

THE BEST START

A Five-Year Forward Plan for
Maternity and Neonatal Care in Scotland



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Acknowledgements

I would like to express my gratitude to my fellow Review team members, the Sub-Group Chairs, as well as all of the members of the Sub-Groups for their time and commitment in working with me to conduct this Review. I would also like to acknowledge the substantial support from the Secretariat team who have worked tirelessly to support the Review. Your expertise, advice, perspectives and enthusiasm have been invaluable.

I would also like to thank the hundreds of staff, parents and voluntary sector representatives who took the time to contribute their views and perspectives to the Review. These thoughtful contributions have shaped the report and recommendations that follow.

Jane Grant

FOREWORD



SHAPING SERVICES FOR THE FUTURE



Wherever women and babies live in Scotland and whatever their circumstances, all women should have a positive experience of maternity and neonatal care which is focused on them, and takes account of their individual needs and preferences. All women, their babies, their partners and their families should be aware of the support and choices that are available to them in order that they can be partners in care and achieve the best outcomes for them and their family.

This report sets out a vision for the future planning, design and safe delivery of high quality maternity and neonatal services in Scotland. It puts the family at the centre of decisions so that all women, babies and their families get the highest quality of care according to their needs.

Our current services have evolved over many years and the time is right for a refreshed model of maternity and neonatal care-based on the current available evidence, best practice and feedback from families and frontline staff to design and further improve existing services.

Person-centred, safe and high quality care for mothers and babies throughout pregnancy, birth and following birth can have a marked effect on the health and life chances of women and babies and on the healthy development of children throughout their life.

Truly family-centred care will maximise the opportunity to establish the building blocks for strong family relationships, and for confident and capable parenting. This can help to reduce the impact of inequalities and deprivation which can have longer-term health consequences for families. Good maternity and neonatal care will support the best possible outcomes for mothers, babies and the wider family.

Our key objective is to focus on the individual needs of each and every family, and in achieving this aim, we will improve the quality and safety of services and secure improved health and wellbeing for mothers and babies in the short, medium and long term.

Jane Grant
Review Chair and Chief Executive, NHS Forth Valley

January 2017

SUMMARY OVERVIEW



Maternity and neonatal care and services matter to the health and wellbeing of Scotland's people. The health, development, social, and economic consequences of childbirth and the early weeks of life are profound, and the impact, both positive and negative, is felt by individual families and communities as well as across the whole of society.

Within the context of wider change within NHSScotland, this Review offers a unique opportunity to place the current and future needs of women, babies and families, and person-centred, relationship-based care, at the heart of redesigned maternity and neonatal services.

The future vision of maternity and neonatal services across Scotland is one where:

- All mothers and babies are offered a truly family-centred, safe and compassionate approach to their care, recognising their own unique circumstances and preferences.



- Fathers, partners and other family members are actively encouraged and supported to become an integral part of all aspects of maternal and newborn care.



- Women experience real continuity of care and carer, across the whole maternity journey, with vulnerable families being offered any additional tailored support they may require.



- Services are redesigned using the best available evidence, to ensure optimal outcomes and sustainability, and maximise the opportunity to support normal birth processes and avoid unnecessary interventions.



- Staff are empathetic, skilled and well supported to deliver high quality, safe services, every time.



- Multi-professional team working is the norm within an open and honest team culture, with everyone's contribution being equally valued.



This report sets out what this vision will mean for the delivery of high quality and safe maternity and neonatal services across Scotland in the next five years; how women, babies and families will get the type of care they want and how staff will be supported to deliver that care.

It makes a number of recommendations that will change the way that services are organised. The full table of recommendations is outlined at Appendix A.

CONTINUITY OF CARER

- All women will have continuity of midwifery carer from a primary midwife.
- Midwifery and obstetric teams will be aligned with a caseload of women and be co-located for the provision of community and hospital-based services.
- Specific details of the way in which continuity is managed will vary across settings (e.g. urban or rural) and population groups (e.g. women with particular social vulnerability). Different models of providing continuity should be audited and evaluated.
- The existing midwifery and obstetric workforce will be reconfigured to work in a way that supports continuity of carer for all women.
- Education and support for all staff will be needed to adapt to the new way of working.
- Early adopter NHS Boards should be identified to lead the change in practice.

PERSON-CENTRED MATERNITY AND NEONATAL CARE

- Maternity and neonatal care should be co-designed with women and families from the outset, with information and evidence provided to allow her to make informed decisions in partnership with her family, her midwife and the wider care team as required.
- Services will regard mother and baby as one entity and truly put the mother, baby and family at the centre of service planning and delivery.

