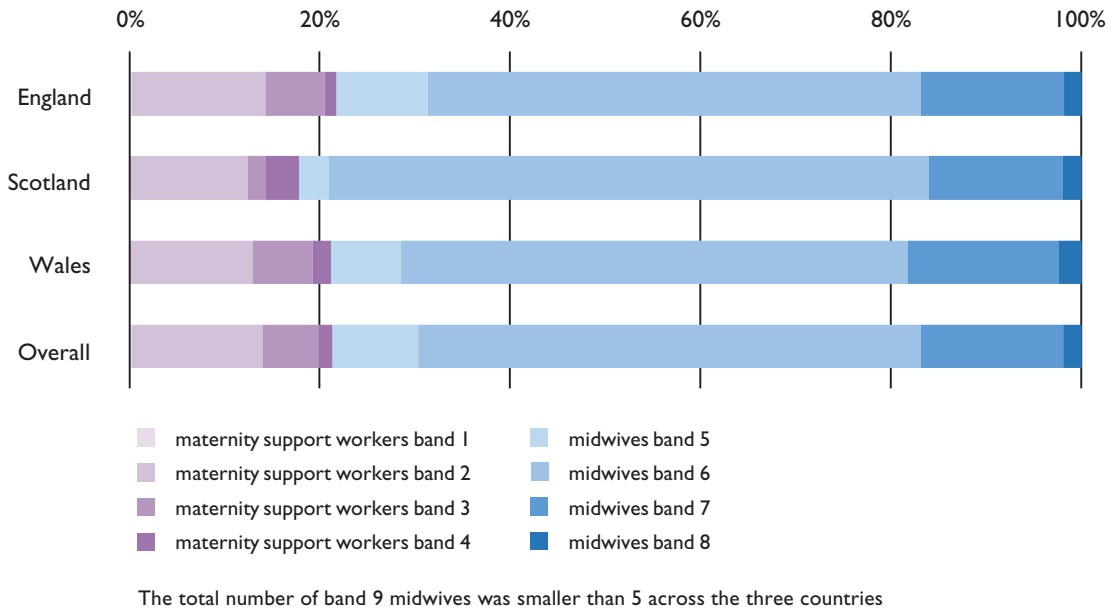


Figure 20: Skill mix: maternity support workers (bands 1–4) and midwives (bands 5–8)

Based on the workforce data received, the median annual number of births per midwife was 29, with a wide range from 8 to 43 (due to the nature of our data we were unable to exclude midwives working in non-clinical roles so this figure should *not* be compared to the more narrowly defined midwife to births ratios referred to by RCM recommendations and Birthrate Plus, which are based only on midwives providing direct care to women and exclude the 8-10% of midwives in non-clinical roles, such as management and governance).[55, 56] Trusts and boards with higher annual numbers of births tended to have higher numbers of births per midwife.

89% of sites reported use of a staffing planning tool as recommended by NICE.[57] One of the purposes of such tools is to ensure there are enough midwives on duty to provide one to one care to women in established labour, in line with longstanding recommendations.[15, 58] 84% of sites monitored the provision of one to one care during labour and of those, 54% reported that all women had one to one care (figure 21). Sites which recorded provision of one to one care in women's electronic maternity records tended to report lower proportions of women receiving one to one care than those monitoring this by periodic audits of paper records or snapshot audits of numbers of midwives on labour ward and women in labour.

In contrast with the staffing standard for midwifery care in established labour, there is no explicit national standard for the optimum number of women cared for by each midwife on antenatal or postnatal wards. The overall recommended midwives to births ratios include provision for antenatal and postnatal care,[55] but there is no separate standard for staff to women ratios for antenatal and postnatal wards and NICE suggests more research is needed on the relationship between midwifery staffing and outcomes to establish whether staffing ratios can be identified and recommended.[57]

We asked for the number of midwives and MSWs rostered on each ward for a typical weekday daytime shift. Some respondents indicated that they deployed staff flexibly across antenatal and postnatal wards, between labour ward and an alongside midwife-led unit, across the whole site, or across the

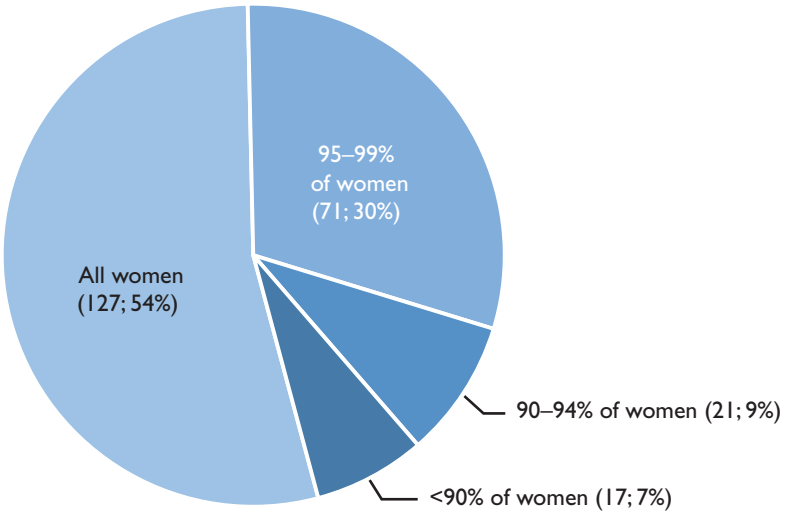


Figure 21: Proportion of women reported to have had one to one midwifery care in labour (of sites which monitor this, n=236)

hospital and community. Around 30% of freestanding, mostly small, midwife-led units did not have midwives permanently on site but were staffed by community midwives who would attend when a woman went into labour. Where dedicated staff were rostered, the number of beds per rostered midwife varied (table 8). Some units supplemented their on-site staff with community midwives when needed.

Table 8: Number of beds per rostered midwife

	Antenatal, postnatal and combined wards	OU labour ward	AMU	FMU
Median	7	1.3	2	2
Range	2 to 16	0.6 to 5	0.7 to 6	0.2 to 7

Obstetric and anaesthetic staffing

The organisation of the medical staffing of obstetric units is very different to the organisation of midwifery staffing. In the UK, specialist training in obstetrics and gynaecology lasts a minimum of seven years. Consultants have completed specialist or equivalent training. Doctors in their third year of specialist training and above (ST3 and above) in obstetrics and anaesthetics are known as 'registrars' or 'middle grades'. Doctors involved in obstetrics who are more junior than this (ST2 or below) always work under supervision. In addition, there are staff grade, associate specialist and specialty doctors (SAS) who are not currently within training programmes and who act as junior or middle grade doctors commensurate with their experience and qualifications.

In the UK, GPs are only rarely involved in intrapartum care, with three freestanding midwife-led units reporting some GP involvement and one reporting GP attendance at homebirths. All of these were on islands in Scotland, where limited other medical care is available and transfer to mainland medical services can be challenging. 35% of units reported that GPs were involved in antenatal care.

Obstetric staffing

The 2016 RCOG report "Providing quality patient care – obstetrics and gynaecology workforce" describes a multitude of challenges currently facing obstetric staffing; there is a significant shortage of middle grade doctors in the UK. The report also concludes that recommendations about hours of consultant presence on labour ward based on number of births, as in previous service standards,[19] are no longer appropriate and that the focus should be instead on identifying adequate levels of cover at all times, relevant to each unit.[48]

98% of sites with an obstetric unit reported consultant presence on labour ward during the daytime from Monday to Friday. All units, except one very small rural unit, reported that a middle grade obstetrician was present on labour ward at all times (figure 22).

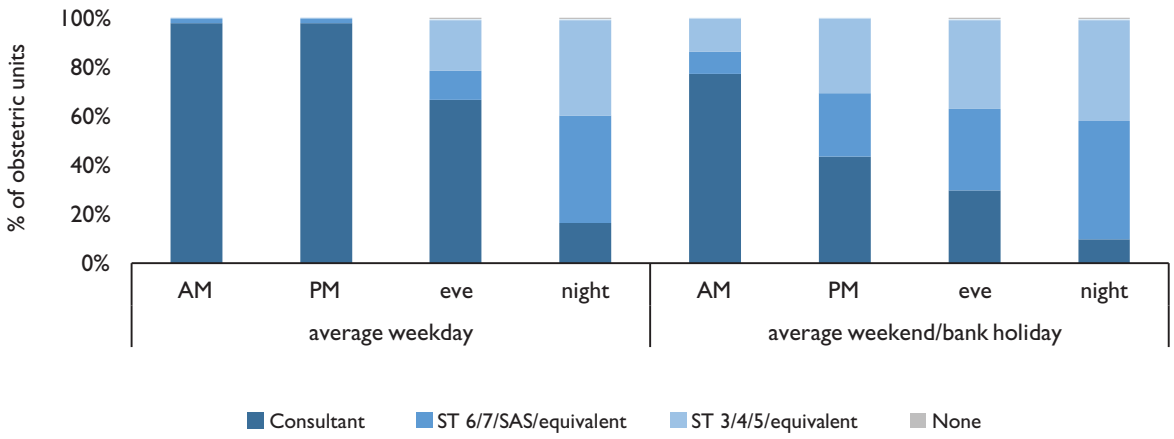


Figure 22: Minimum grade of most senior obstetrician present on labour wards

Outside of daytime working hours, patterns of senior presence varied. There was clear evidence of increasing seniority of presence on larger labour wards, with larger units reporting more consultant presence hours and more senior registrar and consultant presence out of hours. Units reported mixed patterns of staffing levels that reflected both their size and perceived need.

One component of cover is ensuring that rotas are complete. Survey responses indicated that there was a significant gap in cover at middle grade level. 88% of obstetric units reported a gap in their middle grade rota and 83% reported requiring locum cover to staff their middle grade rotas in the previous 3 months. In England this figure was 85%, in Scotland 45% and in Wales 100% (table 9).

Table 9: Obstetric middle grade rota gaps

Proportion of the middle grade rota in the last 3 months which was entirely unfilled, filled by a locum or filled by a consultant	Number of units in each response category (excluding units which responded a proportion was unknown)		
	Entirely unfilled	Filled by a locum	Filled by a consultant
0%	93 (57%)	28 (17%)	95 (58%)
1 to 5%	25 (15%)	27 (16%)	44 (27%)
6 to 10%	24 (15%)	38 (23%)	10 (6%)
11 to 25%	12 (7%)	54 (33%)	12 (7%)
26 to 50%	5 (3%)	17 (10%)	1 (1%)
More than 50%	4 (2%)	2 (1%)	2 (1%)
Total (excluding unknown)	163 (100%)	166 (100%)	164 (100%)
Overall proportion entirely unfilled, filled by a locum or filled by a consultant (excluding unknown)	70 (43%)	138 (83%)	69 (42%)
Unknown	22	19	21

Anaesthetic staffing

Presence of an anaesthetist who is able to perform regional (epidural or spinal) and general anaesthesia in pregnant women is essential in all hospitals that have obstetric facilities. Consultant anaesthetists supervise planned work and provide support for complex cases, as well as delivering direct care.

All hospitals reported cover by a consultant anaesthetist, and 88% reported a specialist obstetric consultant anaesthetist. Of those, 55% reported the presence of a consultant anaesthetist dedicated to obstetrics for at least 48 hours a week, in line with the Obstetric Anaesthetists' Association (OAA) recommendation.[59] There was a positive correlation between the reported number of hours of consultant anaesthetist cover and the number of births.

Maternity unit closures

When a situation arises where a maternity unit has not enough staff and/or beds to care for women safely, the decision might be made to temporarily close the unit to new admissions. Such closures can last from a few hours to several days or more, with women who were booked to give birth in the unit diverted to other units. Of the 80% of sites which were able to report the number of times their obstetric or midwife-led units closed to new admissions during the past financial year, 45% of obstetric units, 27% of alongside midwife-led units and 23% of freestanding midwife-led units closed at least once. Although the number of closures ranged from none to 46 for midwife-led units and from none to 50 for obstetric units, only a few units closed often and the median number of closures for all three unit types was 0 (table 10). Three quarters of units which closed at least once provided data on the total length of time they were closed during the past year, which ranged from less than an hour to 28 and 32 days for midwife-led and obstetric units respectively. The obstetric units which closed most often were mostly large urban or suburban units.

Table 10: Number of maternity unit closures (of those units which could report this)

	Number of closures during 2015/16		
Unit type (number able to report closures)	**median**	**range**	**interquartile range**
AMUs (n=103)	0	0 to 46	0 to 1
FMUs (n=66)	0	0 to 46	0 to 0
OUs (n=155)	0	0 to 50	0 to 2
Annual number of births on sites with an OU (number able to report closures)			
<2500 (n=34)	0	0 to 22	0 to 1
2500-3999 (n=49)	0	0 to 18	0 to 1
4000-5999 (n=59)	1	0 to 50	0 to 4
≥6000 (n=13)	0	0 to 14	0 to 1

Neonatal unit staffing

Unlike midwifery and obstetric staffing, neonatal unit staffing has clear, detailed standards for the number and qualifications of nursing staff required per baby at different levels of care, and the seniority of available medical staff.[51] It emerged during the survey pilot that we would not be able to obtain staffing data of sufficient detail to determine whether neonatal units were meeting these staffing standards. In surveys conducted by the charity Bliss in England and Wales in 2015, and in Scotland in 2016, large proportions of neonatal units responded they were unable to meet the neonatal nursing and medical staffing standards.[60, 61, 62] This is echoed in reports by the Royal College of Paediatrics and Child Health.[49, 63] Below we report overall numbers of neonatal nursing staff based on published data and the availability of senior neonatal medical staff throughout the days and nights of the week based on our survey.

Neonatal nurses

According to published national workforce data, there were 5275 FTE qualified neonatal nurses, 143 FTE qualified midwives and 436 FTE nursery nurses and nursing assistants working in neonatal care in England in January 2017.[52] In Scotland there were 577 FTE qualified neonatal nurses, 95 FTE qualified midwives and 120 FTE nursery nurses and nursing assistants working in neonatal care in September 2016 (most recent data available).[53] In Wales there were 405 FTE qualified neonatal nurses and 23 FTE nursery nurses and nursing assistants working in neonatal care in 2016 (most recent data available).[54]

It was not possible to identify all nurses and nursing support staff working in neonatal care from the further workforce data provided by NHS Digital, the Information Services Division Scotland and the Knowledge and Analytical Services of the Welsh Government; for 25 trusts and boards with at least one neonatal unit there was no information specific enough to identify those working in neonatal care so overall numbers of neonatal nursing staff and skill mix could not be reliably determined from these sources.

Neonatal medical staff

Neonatal medical staffing is split into three levels which can include appropriately trained advanced neonatal nurse practitioners (ANNPs):

- tier 1 practitioners can include doctors who are new to the speciality (up to training year four), advanced neonatal nurse practitioners, and enhanced neonatal nurse practitioners
- tier 2 practitioners include clinicians who are competent to be unsupervised on site, such as more senior doctors (trainees above year four) and advanced neonatal nurse practitioners with appropriate training and competence
- tier 3 practitioners are consultants or equivalent

Around 30% of neonatal units used free text to report a rota covered by a mixture of grades from third or fourth year specialist trainees (ST 3 or 4) upwards, sometimes also by advanced neonatal nurse practitioners, staff grades and/or consultants. Figures 23 and 24 therefore represent the minimum seniority of cover during each time period (i.e. the minimum tier that the most senior person on duty might be, given the rota mix).

All NICUs reported that the senior neonatal paediatrician physically present on, or immediately available for the neonatal unit during weekday daytimes was a consultant (tier 3). For weekday evenings and nights, 78% and 17% reported tier 3 presence respectively, the remainder having at least tier 2 presence. 10 out of 57 NICUs (17%) had a consultant present overnight, regardless of the day of the week (across all neonatal unit designations this was 12%).

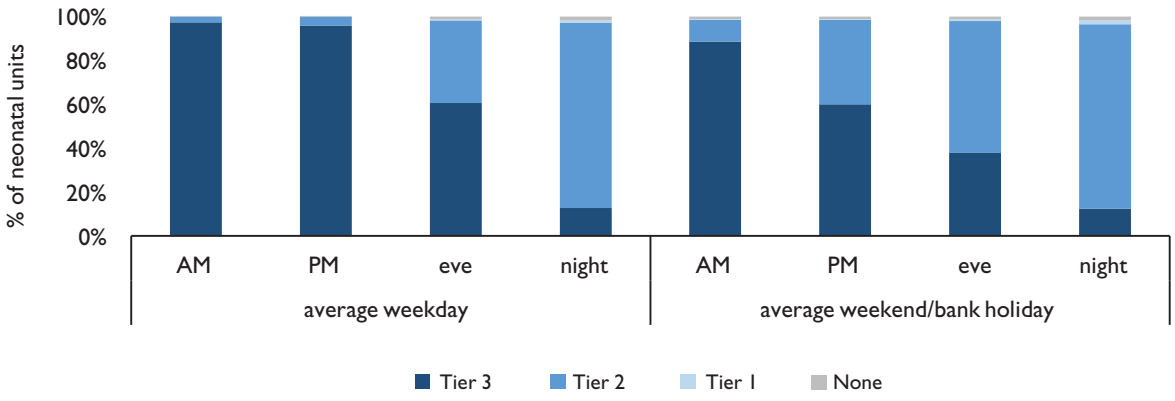


Figure 23: Minimum tier of most senior neonatal cover present on site (all neonatal unit designations)

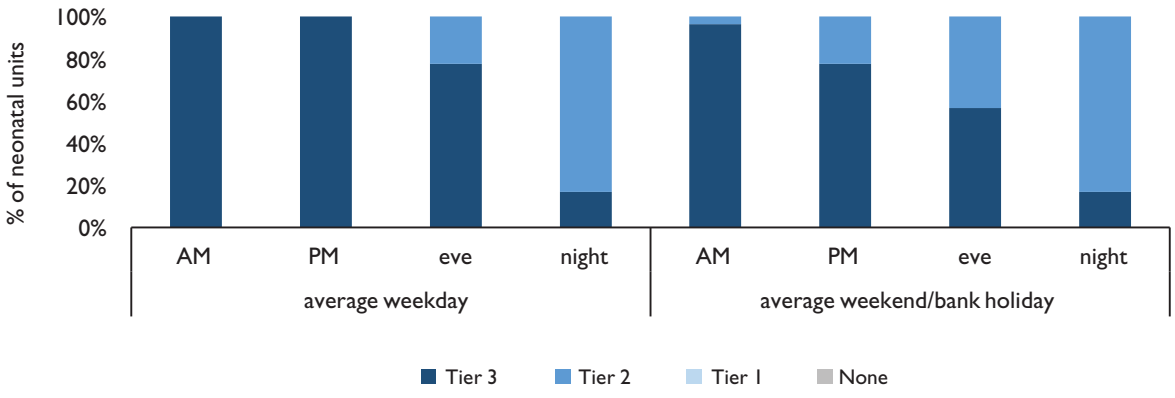


Figure 24: Minimum tier of most senior neonatal cover present on site (NICU only)

Neonatal unit closures

Only 64 out of 184 neonatal units (35%) were able to provide data on the number of closures to admissions of babies; of these, 61% closed at least once during the past financial year. The range was 0 to 220 closures (median 2), which may reflect differences in interpretation of 'closures to ex-utero admissions'. NICUs closed more frequently than LNUs and SCBUs (table 11). Half of the neonatal units that closed at least once (20 units) provided data on the total length of time they were closed during the past year, which ranged from less than an hour to 75 days (median 7 days).

In practice, decisions are made on a case by case basis, taking into account the reason for referral and the availability of cots within the network and beyond. Unless all births are diverted from a site, a neonatal unit cannot close completely to admissions, and even if full to capacity, must stabilise and arrange transfer for babies born on site.

Table 11: Number of neonatal unit closures (of those units able to report this)

	Number of closures during 2015/16		
Designation (number able to report closures)	**median**	**range**	**interquartile range**
SCBU (n=15)	1	0 to 75	0 to 10
LNU (n=28)	2	0 to 49	0 to 19
NICU (n=21)	4	0 to 220	0 to 100
All neonatal units able to report closures (n=64)	2	0 to 220	0 to 27

Appendix 1

National organisational standards and recommendations

The standards produced by organisations such as NICE, the RCOG and the RCM include many organisational aspects of care and the recent national maternity reviews in England and Scotland gave rise to a number of organisational recommendations. However, there are relatively few organisational standards and recommendations which are strictly defined and suitable for measurement by survey at a national level. For example, standards on certain policies being in place are best audited locally where implementation can be verified. Where suitable standards or recommendations exist, we have reported on adherence; in their absence, we have described the responses received and highlighted opportunities for improvement.

AAGBI – Association of Anaesthetists of Great Britain and Ireland
BAPM – British Association of Perinatal Medicine
DoH – Department of Health
HCC – Healthcare Commission
NCT – National Childbirth Trust
NHSE – NHS England
NICE – National Institute for Health and Care Excellence
    CG – clinical guideline
    NG – NICE guideline
    QS – quality standard
OAA – Obstetric Anaesthetists' Association
RCM – Royal College of Midwives
RCoA – Royal College of Anaesthetists
RCOG – Royal College of Obstetricians and Gynaecologists
RCPCH – Royal College of Paediatrics and Child Health
SIGN –Scottish Intercollegiate Guidelines Network
WHSSC –Welsh Health Specialised Services Committee

Organisation and publication year (see references for full details)	Standard/recommendation	Report section (p.)
NICE 2014[15] NHSE 2016[1]	Commissioners and providers (or networks of providers) should ensure that all 4 birth settings (home, freestanding MLU, alongside MLU, obstetric unit) are available to all women (in the local area or in a neighbouring area)	Chapter 1 (p.26)
RCOG/RCM/RCoA/ RCPCH 2008[64]	Effective development of a maternity service which meets the needs of the local population relies on an agreed strategy developed by key stakeholders working within the national service framework	Chapter 1 (p.31)
NHSE 2016[1]	Provider organisation boards should designate a board member as the board level lead for maternity services	Chapter 1 (p.31)
RCoA/RCM/RCOG/ RCPCH 2007[19]	All midwifery units must have one WTE consultant midwife. All obstetric units must have one WTE consultant midwife to 900 low-risk women	Chapter 1 (p.31)
RCOG 2016[21] RCM 2016[20] NHSE 2016[1]	There should be evidence that the local Maternity Services Liaison Committee (MSLC) or other such structures embed user involvement to develop and improve services	Chapter 1 (p.33)
HCC 2008[22] NHSE 2016[1]	Maternity services should provide a choice of locations for antenatal appointments where practicable and make more antenatal appointments available outside normal working hours	Chapter 2 (p.36)
NICE 2014[15]	Consider a face-to-face early assessment of labour for all low-risk nulliparous women, either at home (regardless of planned place of birth) or in an assessment facility in her planned place of birth (midwifery-led unit or obstetric unit)	Chapter 2 (p.36)
SIGN 2010[65] NICE 2015[66]	An experienced multidisciplinary team, led by a named obstetrician and physician with an interest in diabetes, and including a diabetes specialist nurse, diabetes specialist midwife and dietitian should provide comprehensive care from pre-pregnancy to postnatal review.Ensure that women with diabetes have contact with the joint diabetes and antenatal clinic for assessment of blood glucose control every 1–2 weeks throughout pregnancy	Chapter 2 (p.38)
RCoA 2017[35]	There should be at least one fully equipped obstetric theatre within the delivery suite, or immediately adjacent to it. The number of operating theatres required will depend on the number of deliveries and the operative risk profile of the women delivering in the unit	Chapter 2 (p.38)
RCoA/RCM/RCOG/ RCPCH 2007[19] RCOG/RCM/RCoA/ RCPCH 2008[64]	Consultant obstetric units require a 24-hour anaesthesia and analgesia service with consultant supervision, adult high-dependency and access to intensive care, haematology blood transfusion and other district general hospital support services and an integrated obstetric and neonatal care service. It is essential that, wherever women are giving birth in an obstetric unit, there should be adequate laboratory facilities, if not on site then within easy reach	Chapter 2 (pp.38, 40)
NICE 2016[67]	Specialist multidisciplinary perinatal community services and inpatient psychiatric mother and baby units (MBU) are available to support women with a mental health problem in pregnancy or the postnatal period	Chapter 2 (p.41)
HCC 2008[22] NHSE 2016[1] NICE 2014[68] SIGN 2012[69]	Trusts and commissioners should increase membership of maternity networks. Clinical networks should be established for perinatal mental health services, managed by a coordinating board of healthcare professionals, commissioners, managers, and service users and carers. A national managed clinical network for perinatal mental health should be centrally established in Scotland	Chapter 2 (p.46)
NHSE 2016[1] RCM 2016[20]	Use of electronic maternity records should be rolled out nationally, to support sharing of data and information between professionals, organisations and with the woman. Commissioners and providers should invest in the right software, equipment and infrastructure to collect data and share information	Chapter 2 (p.46)