MULTI-PROFESSIONAL WORKING

- There will be a universal model of care that runs across the whole care continuum, whereby all women and babies receive midwifery care and those with additional needs receive extra care.

SAFE, HIGH QUALITY AND ACCESSIBLE CARE

- Integrated team care for women, babies and families will, over time, take place in local community 'hubs'.
- All women should have an appropriate level of choice in relation to place of birth and there are a number of choices that should be available to all women in Scotland including birth at home, birth in an alongside or freestanding midwifery unit, and hospital birth.
- Factors contributing to the rising caesarean section rate should be examined, from both the clinical and woman's perspective and optimal levels of intervention that balance risk and potential harm should be identified and implemented.
- Babies with moderate additional care needs (for example, late preterm) should, when possible, be cared for in postnatal wards.
- The provision of high quality postnatal care should be afforded a high priority.
- Achieving this new model of working will require considerable re-design of services, especially in the way that midwives work.
- Maternity and neonatal services should be organised so that units providing the most highly specialised care are co-located.
- Maternal and fetal medicine services for women with the most complex needs should be managed by a core group of experienced consultants at a regional or national level.
- All women, and in particular the most vulnerable, should be supported with compassion and empathy, and provided with advice and services to promote lifestyle changes during their pregnancy to improve their own health and the health of their baby.
- All NHS Boards should review their current access to perinatal mental health services to ensure early and equitable access is available to high quality services, with clear referral pathways.
- In every case where a family is bereaved, they should be offered access to appropriate bereavement support before they leave the unit, and each maternity and/or neonatal unit should have access to staff members trained in bereavement care.

RE-DESIGNING NEONATAL CARE AND SERVICES

- Three to five neonatal intensive care units should be the immediate model for Scotland, progressing to three units within five years.
- A national Framework for Practice should be developed which outlines clear pathways for newborn care and also supports the development of consistent and equitable specialty paediatric and allied health professional outreach support for local neonatal units from larger units.
- A national level group should be established to develop National Frameworks for Practice for Scotland, which are evidence-based and describe minimum acceptable standards for newborn care.
- Education, training and development will be needed for all staff.

SUPPORTING THE CHANGES

- Transport services: The transport team must continue to be an integral part of the neonatal community, and effective communication and liaison between neonatal units and neonatal transfer teams should be routine.
- Remote and rural care: It is essential that all staff can access high quality education, training and support and rotation to larger units for skills maintenance.
- Telehealth and telemedicine: The enhanced use of telemedicine in maternity and neonatal care should be developed.
- Workforce planning: NHS Boards should undertake comprehensive workforce planning-based on the new model.
- Education and training: Education and training capacity planning is needed to ensure staff are fully supported to deliver the new models of care.
- Quality improvement: National maternity and neonatal dashboards should be developed.
- Data and IT: A national data hub, integrated with Information Services Division, part of NHS National Services Scotland , should be developed to coordinate the collection and verification of all Scottish related neonatal and maternity data.
- Electronic records: A Scottish electronic women's maternity record should be developed.

WIDER IMPLICATIONS

- A single Maternity Network for Scotland should be developed, along with a single Neonatal Managed Clinical Network for Scotland.
- The implementation process should consider the phasing and prioritisation of the recommendations to ensure the implications of the considerable level of service change are managed appropriately.
- A systematic evaluation of the impact of the more significant recommendations should be undertaken.