Organisation and publication year (see references for full details)	Standard/recommendation	Report section (p.)
RCOG 2016[21] RCM 2016[20] RCoA 2017[35] NHSE 2016[1]	There should be regular multiprofessional development and training, including obstetric and neonatal resuscitation and emergencies, and CTG interpretation, by all who are involved in intrapartum care of the woman and her baby. This training and development should occur in realistic settings. Multi-professional training should be a standard part of professionals' continuous professional development, both in routine situations in emergencies	Chapter 2 (p.47)
DoH 2013[41]	All birthing rooms should include en-suite sanitary facilities. On ante- and postnatal wards single rooms are preferred for privacy and dignity reasons and to reduce noise (postnatally). The preferred maximum number of beds in a multi-bed room is four	Chapter 2 (p.48)
NICE 2014[15]	Offer the woman the opportunity to labour in water for pain relief	Chapter 2 (p.48)
NCT 2009[42]	Provision should be made for fathers to stay outside of visiting hours and overnight where possible [fathers amended to (birth) partners in the NMPA organisational survey]	Chapter 2 (p.48)
DoH 2009[18] WHSSC 2013[43]	Overnight accommodation for parents of babies receiving neonatal care: as a minimum there is one room per intensive care cot	Chapter 2 (p.48)
NHSE 2016[1] RCM 2016 (2)[70]	Every woman should have a midwife, who is part of a small team of 4 to 6 midwives, based in the community who knows the women and family, and can provide continuity throughout the pregnancy, birth and postnatally	Chapter 3 (p.50)
RCM 2016[20] NICE 2015[57]	Staffing establishments should be calculated according to a recognised workforce planning tool that ensures women have continuity of carer and one to one care from a midwife in labour	Chapter 3 (p.52)
NICE 2015[57] NICE 2014[15]	Women in established labour should have supportive one to one care from a midwife	Chapter 3 (p.52)
OAA/AAGBI 2013[59]	As a basic minimum there must be 12 consultant anaesthetist sessions per week to cover emergency work on delivery suite. Scheduled obstetric anaesthetic activities (e.g. elective caesarean section lists, clinic) require additional consultant sessions over and above the 12 for emergency cover	Chapter 3 (p.55)

Appendix 2

Participating trusts and health boards

All NHS trusts and health boards providing labour and birth care on site were eligible to participate. Two trusts which provide community midwifery care only were not included.

England

Airedale NHS Foundation Trust
Ashford and St Peter's NHS Foundation Trust
Barking, Havering and Redbridge NHS Trust
Barnsley Hospital NHS Foundation Trust
Barts Health NHS Trust
Basildon and Thurrock University Hospitals NHS Foundation Trust
Bedford Hospital NHS Trust
Birmingham Women's NHS Foundation Trust
Blackpool Teaching Hospitals NHS Foundation Trust
Bolton NHS Foundation Trust
Bradford Teaching Hospitals NHS Foundation Trust
Brighton and Sussex University Hospitals NHS Trust
Buckinghamshire Healthcare NHS Trust
Burton Hospitals NHS Foundation Trust
Calderdale and Huddersfield NHS Foundation Trust
Cambridge University Hospitals NHS Foundation Trust
Central Manchester NHS Foundation Trust
Chelsea and Westminster Hospital NHS Foundation Trust
Chesterfield Royal Hospital NHS Foundation Trust
City Hospitals Sunderland NHS Foundation Trust
Colchester Hospital University NHS Foundation Trust
Countess of Chester Hospital NHS Foundation Trust
County Durham and Darlington NHS Foundation Trust
Croydon Health Services NHS Trust
Dartford and Gravesham NHS Trust
Derby Teaching Hospitals NHS Foundation Trust
Doncaster and Bassetlaw Hospitals NHS Foundation Trust
Dorset County Hospital NHS Foundation Trust
East and North Hertfordshire NHS Trust
East Cheshire NHS Trust
East Kent Hospitals University Foundation Trust
East Lancashire Hospitals NHS Trust

East Sussex Healthcare NHS Trust
Epsom and St Helier NHS Trust
Frimley Health NHS Foundation Trust
Gateshead Hospitals NHS Trust
George Eliot Hospital NHS Trust
Gloucestershire Hospitals NHS Foundation Trust
Great Western Hospital NHS Foundation Trust
Guy's and St Thomas' NHS Foundation Trust
Hampshire Hospitals NHS Foundation Trust
Harrogate and District NHS Foundation Trust
Heart of England NHS Foundation Trust
Hinchingbrooke Health Care NHS Trust
Homerton University Hospital NHS Foundation Trust
Hull and East Yorkshire Hospitals NHS Trust
Imperial College Healthcare NHS Trust
Ipswich Hospital NHS Trust
Isle of Wight NHS Trust
James Paget University Hospital NHS Foundation Trust
Kettering NHS Foundation Trust
King's College Hospital NHS Foundation Trust
Kingston Hospital NHS Foundation Trust
Lancashire Teaching Hospitals NHS Foundation Trust
Leeds Teaching Hospitals NHS Trust
Lewisham and Greenwich NHS Trust
Liverpool Women's NHS Foundation Trust
London North West Healthcare NHS Trust
Luton and Dunstable University Hospital NHS Foundation Trust
Maidstone and Tunbridge Wells NHS Trust
Medway NHS Foundation Trust
Mid Cheshire Hospitals NHS Foundation Trust
Mid Essex Hospitals NHS Trust
Mid Yorkshire NHS Trust
Milton Keynes University Hospital NHS Foundation Trust
Newcastle upon Tyne Hospitals NHS Trust
Norfolk and Norwich University Hospitals NHS Foundation Trust
North Bristol NHS Trust
North Cumbria University Hospitals NHS Trust
North Middlesex University Hospital NHS Trust
North Tees and Hartlepool NHS Foundation Trust
Northampton General Hospital NHS Trust
Northern Devon Healthcare NHS Trust
Northern Lincolnshire and Goole NHS Trust
Northumbria Healthcare NHS Foundation Trust

Nottingham University Hospitals NHS Trust
Oxford University Hospitals NHS Foundation Trust
Pennine Acute NHS Trust
Peterborough and Stamford NHS Foundation Trust
Plymouth Hospitals NHS Trust
Poole Hospital NHS Foundation Trust
Portsmouth Hospitals NHS Trust
Princess Alexandra Hospital NHS Trust
Queen Elizabeth Hospital King's Lynn NHS Foundation Trust
Royal Berkshire NHS Foundation Trust
Royal Cornwall Hospitals NHS Trust
Royal Free London NHS Foundation Trust
Royal Surrey County Hospital NHS Foundation Trust
Royal United Hospitals NHS Foundation Trust
Royal Wolverhampton NHS Trust
Salisbury NHS Foundation Trust
Sandwell and West Birmingham NHS Trust
Sheffield Teaching Hospitals NHS Foundation Trust
Sherwood Forest Hospitals NHS Foundation Trust
Shrewsbury and Telford Hospital NHS Trust
South Tees Hospitals NHS Trust
South Tyneside NHS Foundation Trust
South Warwickshire NHS Foundation Trust
Southend University NHS Foundation Trust
Southport and Ormskirk Hospital NHS Trust
St George's University Hospitals NHS Foundation Trust
St Helens and Knowsley Teaching Hospitals NHS Trust
Stockport NHS Foundation Trust
Surrey and Sussex NHS Trust
Tameside Hospital NHS Foundation Trust
Taunton and Somerset NHS Foundation Trust
The Dudley Group NHS Foundation Trust
The Hillingdon Hospitals NHS Foundation Trust
The Rotherham NHS Foundation Trust
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust
The Royal Devon and Exeter NHS Foundation Trust
Torbay and South Devon NHS Foundation Trust
United Lincolnshire Hospitals NHS Trust
University College London Hospitals NHS Foundation Trust
University Hospitals of Leicester NHS Trust
University Hospitals of Morecambe Bay NHS Foundation Trust
University Hospital South Manchester NHS Foundation Trust
University Hospitals Bristol NHS Foundation Trust

University Hospitals Coventry and Warwickshire NHS Trust
University Hospitals of North Midlands NHS Trust
University Hospital Southampton NHS Foundation Trust
Walsall Healthcare NHS Trust
Warrington and Halton Hospitals NHS Foundation Trust
West Hertfordshire Hospitals NHS Trust
West Suffolk Hospital NHS Foundation Trust
Western Sussex Hospitals NHS Foundation Trust
Weston Area Health NHS Trust
Whittington Health NHS Trust
Wirral University Teaching Hospitals NHS Trust
Worcestershire Acute Hospitals NHS Trust
Wrightington, Wigan and Leigh NHS Foundation Trust
Wye Valley NHS Trust
Yeovil District Hospital NHS Foundation Trust
York Teaching Hospital NHS Foundation Trust

Scotland

NHS Ayrshire and Arran
NHS Borders
NHS Dumfries and Galloway
NHS Fife
NHS Forth Valley
NHS Grampian
NHS Greater Glasgow and Clyde
NHS Highland
NHS Lanarkshire
NHS Lothian
NHS Orkney
NHS Shetland
NHS Tayside
NHS Western Isles

Wales

Abertawe Bro Morgannwg University Health Board
Aneurin Bevan Health Board
Betsi Cadwaladr University Health Board
Cardiff and Vale University Health Board
Cwm Taf University Health Board
Hywel Dda Health Board
Powys Teaching Health Board

Appendix 3

Summary trust and health board organisational characteristics as reported by respondents during the period January-March 2017

For detailed maternity unit type definitions see chapter 1

OU – obstetric unit
AMU – alongside midwife-led unit
FMU – freestanding midwife-led unit
NNU – neonatal unit
TC – transitional care available within this trust/board? (Y/N)
Declared NNU cots – planned neonatal unit cot capacity if fully staffed
HDU – high dependency (level 2) care unit available within this trust/board? (O=obstetric HDU, G=general HDU, N=no HDU)
ICU – adult intensive (level 3) care unit available within this trust/board? (Y/N)

Birth numbers sources: Hospital Episode Statistics (NHS Digital),[33] SMR02 (Information Services Division Scotland),[71] Patient Episode Database for Wales (NHS Wales Informatics Service)[72]; birth numbers with an asterisk: South West Maternity and Children's Clinical Network[73]*

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England											
Airedale NHS Foundation Trust	2274	Airedale Maternity Unit	OU+AMU	4+4	2	15	G	Y	LNU	12	N
Ashford and St Peter's NHS Foundation Trust	4017	St Peter's Hospital	OU+AMU	9+4	4	39	O	Y	NICU	24	Y
Barking, Havering and Redbridge NHS Trust	8247	Queen's Hospital	OU+AMU	16+8	3	62	O	Y	LNU	25	Y
Barnsley Hospital NHS Foundation trust	2880	Barnsley District General Hospital	OU+AMU	6+3	6	26	O	Y	LNU	14	N
Barts Health NHS Trust	16175	Barkantine Birth Centre	FMU	5	5	0	-	-	-	-	-
		Barking Community Birth Centre	FMU	4	2	0	-	-	-	-	-
		Newham General Hospital	OU+AMU	14+9	10	48	O	Y	LNU	46	Y
		The Royal London Hospital	OU+AMU	16+4	3	47	O	Y	NICU	37	Y
		Whipps Cross Hospital	OU+AMU	12+5	2	44	O	Y	LNU	18	Y
Basildon and Thurrock University Hospitals NHS Foundation Trust	4561	Basildon Hospital	OU+AMU	7+6	2	28	O	Y	LNU	21	N
Bedford Hospital NHS Trust	3036	Bedford Hospital Cygnet Wing	OU+AMU	8+2	5	24	G	Y	SCBU	15	Y
Birmingham Women's NHS Foundation Trust	8060	Birmingham Women's Hospital	OU+AMU	16+5	5	66	O	N	NICU	41	Y
Blackpool Teaching Hospitals NHS Foundation Trust	2986	Blackpool Maternity Unit	OU+AMU	11+4	3	22	O	Y	LNU	16	Y
Bolton NHS Foundation Trust	6679	Princess Anne Maternity Unit	OU+AMU	14+5	2	70	O	Y	NICU	38	N
Bradford Teaching Hospitals NHS Foundation Trust	5698	Bradford Women's and Newborn Unit	OU+AMU	12+7	3	69	O	Y	NICU	29	Y
Brighton and Sussex University Hospitals NHS Trust	5641	Princess Royal Hospital	OU	8	2	24	O	Y	SCBU	11	Y
		Royal Sussex County Hospital	OU	11	3	27	O	Y	NICU	27	Y
Buckinghamshire Healthcare NHS Trust	5491	Wycombe Birth Centre	FMU	4	2	0	-	-	-	-	-
		Stoke Mandeville Hospital	OU+AMU	12+4	2	47	O	Y	LNU	21	N
Burton Hospitals NHS Foundation Trust	2224	Queen's Hospital Burton	OU	8	1	54	O	Y	SCBU	14	Y
		Samuel Johnson Birth Centre Litchfield	FMU	3	3	3	-	-	-	-	-
Calderdale and Huddersfield NHS Foundation Trust	5401	Huddersfield Birth Centre	FMU	6	2	0	-	-	-	-	-
		Calderdale Royal Hospital	OU+AMU	11+7	3	27	O	Y	LNU	24	N
Cambridge University Hospitals NHS Foundation Trust	5754	Rosie Maternity Hospital	OU+AMU	16+10	11	49	O	Y	NICU	40	Y
Central Manchester NHS Foundation Trust	9157	Saint Mary's Birth Centre at Salford	FMU	6	1	0	-	-	-	-	-
		Saint Mary's Hospital	OU+AMU	19+9	3	80	O	Y	NICU	69	N