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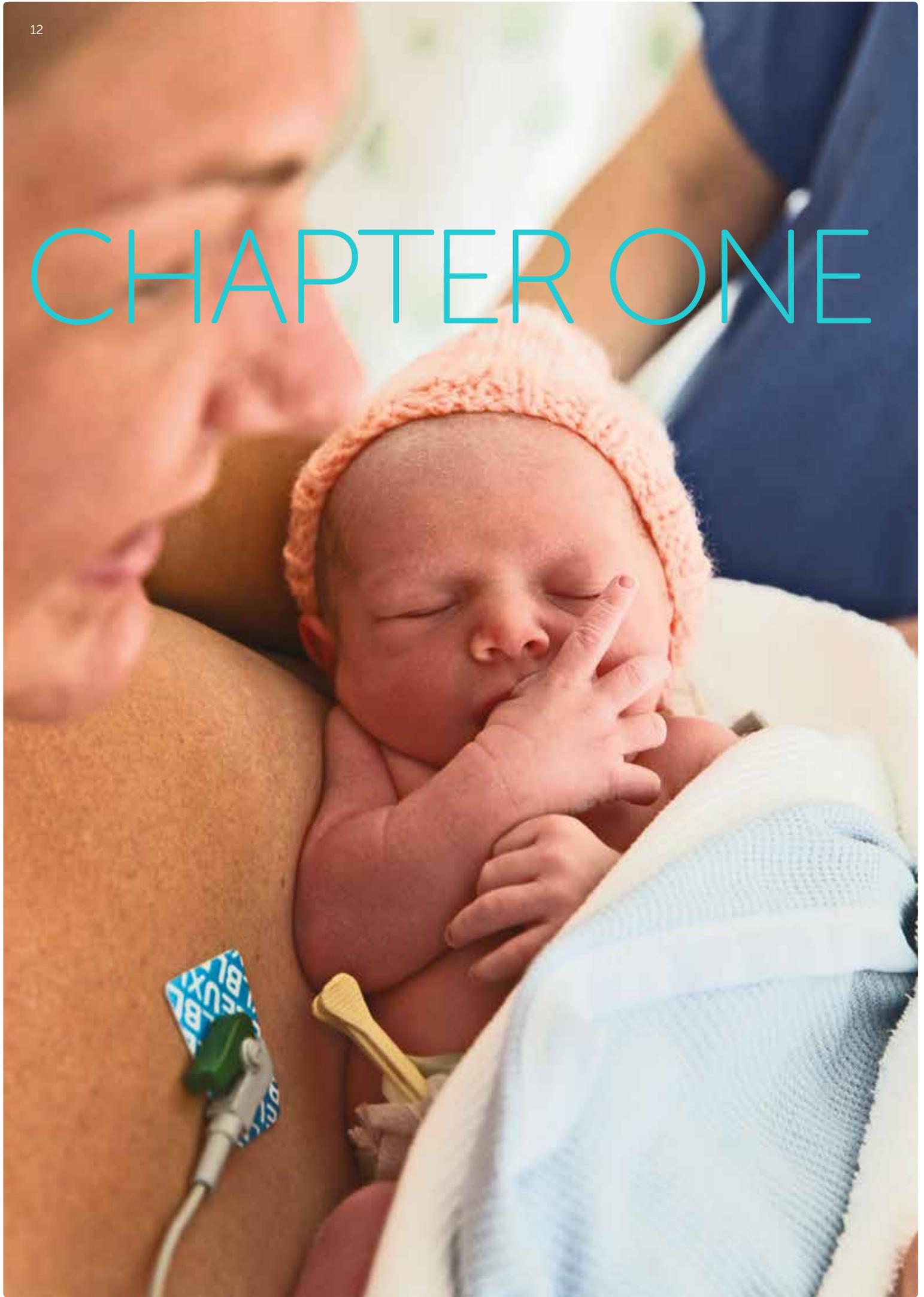
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CHAPTER ONE



THE CASE FOR CHANGE

Scotland's maternity and neonatal services are generally providing high quality care, with high levels of satisfaction amongst women and families who use those services. However, services have largely developed over time, rather than being designed around the needs of women and families, leading to different approaches and care across Scotland.

The changing needs of the population also mean that services will no longer be fit for the future. There are a number of drivers for change including population health and demographic trends, the need for quality improvement, workforce pressures and emerging evidence. Within the context of wider change within NHSScotland, this Review offers a unique opportunity to place the current and future needs of women and families and person-centred, relationship-based care at the heart of redesigned maternity and neonatal services.

1.1 Population health

While the general population is living longer and major advances have been made in tackling disease, complex health challenges remain which are of significance for pregnant women and families.

The Chief Medical Officer's Annual Report 2014-15: Realistic Medicine¹, underlines the prevalence of key inequalities in our nation's health. Significant proportions of the Scottish population are dealing with the impact of co-morbidity, where they are living with two or more health conditions. This situation poses challenges for health and social care provision generally, driving a need to shift to truly person-centred services which focus on the holistic needs of people, rather than disease specific approaches to care.

While most women remain healthy, the above trends are evident among childbearing women, with a steady rise in older mothers and women with a range of other health issues and long-term conditions. These factors are associated with an increased need for intervention. In addition, women living in poverty, teenage mothers, women with mental health issues, and other vulnerable women are more likely to have poor pregnancy outcomes.

Maternal health and wellbeing is directly related to infant mental and physical health, underlining the importance of access to perinatal mental health services throughout the pregnancy journey. The provision of services for women with mental health issues is a key public health challenge. Significant numbers of women may be affected by mental illness in any one year, and mental ill-health is more common in deprived populations.



1 <http://www.gov.scot/Resource/0049/00492520.pdf>

A significant proportion of the total burden of disease is preventable, and directly linked to risk factors including smoking, alcohol use, being overweight and lack of exercise. Long-term conditions are having a significant impact on the health of women. Health inequalities persist, with higher rates of obesity, alcohol-related mortality, smoking, alongside lower participation in physical exercise, in Scotland's most deprived communities.