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England (continued)											
Chelsea and Westminster Hospital NHS Foundation Trust	11004	Chelsea and Westminster Hospital	OU+AMU	9+7	4	49	O	Y	NICU	37	Y
		West Middlesex Hospital	OU+AMU	12+4	3	47	G	Y	SCBU	21	Y
Chesterfield Royal Hospital NHS Foundation Trust	2828	Chesterfield Birth Centre	OU+AMU	8+4	4	23	G	Y	LNU	12	N
City Hospitals Sunderland NHS Foundation Trust	3178	Sunderland Royal Hospital	OU	21	1	13	O	Y	NICU	20	N
Colchester Hospital University NHS Foundation Trust	3700	Clacton Midwifery Led Unit	FMU	2	1	0	-	-	-	-	-
		Harwich Midwifery Led Unit	FMU	2	1	0	-	-	-	-	-
		Colchester Hospital	OU+AMU	8+4	5	28	G	Y	LNU	18	N
Countess of Chester Hospital NHS Foundation Trust	3043	Countess of Chester Hospital	OU+AMU	8+2	3	36	O	Y	LNU	22	Y
County Durham and Darlington NHS Foundation Trust	5452	Darlington Memorial Hospital	OU	10	1	23	O	Y	SCBU	12	Y
		The University Hospital of North Durham	OU	12	1	23	O	Y	SCBU	12	Y
Croydon Health Services NHS Trust	3833	Croydon Health Services Maternity Unit	OU+AMU	11+2	3	39	G	Y	LNU	26	Y
Dartford and Gravesham NHS Trust	5037	Darent Valley Hospital	OU+AMU	9+3	3	40	O	Y	SCBU	22	Y
Derby Teaching Hospitals NHS Foundation Trust	6113	Royal Derby Hospital	OU+AMU	14+4	2	47	O	Y	LNU	24	N
Doncaster and Bassetlaw Hospitals NHS Foundation Trust	4897	Bassetlaw District General	OU	6	1	18	G	Y	SCBU	8	N
		Doncaster Royal Infirmary	OU	9	1	40	O	Y	LNU	18	N
Dorset County Hospital NHS Foundation Trust	1836	Dorset County Hospital Maternity Unit	OU	7	1	29	G	Y	SCBU	12	N
East Cheshire NHS Trust	1784	Macclesfield Birth Centre	OU+AMU	3+2	2	20	G	Y	LNU	9	Y
East Kent Hospitals University Foundation Trust	6892	Queen Elizabeth the Queen Mother Hospital	OU+AMU	8+4	3	22	G	Y	SCBU	14	N
		William Harvey Hospital	OU+AMU	10+2	3	34	G	Y	NICU	25	N
East Lancashire Hospitals NHS Trust	6412	Blackburn Birth Centre	FMU	4	4	0	-	-	-	-	-
		Rossendale Birth Centre	FMU	2	1	0	-	-	-	-	-
		Lancashire Women and Newborn Centre	OU+AMU	20+7	5	54	O	N	NICU	34	Y
East Sussex Healthcare NHS Trust	3266	Eastbourne Midwifery Unit	FMU	2	1	0	-	-	-	-	-
		Conquest Obstetric Led Maternity Unit	OU	10	1	39	G	Y	SCBU	12	Y

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England (continued)											
East and North Hertfordshire NHS Trust	5581	Diamond Jubilee Maternity Unit, Lister Hospital	OU+AMU	11+7	5	51	O	Y	LNU	30	Y
Epsom and St Helier NHS Trust	4818	Epsom Hospital	OU+AMU	6+2	3	20	O	N	SCBU	8	Y
		St Helier Hospital	OU+AMU	8+3	3	43	O	Y	LNU	18	Y
Frimley Health NHS Foundation Trust	9801	Frimley Park Hospital	OU+AMU	12+4	2	44	G	Y	LNU	16	Y
		Wexham Park Hospital	OU+AMU	10+6	3	39	G	Y	LNU	21	N
Gateshead Hospitals NHS Trust	1786	Gateshead Hospitals Queen Elizabeth Maternity Unit	OU	6	1	40	G	Y	SCBU	8	Y
George Eliot Hospital NHS Trust	2078	George Eliot Maternity Unit	OU	10	2	23	G	Y	SCBU	12	Y
Gloucestershire Hospitals NHS Foundation Trust	6456*	Aveta Birth Unit	FMU	5	2	0	-	-	-	-	-
		Stroud Maternity Unit	FMU	2	2	6	-	-	-	-	-
		The Gloucester Women's Centre, Gloucester Royal Hospital	OU+AMU	12+6	3	46	O	Y	LNU	26	Y
Great Western Hospital NHS Foundation Trust	4364*	Great Western Hospital	OU+AMU	12+6	3	30	G	Y	LNU	18	N
Guy's and St Thomas' NHS Foundation Trust	6702	St Thomas' Hospital	OU+AMU	15+7	2	57	O	Y	NICU	50	Y
Hampshire Hospitals NHS Foundation Trust	5405	Hampshire Hospitals Maternity Centre, Andover War Memorial Hospital	FMU	2	1	0	-	-	-	-	-
		Basingstoke and North Hampshire Hospital	OU	9	2	27	O	Y	LNU	14	N
		Royal Hampshire County Hospital	OU	8	2	31	G	Y	LNU	12	N
Harrogate and District NHS Foundation Trust	1872	Harrogate District Hospital Maternity Unit	OU	7	1	20	G	Y	SCBU	9	N
Heart of England NHS Foundation Trust	9976	Netherbrook Birth Centre	FMU	3	2	0	-	-	-	-	-
		Princess of Wales Women's Unit, Heartlands Hospital	OU+AMU	13+3	2	64	O	Y	NICU	37	Y
		Good Hope Hospital	OU	12	2	31	O	Y	SCBU	20	N
Hinchingbrooke Health Care NHS Trust	2276	The Park Maternity Centre, Hinchingbrooke Hospital	OU+AMU	8+4	1	25	N	Y	SCBU	12	N
Homerton University Hospital NHS Foundation Trust	5948	Homerton Maternity Unit	OU+AMU	13+4	5	41	O	Y	NICU	46	Y

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England (continued)											
Hull and East Yorkshire Hospitals NHS Trust	5368	Women and Children's Hospital	OU	16	1	59	O	Y	NICU	26	Y
Imperial College Healthcare NHS Trust	9622	Queen Charlotte's and Chelsea Hospital	OU+AMU	16+7	4	53	O	Y	NICU	24	Y
		St Mary's Hospital	OU+AMU	10+5	4	35	O	Y	LNU	22	Y
Ipswich Hospital NHS Trust	3671	Gilchrist Birthing Unit	FMU	1	1	0	-	-	-	-	-
		Ipswich Hospital NHS Trust	OU+AMU	6+3	2	42	G	Y	LNU	18	N
Isle of Wight NHS Trust	1192	Maternity Unit St Mary's Hospital	OU	5	1	16	O	Y	LNU	8	Y
James Paget University Hospital NHS Foundation Trust	2029	James Paget University Hospital	OU+AMU	7+3	3	24	G	Y	SCBU	9	N
Kettering NHS Foundation Trust	3476	Rockingham Wing, Kettering General Hospital	OU	9	2	33	O	Y	LNU	18	N
King's College Hospital NHS Foundation Trust	9703	Princess Royal University Hospital	OU+AMU	10+6	4	34	O	Y	SCBU	12	N
		King's College Hospital	OU	10	2	50	O	Y	NICU	36	N
Kingston Hospital NHS Foundation Trust	5670	Kingston Maternity Unit	OU+AMU	8+3	3	56	O	Y	LNU	18	Y
Lancashire Teaching Hospitals NHS Foundation Trust	4617	Chorley Birth Centre	FMU	3	2	0	-	-	-	-	-
		Royal Preston Hospital	OU+AMU	12+4	5	51	O	Y	NICU	28	Y
Leeds Teaching Hospitals NHS Trust	9610	Leeds General Infirmary	OU	13	3	41	O	Y	NICU	34	Y
		St James University Hospital	OU	10	1	42	O	Y	SCBU	21	Y
Lewisham and Greenwich NHS Trust	8465	Queen Elizabeth Hospital	OU+AMU	10+4	5	45	G	Y	LNU	17	N
		University Hospital Lewisham	OU+AMU	11+5	4	42	G	Y	LNU	20	N
Liverpool Women's NHS Foundation Trust	8366	Liverpool Women's Hospital	OU+AMU	18+11	4	50	O	N	NICU	44	Y
London North West Healthcare NHS Trust	5522	Northwick Park Hospital	OU+AMU	11+6	3	43	G	Y	LNU	28	N
Luton and Dunstable University Hospital NHS Foundation Trust	5235	Luton and Dunstable University Hospital	OU+AMU	11+4	1	55	G	Y	NICU	37	Y
Maidstone and Tunbridge Wells NHS Trust	5593	Crowborough Birthing Centre	FMU	2	2	4	-	-	-	-	-
		Maidstone Birth Centre	FMU	2	2	4	-	-	-	-	-
		Tunbridge Wells Hospital at Pembury	OU	15	2	45	O	Y	LNU	18	Y
Medway NHS Foundation Trust	4956	Medway Maritime Hospital	OU+AMU	11+4	3	47	O	Y	NICU	28	Y
Mid Cheshire Hospitals NHS Foundation Trust	3021	Leighton Hospital	OU+AMU	8+3	4	27	G	Y	NICU	15	Y

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England (continued)											
Mid Essex Hospitals NHS Trust	4517	St Peter's Hospital, Maldon	FMU	2	1	4	-	-	-	-	-
		William Julian Courtauld Birthing Unit	FMU	2	2	3	-	-	-	-	-
		Broomfield Hospital	OU+AMU	10+5	0	28	G	Y	LNU	16	N
Mid Yorkshire NHS Trust	6068	Bronte Birth Centre	FMU	4	2	0	-	-	-	-	-
		Friarwood Birth Centre	FMU	6	2	0	-	-	-	-	-
		Pinderfields Hospital	OU+AMU	13+6	4	37	O	Y	LNU	22	Y
Milton Keynes University Hospital NHS Foundation Trust	3766	Milton Keynes Maternity Unit	OU	11	2	41	G	Y	LNU	17	Y
Newcastle upon Tyne Hospitals NHS Trust	6700	Royal Victoria Infirmary	OU+AMU	12+12	6	56	O	Y	NICU	38	Y
Norfolk and Norwich University Hospitals NHS Foundation Trust	5715	Norfolk and Norwich University Hospital	OU+AMU	15+4	4	46	G	Y	NICU	37	Y
North Bristol NHS Trust	6450*	Cossham Birth Centre	FMU	4	4	0	-	-	-	-	-
		Southmead Hospital Maternity Unit	OU+AMU	11+3	3	55	O	Y	NICU	34	Y
North Cumbria University Hospitals NHS Trust	2975	Penrith Birthing Centre	FMU	1	1	0	-	-	-	-	-
		Cumberland Infirmary	OU	10	1	13	G	Y	SCBU	12	N
		West Cumberland Hospital	OU	6	1	11	G	Y	SCBU	9	N
North Middlesex University Hospital NHS Trust	5234	North Middlesex Maternity Unit	OU+AMU	19+8	6	30	O	Y	LNU	22	Y
North Tees and Hartlepool NHS Foundation Trust	3011	Birthing Centre, University Hospital of Hartlepool	FMU	4	1	0	-	-	-	-	-
		University Hospital of North Tees	OU+AMU	10+4	1	30	G	Y	NICU	22	Y
Northampton General Hospital NHS Trust	4556	Northampton Maternity Unit	OU+AMU	8+4	4	35	O	Y	LNU	20	Y
Northern Devon Healthcare NHS Trust	1488*	North Devon Hospital	OU	6	2	18	G	Y	SCBU	8	Y
Northern Lincolnshire and Goole NHS Trust	4389	Goole Midwifery Suite	FMU	1	1	0	-	-	-	-	-
		Department of Family Services Maternity Unit	OU	18	1	15	O	Y	LNU	12	Y
		Scunthorpe General Hospital	OU	8	1	26	O	Y	LNU	10	Y
Northumbria Healthcare NHS Foundation Trust	3041	Berwick Maternity Unit	FMU	1	1	0	-	-	-	-	-
		Hexham Maternity Unit	FMU	2	1	7	-	-	-	-	-
		Hillcrest Maternity Unit	FMU	1	1	7	-	-	-	-	-