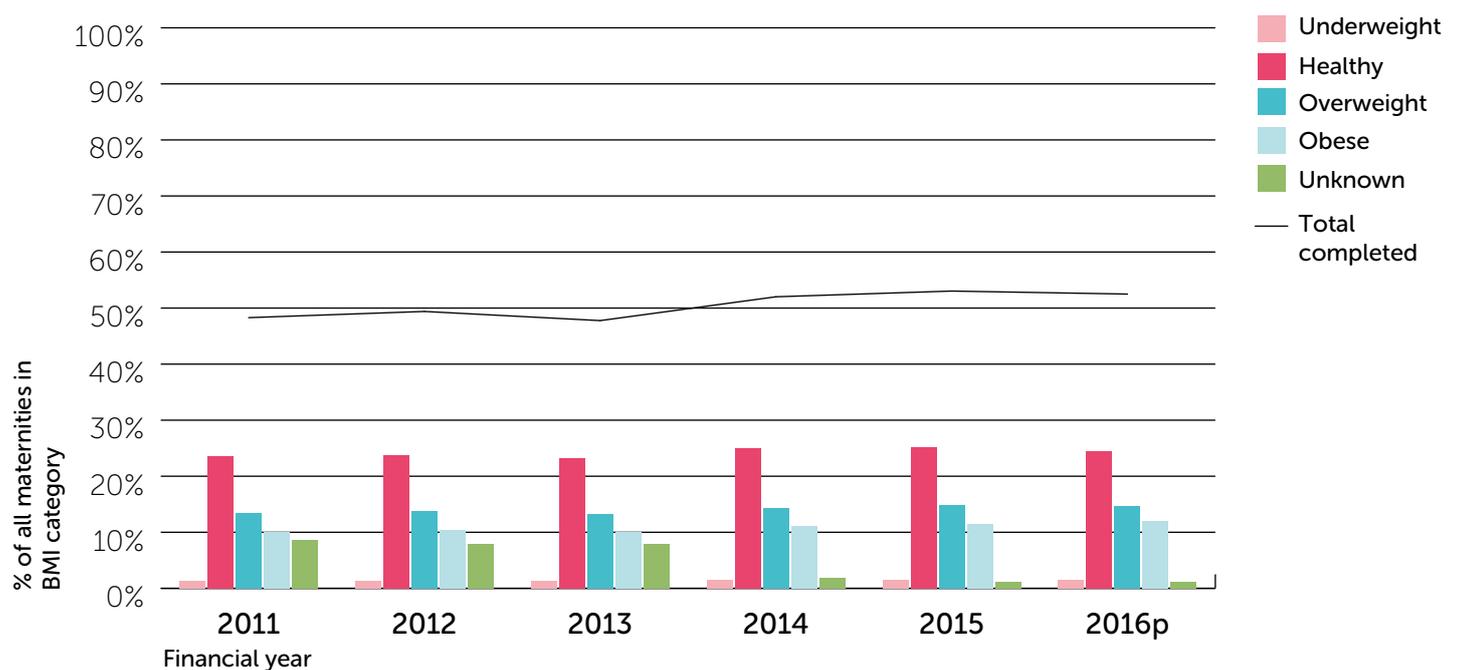
Obesity is a significant issue, with almost two-thirds of adults classed as overweight or obese. Women are known to have higher rates of obesity than men and emerging evidence suggests that overweight children are more likely to become obese adults, with a higher risk of morbidity, disability and premature mortality in adulthood compared with healthy weight children. Maternal obesity is associated with poor maternal

and infant outcomes, including premature birth, intrauterine growth restriction and increased chance of caesarean section. Almost half of women giving birth in 2014/15 in Scotland were classed as overweight or obese.

Alcohol sales data show that adults in Scotland drink almost a fifth more than our English and Welsh counterparts, and that our population has the highest rate of alcohol liver disease and cirrhosis in Western Europe. Smoking is the leading preventable cause of ill-health and premature death in Scotland, with half of all regular cigarette smokers estimated to die prematurely as a result of smoking. Smoking and alcohol in pregnancy are known to be harmful to both mother and baby, and whilst smoking rates are falling, this remains a significant contributor to maternal and infant ill-health.

Figure 1: Maternal body mass index at antenatal booking. Year ending 31 March 2015².

Data source: SMR02 ISD Scotland



² Provisional data, excludes home births and births non-NHS hospitals

1.2 Opportunities to improve health

The correlation between maternal health and lifelong health, wellbeing and attainment of children is well evidenced. Ensuring the best start in life for children will have a profound effect on improving generational population health.