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England (continued)											
		Northumbria Specialist Emergency Care Hospital	OU+AMU	7+7	2	20	O	Y	SCBU	14	Y
Nottingham University Hospitals NHS Trust	9607	Nottingham City Hospital	OU+AMU	13+4	5	54	O	Y	NICU	24	Y
		Queen's Medical Centre	OU+AMU	13+4	3	46	O	Y	NICU	17	Y
Oxford University Hospitals NHS Foundation Trust	8287	Cotswold Maternity Unit	FMU	2	2	0	-	-	-	-	-
		Horton General Hospital	FMU	2	1	0	-	-	-	-	-
		Wallingford Midwife-led Unit	FMU	3	2	2	-	-	-	-	-
		Wantage Midwife-led Unit	FMU	2	1	1	-	-	-	-	-
		John Radcliffe Hospital	OU+AMU	15+5	4	86	O	Y	NICU	44	N
Pennine Acute NHS Trust	9372	North Manchester General Hospital	OU+AMU	10+4	3	51	O	Y	LNU	22	N
		The Royal Oldham Hospital	OU+AMU	10+5	4	54	O	Y	NICU	37	N
Peterborough and Stamford NHS Foundation Trust	4974	Peterborough City Hospital	OU+AMU	13+5	1	37	G	Y	LNU	20	Y
Plymouth Hospitals NHS Trust	4496*	Plymouth Hospital	OU	10	1	45	O	Y	NICU	20	Y
Poole Hospital NHS Foundation Trust	4446	St Mary's Maternity Unit, Poole	OU+AMU	8+5	5	46	O	N	LNU	20	Y
Portsmouth Hospitals NHS Trust	5827	Blake Maternity Centre	FMU	2	1	0	-	-	-	-	-
		Grange Maternity Centre	FMU	2	1	0	-	-	-	-	-
		Portsmouth Maternity Centre	FMU	2	1	0	-	-	-	-	-
		Queen Alexandra Hospital	OU+AMU	14+4	3	47	G	Y	NICU	31	N
Princess Alexandra Hospital NHS Trust	4185	Princess Alexandra Maternity Unit	OU+AMU	9+3	4	48	G	Y	LNU	16	Y
Queen Elizabeth Hospital King's Lynn NHS Foundation Trust	2300	Queen Elizabeth Hospital, King's Lynn	OU+AMU	9+3	3	24	G	Y	LNU	12	Y
Royal Berkshire NHS Foundation Trust	5354	Royal Berkshire Hospital Maternity Unit	OU+AMU	13+4	2	60	G	Y	LNU	21	Y
Royal Cornwall Hospitals NHS Trust	4446	Helston Birth Centre	FMU	1	1	0	-	-	-	-	-
		Penrice Birth Centre	FMU	2	1	3	-	-	-	-	-
		St Mary's Birth Centre	FMU	1	0	0	-	-	-	-	-
		Royal Cornwall Hospital	OU	9	0	37	O	Y	LNU	20	Y
Royal Free London NHS Foundation Trust	6227	Edgware Birth Centre	FMU	6	3	0	-	-	-	-	-
		Barnet Hospital	OU+AMU	13+5	4	48	O	Y	LNU	30	N

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England (continued)											
		The Royal Free Hospital	OU+AMU	5+3	1	31	O	Y	SCBU	14	N
Royal Surrey County Hospital NHS Foundation Trust	3086	Royal Surrey County Hospital	OU+AMU	10+2	3	45	O	Y	SCBU	11	Y
Royal United Hospitals NHS Foundation Trust	4885	Chippenham Birthing Centre	FMU	3	2	4	-	-	-	-	-
		Frome Birthing Centre	FMU	2	1	0	-	-	-	-	-
		Paulton Birth Centre	FMU	2	1	5	-	-	-	-	-
		Trowbridge Birthing Centre	FMU	2	2	0	-	-	-	-	-
		Princess Anne Wing, Royal United Hospital	OU	9	2	40	O	Y	LNU	21	N
Royal Wolverhampton NHS Trust	4555	New Cross Hospital	OU+AMU	10+5	5	34	O	Y	NICU	26	Y
Salisbury NHS Foundation Trust	2361*	Salisbury Maternity Unit	OU	10	2	15	G	Y	LNU	10	Y
Sandwell and West Birmingham NHS Trust	5553	Halcyon Midwife-led Unit	FMU	3	3	0	-	-	-	-	-
		City Hospital Maternity Unit	OU+AMU	12+5	2	42	O	Y	LNU	29	Y
Sheffield Teaching Hospitals NHS Foundation Trust	6936	Jessop Wing	OU+AMU	9+7	1	70	O	Y	NICU	44	Y
Sherwood Forest Hospitals NHS Foundation Trust	3463	Sherwood Birthing Unit	OU	12	1	32	O	Y	LNU	14	N
Shrewsbury and Telford Hospital NHS Trust	4717	Bridgnorth Midwife Led Unit	FMU	2	1	4	-	-	-	-	-
		Ludlow Midwife Led Unit	FMU	2	0	3	-	-	-	-	-
		Oswestry Midwife Led Unit	FMU	2	1	6	-	-	-	-	-
		Shrewsbury Midwife Led Unit	FMU	2	1	13	-	-	-	-	-
		Women and Children's Centre, Princess Royal Hospital	OU+AMU	13+4	2	40	G	Y	LNU	22	Y
South Tees Hospitals NHS Trust	4934	Friarage Maternity Centre	FMU	5	1	0	-	-	-	-	-
		James Cook University Hospital	OU+AMU	12+7	0	43	O	Y	NICU	32	Y
South Tyneside NHS Foundation Trust	1316	South Tyneside District Hospital	OU	9	1	18	G	Y	SCBU	6	N
South Warwickshire NHS Foundation Trust	2606	South Warwickshire Maternity Unit	OU	7	1	33	O	Y	SCBU	11	N
Southend University NHS Foundation Trust	3754	Southend University Hospital	OU+AMU	6+4	3	31	O	Y	LNU	16	Y
Southport and Ormskirk Hospital NHS Trust	2497	Ormskirk Maternity Unit	OU	7	1	27	O	N	LNU	12	Y
St George's University Hospitals NHS Foundation Trust	5153	St George's Hospital	OU+AMU	9+5	2	44	O	Y	NICU	40	Y
St Helens and Knowsley Teaching Hospitals NHS Trust	3820	Whiston Maternity Unit	OU	12	1	37	O	Y	LNU	15	N

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England (continued)											
Stockport NHS Foundation Trust	3335	Stepping Hill Hospital	OU+AMU	10+4	4	28	O	Y	LNU	17	Y
Surrey and Sussex NHS Trust	4628	East Surrey Hospital	OU+AMU	8+3	7	42	O	N	LNU	20	Y
Tameside Hospital NHS Foundation Trust	2369	Tameside Hospital	OU	7	1	32	G	Y	LNU	13	Y
Taunton and Somerset NHS Foundation Trust	3267*	Mary Stanley Midwifery Led Unit	FMU	2	2	0	-	-	-	-	-
		Musgrove Park Hospital	OU+AMU	9+3	2	31	O	Y	LNU	18	N
The Dudley Group NHS Foundation Trust	4342	Russells Hall Maternity Unit	OU+AMU	12+5	1	16	O	Y	LNU	18	Y
The Hillingdon Hospitals NHS Foundation Trust	4560	Duchess of Kent Maternity Unit	OU+AMU	11+4	1	41	O	Y	LNU	18	Y
The Rotherham NHS Foundation Trust	2604	The Rotherham Maternity Unit	OU	14	1	24	O	Y	SCBU	14	N
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	387	The Royal Bournemouth Birth Centre	FMU	2	2	0	-	-	-	-	-
The Royal Devon and Exeter NHS Foundation Trust	4129*	Honiton Birth Centre	FMU	1	1	6	-	-	-	-	-
		Okehampton Birth Centre	FMU	1	1	3	-	-	-	-	-
		Tiverton Birth Centre	FMU	1	1	5	-	-	-	-	-
		Centre for Women's Health, RD & E Wonford	OU+AMU	10+3	3	46	G	Y	LNU	26	Y
Torbay and South Devon NHS Foundation Trust	2369*	Whitelake Midwife-led Unit	FMU	2	1	0	-	-	-	-	-
		Torbay Hospital	OU	8	1	20	G	Y	SCBU	10	N
United Lincolnshire Hospitals NHS Trust	6397	Lincoln County Hospital	OU	11	1	34	O	Y	LNU	10	Y
		Pilgrim Hospital, Boston	OU	8	1	18	O	Y	SCBU	8	Y
University College London Hospitals NHS Foundation Trust	6470	Elizabeth Garrett Anderson Wing, UCLH	OU+AMU	12+7	3	56	O	Y	NICU	32	Y
University Hospital South Manchester NHS Foundation Trust	4321	Wythenshawe Hospital	OU+AMU	9+5	6	45	O	Y	NICU	20	Y
University Hospital Southampton NHS Foundation Trust	5398	New Forest Birth Centre	FMU	2	2	6	-	-	-	-	-
		Princess Anne Hospital	OU+AMU	13+6	3	47	O	Y	NICU	37	Y
University Hospitals Bristol NHS Foundation Trust	5121*	St Michael's Hospital	OU+AMU	13+4	3	38	O	N	NICU	31	Y
University Hospitals Coventry and Warwickshire NHS Trust	6113	University Hospital Coventry	OU+AMU	11+5	5	54	O	Y	NICU	32	Y

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
England (continued)											
University Hospitals of Leicester NHS Trust	10409	St Mary's Birth Centre, Melton Mowbray	FMU	2	2	8	-	-	-	-	-
		Leicester General Hospital	OU+AMU	9+4	2	33	O	Y	SCBU	12	N
		Leicester Royal Infirmary	OU+AMU	10+6	2	65	O	Y	NICU	28	N
University Hospitals of Morecambe Bay NHS Foundation Trust	3117	Helme Chase Midwife-led Unit	FMU	5	1	0	-	-	-	-	-
		Furness General Hospital	OU	11	1	23	G	Y	SCBU	4	Y
		Royal Lancaster Infirmary	OU	7	1	23	G	Y	LNU	10	N
University Hospitals of North Midlands NHS Trust	6342	County Hospital	FMU	2	1	0	-	-	-	-	-
		Royal Stoke Hospital	OU+AMU	13+11	1	55	O	Y	NICU	26	Y
Walsall Healthcare NHS Trust	4965	Walsall Midwifery Led Unit	FMU	3	3	0	-	-	-	-	-
		Walsall Manor Maternity Unit	OU	9	1	39	O	Y	LNU	15	Y
Warrington and Halton Hospitals NHS Foundation Trust	2870	Warrington Maternity Unit	OU+AMU	7+3	2	22	G	Y	LNU	18	N
West Hertfordshire Hospitals NHS Trust	5095	Watford General Hospital	OU+AMU	12+8	2	52	O	Y	LNU	24	Y
West Suffolk Hospital NHS Foundation Trust	2537	West Suffolk Hospital	OU+AMU	8+4	3	28	O	Y	SCBU	12	N
Western Sussex Hospitals NHS Foundation Trust	5065	St Richard's Hospital	OU+AMU	8+2	3	27	G	Y	LNU	12	Y
		Worthing Hospital	OU	8	2	27	G	Y	SCBU	12	Y
Weston Area Health NHS Trust	229*	Ashcombe Birth Centre	FMU	2	1	10	-	-	-	-	-
Whittington Health NHS Trust	3868	Whittington Hospital	OU+AMU	7+5	7	38	O	N	LNU	23	Y
Wirral University Teaching Hospitals NHS Trust	3341	Wirral Women and Children's Hospital	OU+AMU	9+5	3	32	O	Y	NICU	24	Y
Worcestershire Acute Hospitals NHS Trust	5711	Worcestershire Royal Hospital	OU+AMU	10+4	4	51	O	Y	LNU	18	Y
Wrightington, Wigan and Leigh NHS Foundation Trust	2741	Wigan Maternity Unit	OU	8	1	28	O	Y	LNU	14	N
Wye Valley NHS Trust	1733	Hereford County Hospital	OU	5	1	17	G	Y	SCBU	12	Y
Yeovil District Hospital NHS Foundation Trust	1523	Yeovil Maternity Unit	OU	5	1	17	G	Y	SCBU	10	Y
York Teaching Hospital NHS Foundation Trust	5031	Scarborough Hospital	OU+AMU	5+3	4	18	G	Y	SCBU	8	N
		York Hospital	OU	12	2	32	O	Y	LNU	15	N

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
Scotland											
NHS Ayrshire and Arran	3415	Community Maternity Unit, Arran War Memorial Hospital	FMU	1	0	2	-	-	-	-	-
		Ayrshire Maternity Unit	OU+AMU	7+8	1	34	O	Y	NICU	20	Y
NHS Borders	1048	Borders General Hospital Maternity Unit	OU	5	1	16	G	Y	SCBU	8	Y
NHS Dumfries and Galloway	1252	Clenoch Birthing Centre	FMU	2	0	0	-	-	-	-	-
		Cresswell Maternity Wing	OU	10	1	16	G	Y	LNU	11	Y
NHS Fife	3318	Victoria Hospital	OU+AMU	9+9	3	24	O	Y	NICU	20	Y
NHS Forth Valley	3089	Forth Valley Royal Hospital	OU	16	2	25	O	Y	LNU	20	N
NHS Grampian	6371	Peterhead Community Maternity Unit	FMU	2	0	0	-	-	-	-	-
		Aberdeen Maternity Hospital	OU+AMU	9+4	1	74	O	Y	NICU	29	N
		Dr Gray's Hospital	OU	4	1	22	G	N	SCBU	4	N
NHS Greater Glasgow and Clyde	14858	Inverclyde Community Maternity Unit	FMU	2	1	0	-	-	-	-	-
		Vale of Leven Community Maternity Unit	FMU	2	1	0	-	-	-	-	-
		Royal Alexandra Hospital	OU+AMU	9+3	1	32	O	Y	LNU	16	N
		Princess Royal Maternity	OU	12	1	58	O	Y	NICU	28	Y
		Queen Elizabeth University Hospital Maternity Unit	OU	12	1	57	O	Y	NICU	50	N
NHS Highland	2189	Campbeltown Maternity Unit	FMU	1	0	0	-	-	-	-	-
		Community Maternity Unit, Victoria Hospital, Rothesay	FMU	2	0	0	-	-	-	-	-
		Community Midwifery Unit, Belford Hospital	FMU	1	1	0	-	-	-	-	-
		Cowal Community Maternity Unit	FMU	1	1	0	-	-	-	-	-
		Dr Mackinnon Memorial Hospital	FMU	1	0	0	-	-	-	-	-
		Henderson Maternity Unit, Caithness General Hospital	FMU	2	1	0	-	-	-	-	-
		Lochgilphead Community Maternity Unit, Mid Argyll Community Hospital	FMU	1	1	0	-	-	-	-	-

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
Scotland (continued)											
		Oban Community Maternity Unit, Lorn and Islands District General Hospital	FMU	1	1	0	-	-	-	-	-
		Raigmore Hospital	OU	6	1	23	O	Y	LNU	11	Y
NHS Lanarkshire	4414	Wishaw General Hospital	OU	14	2	35	O	Y	NICU	29	Y
NHS Lothian	9277	Simpson Centre for Reproductive Health, Edinburgh Royal Infirmary	OU+AMU	13+6	8	60	O	Y	NICU	39	N
		St John's Hospital, Livingston	OU	9	3	30	N	Y	LNU	10	N
NHS Orkney	123	Maternity Unit Balfour Hospital	FMU	4	0	0	-	-	-	-	-
NHS Shetland	125	Community Maternity Unit, Gilbert Bain Memorial Hospital	FMU	2	1	5	-	-	-	-	-
NHS Tayside	4179	Arbroath Community Maternity Unit	FMU	2	2	0	-	-	-	-	-
		Community Maternity Unit, Montrose Royal Infirmary	FMU -	2	1	0	-	-	-	-	
		Community Midwife Unit, Perth	FMU	3	2	6	-	-	-	-	-
		Ninewells Hospital	OU+AMU	7+6	2	63	O	Y	NICU	19	Y
NHS Western Isles	183	Uist and Barra Hospital	FMU	1	0	0	-	-	-	-	-
		Western Isles Hospital Maternity Unit	OU	2	1	8	G	N	None		
Wales											
Abertawe Bro Morgannwg University Health Board	5553	Neath Port Talbot Birth Centre	FMU	7	1	0	-	-	-	-	-
		Princess of Wales Hospital	OU+AMU	4+2	2	26	G	Y	LNU	12	N
		Singleton Hospital	OU+AMU	10+3	1	45	O	N	NICU	22	N
Aneurin Bevan Health Board	5880	Ysbyty Aneurin Bevan	FMU	1	1	0	-	-	-	-	-
		Ysbyty Ystrad Fawr	FMU	3	2	3	-	-	-	-	-
		Nevill Hall Hospital	OU+AMU	4+2	1	20	O	Y	LNU	10	Y
		Royal Gwent Hospital	OU+AMU	8+4	1	53	O	Y	NICU	20	Y
Betsi Cadwaladr University Health Board	5917	Bryn Beryl Hospital	FMU	1	0	0	-	-	-	-	-
		Denbigh Hospital	FMU	1	0	0	-	-	-	-	-
		Dolgellau Hospital	FMU	1	1	0	-	-	-	-	-
		Tywyn Hospital	FMU	1	0	0	-	-	-	-	-

NHS trust or board	Trust/ board births 2015/16	Site or unit name	Unit type(s) on site	Birth rooms	Pools	Ante- and postnatal	HDU on site beds total	ICU on site	NNU design-ation	Declared NNU cots	TC on site total
Wales (continued)											
		Wrexham Maelor	OU+AMU	7+2	2	38	G	Y	SCBU	16	Y
		Ysbyty Glan Clwyd	OU+AMU	6+2	1	30	G	Y	SCBU	17	Y
		Ysbyty Gwynedd	OU+AMU	8+2	2	28	O	Y	SCBU	11	N
Cardiff and Vale University Health Board	5685	University Hospital of Wales	OU+AMU	11+4	5	54	O	Y	NICU	28	Y
Cwm Taf University Health Board	3828	Prince Charles Hospital	OU+AMU	7+3	1	23	O	Y	SCBU	10	Y
		Royal Glamorgan Hospital	OU+AMU	5+2	1	23	O	Y	LNU	9	Y
Hywel Dda Health Board	3190	Withybush General Hospital	FMU	3	1	0	-	-	-	-	-
		Glangwili Hospital	OU+AMU	5+4	1	42	O	Y	SCBU	12	Y
		Gwenllian Maternity Unit, Bronglais Hospital	OU+AMU	2+2	0	9	O	Y	SCBU	2	Y
Powys Teaching Health Board	231	Brecon War Memorial Hospital	FMU	1	1	1	-	-	-	-	-
		Knighton Hospital	FMU	1	1	1	-	-	-	-	-
		Llandrindod War Memorial Hospital	FMU	2	1	2	-	-	-	-	-
		Llanidloes and District War Memorial Hospital	FMU	1	1	1	-	-	-	-	-
		Montgomery County Infirmary	FMU	1	1	1	-	-	-	-	-
		Victoria Memorial Hospital, Welshpool	FMU	1	1	2	-	-	-	-	-

Appendix 4

Available specialist services and facilities detail

See NMPA website for trust/board level and site level results.

Support services by specialist midwives, public health and allied health professionals

	FMU	OU and OU+AMU number of births on site						
	(n=96)	<2500 (n=43)	2500–3999 (n=57)	4000–5999 (n=69)	≥6000 (n=16)	Total all sites (n=281)	Overall availability (all sites)	Overall availability (sites with OU)
Weight management support	29	16	26	31	4	**106**	38%	42%
Smoking cessation support	54	31	42	47	11	**185**	66%	71%
Support for young parents	30	24	35	49	12	**150**	53%	65%
Support for mental health needs	48	25	43	54	14	**184**	65%	74%
Bereavement support	32	29	46	63	14	**184**	65%	82%
Substance misuse specialist	39	34	41	48	13	**175**	62%	74%
Safeguarding specialist	54	40	57	68	16	**235**	84%	98%
None of the above	36	2	0	0	0	**38**	14%	1%

Medical services and facilities on sites with an obstetric unit

	<2500 (n=43)	2500–3999 (n=57)	4000–5999 (n=69)	≥6000 (n=16)	Total (n=185)	Overall availability (sites with OU)
Early pregnancy unit						
Available 24/7 on site	1	3	4	5	13	7%
Available not 24/7	38	54	63	10	165	89%
Not available	4	0	2	1	7	4%
Maternity day assessment unit						
Available 24/7 on site	7	10	16	5	38	21%
Available not 24/7	35	47	51	11	144	78%
Not available	1	0	2	0	3	2%
Dedicated obstetric theatre						
Available 24/7 on site	36	53	68	15	172	93%
Available not 24/7	4	4	1	1	10	5%
Not available	3	0	0	0	3	2%
General theatre						
Available 24/7 on site	39	51	65	14	169	91%
Available not 24/7	4	6	2	2	14	8%
Not available	0	0	2	0	2	1%
Consultant anaesthetist						
Available 24/7 on site	19	29	34	6	88	48%
Available not 24/7	24	28	35	10	97	52%
Not available	0	0%				
Consultant obstetric anaesthetist						
Available 24/7 on site	12	22	23	6	63	34%
Available not 24/7	18	31	41	10	100	54%
Not available	13	4	5	0	22	12%
Blood transfusion lab and consultant advice						
Available 24/7 on site	28	37	44	11	120	65%
Available not 24/7	14	20	24	5	63	34%
Not available	1	0	1	0	2	1%
Microbiology lab and consultant advice						
Available 24/7 on site	22	33	42	9	106	57%
Available not 24/7	16	24	25	7	72	39%
Not available	5	0	2	0	7	4%
Cell salvage						
Available 24/7 on site	16	25	41	11	93	50%
Available not 24/7	12	21	22	3	58	31%
Not available	15	11	6	2	34	18%

	<2500 (n=43)	2500–3999 (n=57)	4000–5999 (n=69)	≥6000 (n=16)	Total (n=185)	Overall availability (sites with OU)
Interventional radiology						
Available 24/7 on site	2	5	18	6	31	17%Available
not 24/7	16	30	33	7	86	46%
Not available	25	22	18	3	68	37%
CT scanning and access to reporting						
Available 24/7 on site	21	33	34	11	99	54%
Available not 24/7	22	24	33	4	83	45%
Not available	0	0	2	1	3	2%
MRI scanning and access to reporting						
Available 24/7 on site	14	23	26	11	74	40%
Available not 24/7	27	34	39	3	103	56%
Not available	2	0	4	2	8	4%
Echocardiography (adult)						
Available 24/7 on site	17	18	26	7	68	37%
Available not 24/7	22	39	41	8	110	59%
Not available	3	0	2	1	6	3%
Acute medical cover (medical registrar or more senior)						
Available 24/7 on site	36	49	65	13	163	88%
Available not 24/7	7	8	3	2	20	11%
Not available	0	0	1	1	2	1%
Urology input						
Available 24/7 on site	8	10	13	6	37	20%
Available not 24/7	27	43	52	9	131	71%
Not available	8	4	4	1	17	9%
Consultant colorectal or general surgeon						
Available 24/7 on site	12	15	18	8	53	29%
Available not 24/7	30	41	50	7	128	69%
Not available	1	1	1	1	4	2%