Previous reports and evidence have highlighted the critical role of the right maternity care in contributing to reducing health inequalities for women and families, and improving infant development, through early identification of needs and timely intervention.

Improving population health and reducing the inequalities gap requires a public health approach within our maternity and neonatal services which is universal, while taking account of the unique needs of each woman and her family.

Breastfeeding has a positive impact on short- and long-term maternal and child health, with children who are breastfed less likely to suffer childhood obesity, gastrointestinal infection or respiratory disease, and to have improved cognitive and behavioural development. Breastfeeding is also known to reduce the risk of maternal breast cancer. Yet rates of breastfeeding in Scotland are low overall.

Positive, person-centred care in pregnancy and after birth can have a significant impact throughout life. Conversely, poor care can have an impact on wider family health.

1.3 Learning from audits, reports and evidence

A range of national audits and reports have made recommendations for improvements in the care and services for women, babies and their families, including MBRRACE-UK Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK³ and the Scottish Maternity Care Experience Survey: 2015⁴.

In addition, two significant recent investigations into maternity care, the Report of The Morecambe Bay Investigation: 2015⁵ and the Montgomery Judgement: 2015⁶ have implications for the way services are delivered in Scotland.

These audits and reports contain a wealth of information in relation to the current services, both in terms of strengths, and also areas of challenge where improvements are required. The case for these reports to be used to drive improvements and change is clear and this Review offers the opportunity to address a number of the issues raised.

1.4 Future service provision

The needs and expectations of childbearing women and their families are changing, and services should be streamlined and designed to respond across a spectrum of unique family requirements. This spans optimising the normal processes of pregnancy and birth for all women, whilst also ensuring women who need additional care and support have access to the interventions they need and the provision of intensive care for the few who need it. Models of care need to improve outcomes for all women and babies, paying particular attention to the most vulnerable families.



3 <https://www.npeu.ox.ac.uk/mbrance-uk/reports>

4 <http://www.gov.scot/Resource/0049/00490953.pdf>

5 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/408480/47487_MBI_Accessible_v0.1.pdf

6 https://www.supremecourt.uk/decided-cases/docs/UKSC_2013_0136_Judgment.pdf

1.5 Workforce considerations

A significant range and number of the overall NHS workforce in Scotland support maternity and neonatal services, either directly or indirectly. Although different parts of the country have slightly different models supporting the delivery of maternity and neonatal care, similar issues are observed across Scotland.



Workforce supply: Issues such as recruitment, retention and age profile affect all maternity and neonatal units to some extent, however these are more acute in some areas, with particular challenges in some professional groups. The graphs at figures 2 and 3 show the age profile of midwives and neonatal nurses across the east, west and north of Scotland, which demonstrate some of the challenges in relation to the age profile of our current workforce.



Role development: Professional roles are continually evolving and changing, and need to support the model of care that is in operation now, as well as the future model. Unplanned, or unsupported, expansion of roles can lead to a lack of clarity within teams and growing service demand means it is increasingly important to fully utilise the skills and training of all staff.



Education and training: It is vital that this keeps pace with the skills requirements of the workforce, is relevant, accessible, flexible and fit for purpose. This applies to undergraduate, postgraduate and continuous professional development, in addition to skills maintenance.



Culture: The Morecambe Bay Investigation: 2015 and others, such as MBRRACE Confidential Enquiries, have focused on the important influence of workplace culture and behaviours on the quality and safety of the clinical care being provided. Across NHSScotland, much has been done to promote the standards of behaviour that are acceptable and to tackle bullying and harassment in the workplace. However, the NHSScotland Staff Survey: 2015 National Report⁷ results demonstrate that there remains a need to secure sustained improvement in culture.

1.6 Views of service users

The views of current service users are critical in informing the future design of services to ensure that the changing expectations of women and their families are being addressed. A wide programme of engagement during this Review process ensured that these views have been given a high priority in influencing the shape of future service provision, building on evidence available from national surveys and third sector reports.