	<2500 (n=43)	2500–3999 (n=57)	4000–5999 (n=69)	≥6000 (n=16)	Total (n=185)	Overall availability (sites with OU)
Dedicated obstetric HDU	13	40	55	16	124	67%
General adult HDU	41	56	66	14	177	96%
Adult ICU	40	54	65	14	173	94%
Mother and baby unit	1	3	5	1	10	5%
Bariatric equipment including in theatre	39	54	66	15	174	94%
Extracorporeal membrane oxygenation (ECMO)	3	3	7	2	15	8%
Maternal-fetal medicine sub-specialist consultant	13	36	52	16	117	63%
Multidisciplinary team (MDT) obstetric medicine clinic (NOT diabetes), attended by both physicians and obstetricians	9	24	38	13	84	45%
MDT diabetes clinic, attended by both physicians and obstetricians	39	57	67	16	179	97%
Dedicated MDT cardiac obstetric clinic	0	7	15	12	34	18%
Postnatal joint pelvic floor/perineal trauma clinic with MDT input	6	24	39	12	81	44%
Referral unit for caesarean delivery for morbidly adherent placenta (e.g. placenta accreta)	7	13	21	12	53	29%
Female genital mutilation care and de-infibulation	4	20	42	15	81	44%
Perinatal psychiatrist providing mental health clinic	9	15	31	13	68	37%
Dedicated fetal medicine/neonatal/paediatric surgery joint clinics	1	6	23	9	39	21%
Dedicated twin clinic	12	24	38	14	88	48%
Fetal echocardiography	3	15	30	13	61	33%
Fetal procedures – amniocentesis	16	43	58	15	132	71%
Fetal procedures – in-utero transfusion, shunt insertion, chorionic villus sampling	3	7	32	14	56	30%
Fetal laser therapy for twin to twin transfusion syndrome	12	24	38	14	52	28%
Advanced fetal growth assessment – including ductus venosus Doppler assessment and management of early onset severe intra-uterine growth restriction (IUGR) at less than 30 weeks gestation	16	43	62	15	136	74%

Appendix 5: Methods detail

Survey design

The NMPA organisational survey was developed by the project team with reference to national standards, guidance, recommendations and government policy regarding organisational aspects of maternity and neonatal care. The NMPA Audit Partners and Clinical Reference Group provided additional advice. The electronic survey was piloted with 5 English trusts, 2 Scottish NHS boards and 2 Welsh health boards, selected for their different organisational structure and size; adjustments were made based on the pilot results and feedback.

All NHS trusts and boards providing intrapartum care on site across England, Scotland and Wales were eligible to take part; they were identified from current RCOG project databases and the NMPA maternity information systems survey conducted in autumn 2016, cross-referenced with information published by NHS Digital, the Information Services Division Scotland and the Knowledge and Analytical Services of the Welsh Government. The NMPA organisational survey was conducted from late January to March 2017 and 100% of the 155 eligible trusts and boards submitted a completed survey (134 English trusts, 14 Scottish and 7 Welsh boards).

Previous surveys of maternity care organisation conducted by the National Perinatal Epidemiology Unit (in collaboration with the Healthcare Commission in 2007 and independently in 2010)[12, 22], and by the National Audit Office in 2013[13] were split into a trust/board level and a unit level section. We broadly followed this structure by having a general trust/board level section (one to be completed per trust or board) and a site level section (one to be completed for each of the separate sites within the trust or board where intrapartum care was provided; this could be a site with only an obstetric unit or a freestanding midwife-led unit, or a site with both an obstetric unit and an alongside midwife-led unit).

In order to make completion of the survey as easy as possible and to allow respondents to decide locally who would be best placed to complete certain questions, the site level sections were further divided into three subsections geared towards midwifery, obstetrics and neonatology. Each of these was accessible by its own link via the tailored trust or board landing page. This structure was developed in response to feedback from the pilot sites to facilitate concurrent rather than consecutive completion by different professionals.

Using Snap survey software's group survey facility, a database feed populated each landing page with the maternity site information we had gathered previously via our Maternity Information Systems survey in autumn 2016. The database feed and skip logic were used to tailor the survey as much as possible to the individual organisation to minimise the burden on respondents.

All questions were mandatory, but some questions, for which information might not be immediately to hand, were not mandatory until the point of submission so that respondents were not prevented from progressing through the section. The survey link and trust/board log in details were sent to the Heads of Midwifery of each organisation, who was asked to coordinate completion by relevant colleagues. Links to additional resources on the NMPA website were included and respondents had access to assistance by telephone and email. Reminder emails were sent regularly before and after the survey deadline and non-responders were followed up by email and telephone until a 100% response rate was achieved.

Although the survey only contained general questions about service provision and did not include any questions related to individual maternity service users, each trust and board was provided with unique log in details and the information was collected and stored in secure, password protected environments.

Other data sources

It was evident from the pilot survey responses and feedback that providing information on full time equivalent staff hours dedicated to specific specialties was very time-consuming and challenging, if not impossible, so it was decided to only retain rota-related questions in the survey. Workforce data were obtained from the most recent publications by NHS Digital, ISD Scotland and the Knowledge and StatsWales,[52, 53, 54] supplemented by additional workforce data provided by NHS Digital, ISD Scotland and the Knowledge and Analytical Services of the Welsh Government.

Validation

While a degree of uncertainty is inherent to surveys as a method of data collection, steps taken to maximise the validity of the responses included:

- survey design
    - mandatory status of all questions
    - use of entry format restrictions, selection option settings and routing
    - questions producing low quality responses were identified and eliminated through the pilot
    - respondents were enabled and encouraged to delegate completion of survey sections to relevant clinical leads, with a suggested respondent type listed for each section
- cross-validation both within the survey (e.g. unit numbers, bed numbers, consistency of senior cover responses) and with outside sources (e.g. published workforce data) where possible
- sense-checking, for example of services expected or not expected in certain settings, based information such as on unit type(s) on site and published annual birth numbers
- querying of implausible values with services involved, and omission of these values from analysis if no response was received

Analysis

Data were analysed at trust/board, site or unit level as appropriate. Where annual number of births per site (site size) may be relevant, results were stratified by this. Site size categories were broadly based on the quartiles of the annual number of births (women delivered) per site for sites with an obstetric unit, with freestanding midwife-led units as an additional category. In the online results, freestanding midwife-led units are further split into size categories.

Summary variables were generated to report the maximum service level available per trust/board or per region. Using Stata/IC 14 and MS Excel, one way and cross tabulations were produced for frequencies and proportions, by subgroups where relevant. Where averages are presented, medians are provided rather than means as the responses involved mainly non-normally distributed count data. Due to the often wide spread of data values we have also presented ranges and interquartile ranges.

Maps were produced using ArcGIS Pro 1.4.0 to illustrate regional distribution of services. For regional figures presented on the NMPA website, we have used the 44 Sustainability and Transformation Plan areas as geographic units for England, the three ISD Scotland data areas for Scotland (North, West and East) and have grouped Welsh health boards into two regions (North, Mid & West Wales and South East Wales), based on the All Wales Perinatal Survey[74] and numbers of births. This report presents aggregated results; individual trust/board results and results by region are available on the NMPA website, as is the survey questionnaire (www.maternityaudit.org.uk).

Appendix 6: NMPA Governance

NMPA Clinical Reference Group (CRG)

(Role on CRG between brackets)

Mrs Victoria Stakelum, Women's Network Member, Royal College of Obstetricians and Gynaecologists (RCOG) (Chair)

Prof Jacqueline Dunkley-Bent, Acting Head of Midwifery, NHS England (Funding body representative)

Dr Corinne Love, Senior Medical Officer, Scottish Government (Funding body representative)

Dr Claire Francis, Maternity Network Wales Clinical Lead, NHS Wales (Funding body representative)

Mr Edward Morris, Vice President Clinical Quality, RCOG/Chair NMPA Project Board (Collaborating organisation)

Prof Anne Greenough, Vice President Science and Research, Royal College of Paediatrics and Child Health (Collaborating organisation)

Prof Alan Cameron, Senior Clinical Advisor, Lindsay Stewart Centre for Audit and Clinical Informatics, RCOG (Collaborating organisation)

Ms Jane Munro, Quality and Audit Development Advisor, Royal College of Midwives (Collaborating organisation)

Prof Jan van der Meulen, Clinical Epidemiologist, London School of Hygiene and Tropical Medicine/Chair NMPA Project Team (Collaborating organisation)

Ms Katharine Robbins, Information Analysis Lead Manager (Maternity, Child Health and Community), NHS Digital (National data partner)

Ms Rebecca Cooks, Information Standards & Business Analysis Management Lead, NHS Wales Informatics Service (National data partner)

Dr Nicola Steedman, Clinical Lead, Maternal and Sexual Health, Information Services Division of NHS National Services Scotland (National data partner)

Ms Beverley Beech, Chair, Association for Improvements in the Maternity Services (AIMS) (Stakeholder)

Dr Steve Wardle, Representative for the North of England, British Association of Perinatal Medicine (BAPM) (Stakeholder)

Ms Janet Scott, Research and Prevention Lead, Sands (Stakeholder)

Ms Zoe Chivers, Head of Services, Bliss (Stakeholder)

Prof Jenny Kurinczuk, Director, National Perinatal Epidemiology Unit/Lead, MBRRACE-UK (Stakeholder)

Dr Rupert Gauntlett, Executive Committee Member, Obstetric Anaesthetists Association/Consultant Obstetric Anaesthesia and Intensive Care Medicine, Royal Victoria Infirmary, Newcastle upon Tyne (Stakeholder)

Ms Louise Page, British Maternal and Fetal Medicine Society (Stakeholder)

Dr Jane Mischenko, Commissioning Lead Children & Maternity Services, NHS Leeds CCGs (Stakeholder)

Ms Elizabeth Duff, Senior Policy Adviser, National Childbirth Trust (Stakeholder)

Ms Manjit Roseghini, Head of Midwifery and Women's Health Service, Whittington Health NHS Trust (Stakeholder)

Dr Sam Oddie, Clinical Lead, National Neonatal Audit Programme (Stakeholder)

Prof Gordon Smith, Head of Department, Department of Obstetrics and Gynaecology, University of Cambridge School of Clinical Medicine/Chair, RCOG Stillbirth CSG (Independent clinical academic)

Prof Jane Sandall, Professor of Social Science and Women's Health, King's College London (Independent clinical academic)

Prof Zarko Alfirevic, Co-Principal Investigator, Each Baby Counts/Chair, RCOG Academic Board (Independent clinical academic)

NMPA Project Board

Mr Edward Morris (Chair), Vice President Clinical Quality, RCOG

Prof Alan Cameron, Senior Clinical Advisor, Lindsay Stewart Centre, RCOG

Ms Anita Dougall, Director Clinical Quality, RCOG

Dr Alison Elderfield, Head of Lindsay Stewart Centre for Audit and Clinical Informatics, RCOG

Prof Steve Thornton, Chair, Lindsay Stewart Committee for Audit and Clinical Informatics, RCOG

Ms Sophia Olatunde, Project Manager, Healthcare Quality Improvement Partnership (HQIP)

Dr Kirsten Windfuhr, Associate Director for Quality and Development, HQIP

Ms Victoria Stakelum, Chair, NMPA Clinical Reference Group

Prof Jan van der Meulen, Senior Methodologist, NMPA Project Team

Dr Tina Harris, Senior Clinical Lead (Midwifery), NMPA Project Team

Dr Jane Hawdon, Senior Clinical Lead (Neonatology), NMPA Project Team

Dr Dharmintra Pasupathy, Senior Clinical Lead (Obstetrics), NMPA Project Team

Ms Hannah Knight, Audit Lead, NMPA Project Team

Ms Mandy Forrester, Head of Quality and Standards, RCM

Professor Anne Greenough, Vice President for Science and Research, RCPCH

NMPA Women and Families Involvement Group

NMPA Project Team

Prof Jan van der Meulen, NMPA Senior Methodologist (Chair)

Dr Tina Harris, NMPA Senior Clinical Lead (Midwifery)

Dr Jane Hawdon, NMPA Senior Clinical Lead (Neonatology)

Dr Dharmintra Pasupathy, NMPA Senior Clinical Lead (Obstetrics)

Dr David Cromwell, NMPA Senior Methodological Advisor

Dr Ipek Gurol-Urganci, NMPA Senior Methodological Advisor

Ms Hannah Knight, NMPA Audit Lead

Dr Jen Jardine, NMPA Clinical Fellow (Obstetrics)