Figure 2: Midwifery age profile by region

Data source: Scottish Workforce Information Standard System (SWISS) as at 30 June 2016

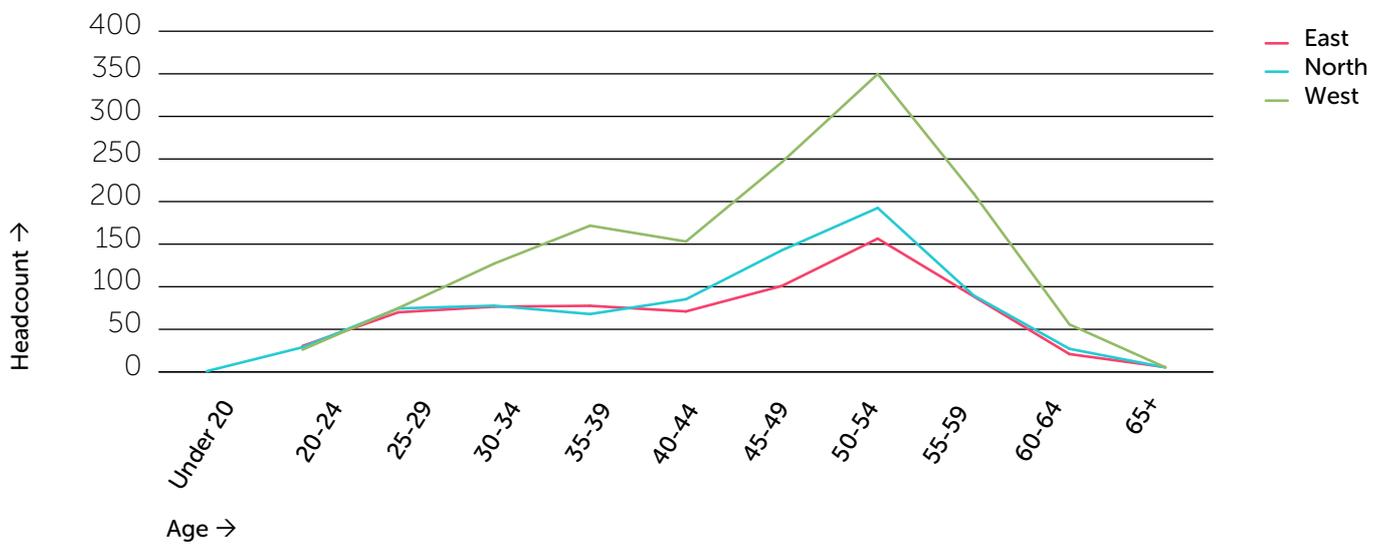
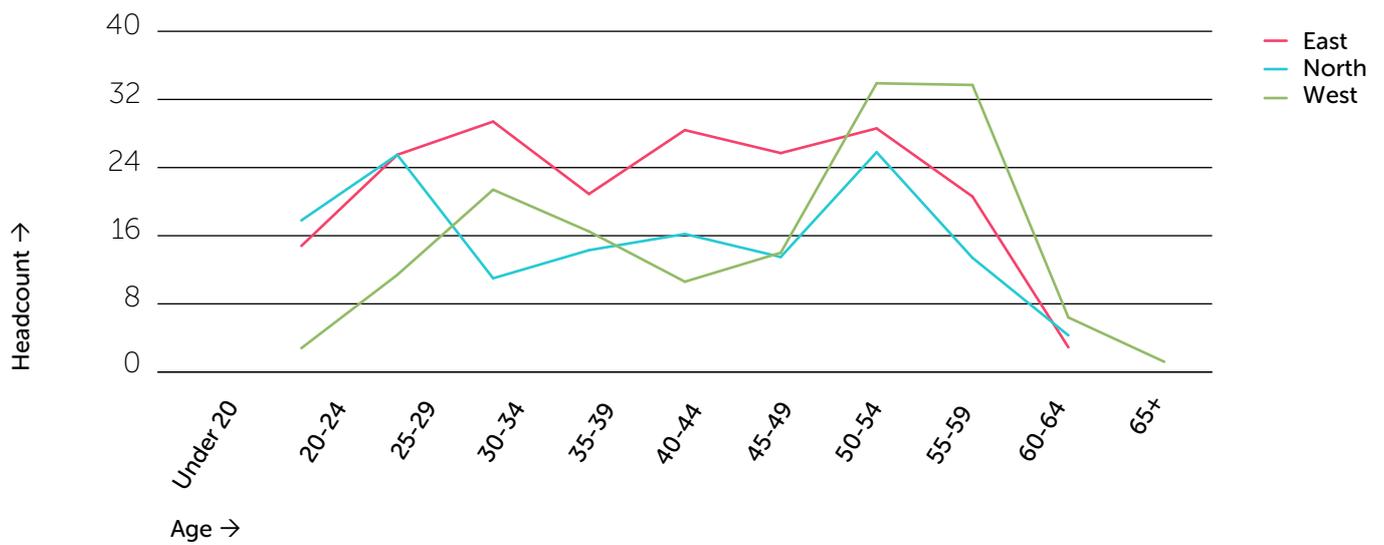


Figure 3: Neonatal nurse age profile by region

Data source: Scottish Workforce Information Standard System (SWISS) as at 30 June 2016



CHAPTER TWO

THE CURRENT MODEL OF MATERNITY AND NEONATAL CARE

The quality of maternity and neonatal services that is currently provided to women, babies and families in Scotland is good. However, changes to the birth rate, demographics, new evidence, best practice and guidelines, along with advances in clinical care and treatment, mean that they must be continually adapted and updated. This Review provides an opportunity to consider all the elements of the service to ensure a person-centred, consistent, high quality approach across all services in the future.

The overall framework for the delivery of maternity and neonatal services, in terms of the principles for care and service standards, is established at a national level. However, there is no single prescribed model of service delivery, and individual NHS Boards design services locally for their own population.

Maternity services are provided in all 14 NHS territorial Boards, offering a range of midwife-led and obstetric-led care. Neonatal services are provided from 15 neonatal units across Scotland.

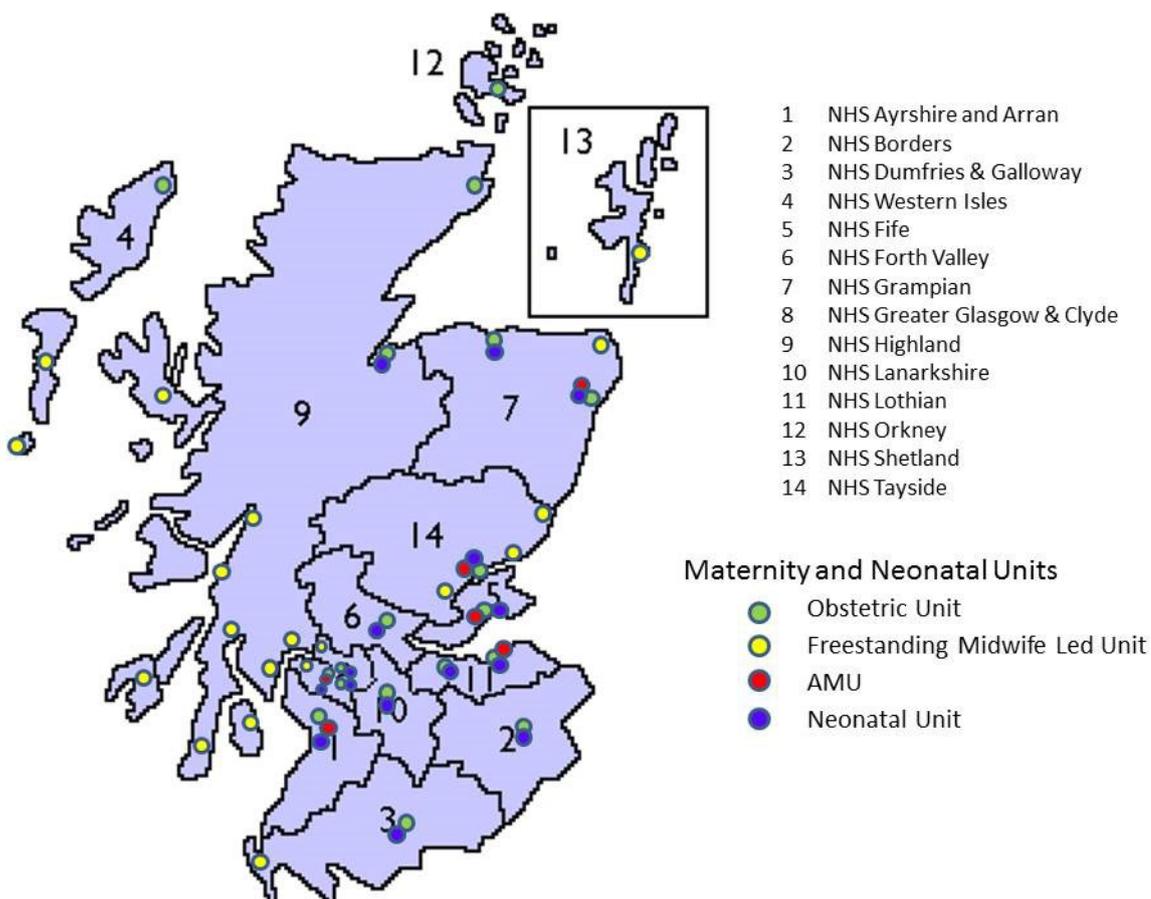


Figure 4: Maternity and Neonatal Services in Scotland by area

2.1 Service demand

The birth rate in Scotland has been relatively static in recent years, with around 54,000 births in 2015⁸. Normal births have declined steadily and there has been a rise in interventions, largely from a rise in caesarean sections to 31.1% of all births in 2015⁹, although there is significant variation in the rate across NHS Boards. This trend is converse to the aspirations outlined in the Chief Medical Officer’s Annual Report 2014-15: Realistic Medicine, in terms of reducing intervention, overtreatment and unwarranted variation in clinical practice.