Ms Andrea Blotkamp, NMPA Clinical Fellow (Midwifery)

Dr Lindsey Macdougall, NMPA Data Manager

Ms Natalie Moitt, NMPA Statistician

Miss Becky Dumbrill, Lindsay Stewart Centre Administrator

Healthcare Quality Improvement Partnership Maternal, Perinatal and Infant Independent Advisory Group

Mr Derek Tuffnell (Chair)

Mr Richard Arnold

Ms Alison Baum

Ms Carole Bell

Prof Debra Bick

Mr Tim Draycott

Prof Neil Marlow

Dr Steve Robson

Prof Keith Willet

Ms Tina Strack

Ms Sophia Olatunde

References

1. NHS England. National Maternity Review: Better Births – Improving outcomes of maternity services in England – A Five Year Forward View for maternity care, 2016.
2. The Scottish Government. The Best Start: A Five-Year Forward Plan for Maternity and Neonatal Care in Scotland, 2017.
3. The Welsh Government. A Strategic Vision for Maternity Services in Wales, 2011.
4. NHS England. Maternity Transformation Programme, 2017 [Available from: https://www.england.nhs.uk/mat-transformation/].
5. NHS Digital. Hospital Admitted Patient Care Activity, 2015-16. NHS Digital, 2016 [Available from: http://www.content.digital.nhs.uk/catalogue/PUB22378].
6. Office of National Statistics. Birth Summary Tables - England and Wales 2015. ONS, 2016 [Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/datasets/birthsummarytables].
7. National Records of Scotland. 2015 Births, Deaths and Other Vital Events - Preliminary Annual Figures. NRS, 2016 [Available from: https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/general-publications/births-deaths-and-other-vital-events-preliminary-annual-figures/2015].
8. Cousens S, Blencowe H, Stanton C, et al. National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. *Lancet* 2011;377(9774):1319-30. doi: 10.1016/S0140-6736(10)62310-0
9. Carroll F, Knight H, Cromwell D, et al. Patterns of Maternity Care in English NHS Trusts 2013/14. RCOG, 2016.
10. Manktelow BN, Smith LK, Seaton SE, et al. MBRRACE-UK Perinatal Mortality Surveillance Report, UK Perinatal Deaths for Births from January to December 2014. Leicester: The Infant Mortality and Morbidity Studies, Department of Health Sciences, University of Leicester, 2016.
11. Rowe R. Birthplace terms and definitions: consensus process. Birthplace in England research programme. Final report part 2. NIHR Service Delivery and Organisation programme, 2011.
12. Redshaw M, Rowe R, Schroeder L, et al. Mapping maternity care: the configuration of maternity care in England. Birthplace in England research programme. Final report part 3. NIHR Service Delivery and Organisation programme, 2011.
13. National Audit Office. Maternity Services in England. DoH, 2013.
14. Hollowell J. Birthplace programme overview: background, component studies and summary of findings. Birthplace in England research programme. Final report part 1 (updated April 2014). NIHR Service Delivery and Organisation programme, 2011.
15. National Institute for Health and Care Excellence. Clinical guideline 190: Intrapartum care for healthy women and babies. NICE, 2014 (updated 2017) [Available from: https://www.nice.org.uk/guidance/cg190].
16. Walsh D. Personal communication regarding data presented at the conference 'Implementing the national maternity review in rural areas' (February 2017), 2017.
17. British Association of Perinatal Medicine. Categories of Care. BAPM, 2011 [Available from: http://www.bapm.org/publications/documents/guidelines/CatsofcarereportAug11.pdf].
18. Department of Health. Toolkit for High Quality Neonatal Services. DoH, 2009.
19. 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. RCOG, 2007.
20. Royal College of Midwives. The RCM standards for midwifery services in the UK. RCM, 2016.
21. Royal College of Obstetricians and Gynaecologists. Providing quality care for women: a framework for maternity service standards. RCOG, 2016.
22. Healthcare Commission. Towards better births: A review of maternity services in England. Commission for Healthcare Audit and Inspection, 2008.
23. Sandall J, Murrells T, Dodwell M, et al. The efficient use of the maternity workforce and the implications for safety and quality in maternity care: a population-based, cross-sectional study. *Health Serv Deliv Res* 2014;2(38)
24. Knight M, Nair M, Tuffnell D, et al. Saving Lives, Improving Mothers' Care - Surveillance of maternal deaths

in the UK 2012-14 and lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2009-14. Oxford, 2016.
25. Care Quality Commission. 2015 survey of women's experiences of maternity care. Newcastle upon Tyne, 2015.
26. The Scottish Government. Having a Baby in Scotland 2015: Maternity Care Survey, 2015 [Available from: http://www.gov.scot/Publications/2015/12/8202].
27. Redshaw M, Henderson J, National Perinatal Epidemiology Unit. Safely delivered: a national survey of women's experience of maternity care 2014. Oxford: NPEU, 2015.
28. Women's Institute and National Childbirth Trust. Support overdue: Women's experiences of maternity services. London/Cardiff: WI/NCT, 2013.
29. Office of National Statistics. Conceptions in England and Wales: 2015 - Annual statistics on conceptions covering conception counts and rates, by age group including women under 18. ONS, 2017 [Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/conceptionandfertilityrates/bulletins/conceptionstatistics/2015].
30. NHS Digital. Maternity Services Reports, 2017 [Available from: http://content.digital.nhs.uk/maternityandchildren/maternityreports].
31. Human Fertilisation and Embryology Authority. Fertility treatment in 2013: trends and figures, 2014.
32. Knight M, Kenyon S, Brocklehurst P, et al. Saving Lives, Improving Mothers' Care - Lessons learned to inform future maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2009–12. Oxford: National Perinatal Epidemiology Unit, University of Oxford, 2014.
33. NHS Digital. Hospital Maternity Activity, 2015-16. NHS Digital, 2016 [Available from: http://www.content.digital.nhs.uk/article/2021/Website-Search?productid=23494&q=hes+maternity+statistics+2015%2f16&sort=Relevance&size=10&page=1&area=both#top].
34. Maternal Critical Care Working Group/Royal College of Anaesthetists. Providing equity of critical and maternity care for the critically ill pregnant or recently pregnant woman. RCoA, 2011.
35. Royal College of Anaesthetists. Guidelines for the Provision of Anaesthesia Services for an Obstetric Population 2017. RCoA, 2017.
36. Thiagamoorthy G, Johnson A, Thakar R, et al. National survey of perineal trauma and its subsequent management in the United Kingdom. *Int Urogynecol J* 2014;25(12):1621-7. doi: 10.1007/s00192-014-2406-x
37. The Pelvic Floor Society. Definition and accreditation of a pelvic floor multidisciplinary team. Association of Coloproctology of Great Britain and Ireland, 2017 [Available from: http://thepelvicfloorsociety.co.uk/pages.php?t=QA-&-Governance&s=QA-&-Governance&id=99#Definition_and_accreditation_of_a_pelvic_floor_multidisciplinary_team].
38. Maternal Mental Health Alliance. Everyone's Business: UK Specialist community perinatal mental health teams and mother & baby units, 2015 [Available from: http://everyonesbusiness.org.uk/?page_id=349].
39. NHS Improvement. Reducing harm leading to avoidable admission of full-term babies into neonatal units – Findings and resources for improvement. NHSI, 2017.
40. Department of Health. Neonatal Intensive Care Review: Strategy for Improvement, 2003.
41. Department of Health. Health Building Note 09-02 – Maternity care facilities, 2013.
42. National Childbirth Trust. NCT Briefing: Involving Fathers in Maternity Care. London: NCT, 2009.
43. Welsh Health Specialised Services Committee. All Wales Neonatal Standards, 2nd edition. WHSSC, 2013.
44. The Scottish Government. Neonatal Care in Scotland: A Quality Framework, 2013.
45. Royal College of Midwives. State of Maternity Services Report 2016. RCM, 2017.
46. Royal College of Midwives. The gathering storm: England's midwifery workforce challenges. RCM, 2017.
47. National Audit Office. Caring for Vulnerable Babies: The reorganisation of neonatal services in England. London, 2007.
48. Royal College of Obstetricians and Gynaecologists. Providing quality patient care – obstetrics and gynaecology workforce. RCOG, 2016.
49. Royal College of Paediatrics and Child Health. Paediatric Rota Gaps and Vacancies 2016. RCPCH, 2016.
50. Royal College of Midwives. Getting the midwifery workforce right. RCM, 2016.
51. British Association of Perinatal Medicine. Service standards for hospitals providing neonatal care (3rd edition). BAPM, 2010 [Available from: http://www.bapm.org/publications/documents/guidelines/BAPM_Standards_Final_Aug2010.pdf].
52. NHS Digital. NHS Workforce Statistics – January 2017, Provisional Statistics: Staff Group, Area and Level. NHS Digital, 2017 [Available from: http://content.digital.nhs.uk/searchcatalogue?productid=24876&topics=1%2fWorkforce%2fStaff+numbers&sort=Relevance&size=10&page=1#top].

53. Information Services Division Scotland. NHS Scotland Workforce Information - as at 30th September 2016: Nursing and midwifery staff in post. ISD Scotland, 2016 [Available from: http://www.isdscotland.org/Health-Topics/Workforce/Publications/data-tables.asp].
54. StatsWales. Non-medical NHS staff by grade and staff group. Welsh Government, 2017 [Available from: https://statswales.gov.wales/Catalogue/Health-and-Social-Care/NHS-Staff/Non-Medical-Staff/nonmedicalnhsstaff-bystaffgroup-grade-year].
55. Royal College of Midwives. Staffing Standard in Midwifery Services. RCM, 2009.
56. Ball JA, Washbrook M, Royal College of midwives. Working with Birthrate Plus. RCM, 2009.
57. National Institute for Health and Care Excellence. NICE guideline 4: Safe midwifery staffing for maternity settings. NICE, 2015.
58. Department of Health. National Service Framework for Children, Young People and Maternity Services. DoH, 2004.
59. Obstetric Anaesthetists Association/Association of Anaesthetists of Great Britain & Ireland. Guidelines for Obstetric Anaesthetic Services. OAA/AAGBI, 2013.
60. Bliss. Bliss baby report 2015: hanging in the balance (England). London, 2015.
61. Bliss. Bliss baby report 2016: time for change (Wales). London, 2016.
62. Bliss. Bliss Scotland baby report 2017: An opportunity to deliver improvements in neonatal care. Glasgow, 2017.
63. Royal College of Paediatrics and Child Health. State of Child Health. Short report series: The Paediatric Workforce. RCPCH, 2017.
64. Royal College of Obstetricians and Gynaecologists, Royal College of Midwives, Royal College of Anaesthetists, Royal College of Paediatrics and Child Health. Standards for Maternity Care. RCOG, 2008.
65. Scottish Intercollegiate Guidelines Network. Management of diabetes. A national clinical guideline (116). SIGN, 2010.
66. National institute for Health and Care Excellence. NICE guideline 3: Diabetes in pregnancy: management from preconception to the postnatal period. NICE, 2015 [Available from: https://www.nice.org.uk/guidance/ng3].
67. National Institute for Health and Care Excellence. Quality standard 115: Antenatal and postnatal mental health. NICE, 2016 [Available from: https://www.nice.org.uk/guidance/qs115].
68. National Institute for Health and Care Excellence. Clinical guideline 192: Antenatal and postnatal mental health: clinical management and service guidance. NICE, 2014 (updated 2015) [Available from: https://www.nice.org.uk/guidance/cg192].
69. Scottish Intercollegiate Guidelines Network. Management of perinatal mood disorders. A national clinical guideline (127). SIGN, 2012.
70. Royal College of Midwives. Position Statement: Continuity of midwife-led care. London: RCM, 2016 [Available from: https://www.rcm.org.uk/sites/default/files/Continuity%20of%20midwife-led%20care.pdf].
71. Information Services Division Scotland. Births in Scottish Hospitals 2015-16. ISD Scotland, 2016 [Available from: http://www.isdscotland.org/Health-Topics/Maternity-and-Births/Births/].
72. NHS Wales Informatics Service. Maternity Statistics, Wales, 2015-16, 2017 [Available from: http://gov.wales/docs/statistics/2017/170531-maternity-statistics-2017-en.ods].
73. South West Maternity and Children's Clinical Network. South West Maternity Dashboard 2017 [Available from: http://maternitydashboard.swscn.org.uk/].
74. All Wales Perinatal Survey. Annual Report 2015. Cardiff: Cardiff University, 2016.