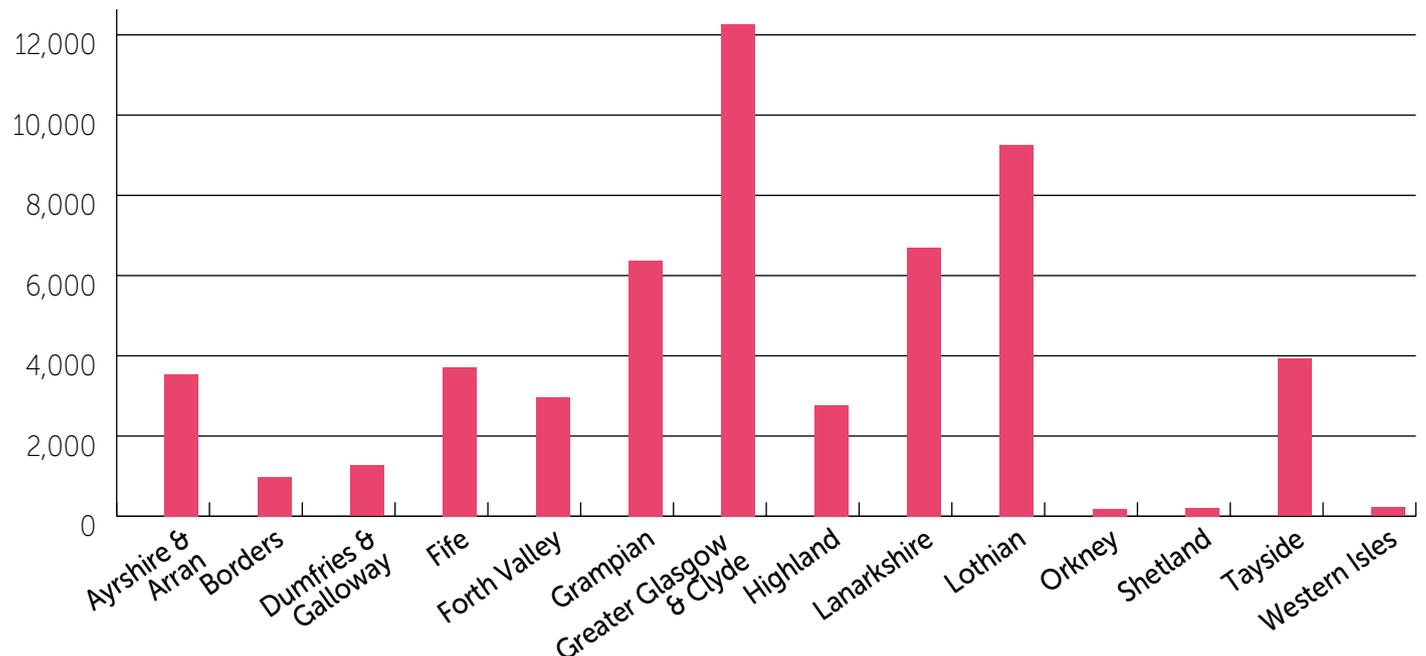
Outcomes and survival rates for all preterm and sick newborns have improved significantly over the last 20 years with enormous advances in newborn care. The majority of additional care provided to newborns is classified as high dependency or special care with only a small proportion requiring intensive care. However, for that small proportion, the complexity of neonatal intensive care has increased, particularly for those babies born before 26 weeks’ gestation or with extremely low birth weights, those babies requiring complex modes of ventilation and nitric oxide and/or extracorporeal life support, and babies requiring complex surgery.

Current neonatal services in Scotland are geared towards intensive care provision, but while future neonatal care is likely to see continued advances in highly specialist, technically challenging management, it must be remembered that this is required for only a tiny proportion of babies born in Scotland. Furthermore, most of those babies requiring neonatal intensive care will only require such a high level of care for part of their neonatal care. Many more babies will require only high dependency and special care provision.

The percentage of babies born prematurely (before 37 weeks), or with a low birth weight has decreased slightly over the last 10 years. In 2014/15, 7.3% of babies were born prematurely and 6.2% had a low birth weight (compared to 8.2% and 7.6% respectively in 2005/06)¹⁰. However, improvements can be made to reduce this even further.

Figure 5: Maternity activity in Scotland 2014/15

Data source: SMR02 ISD Scotland



8 <https://isdscotland.scot.nhs.uk/Health-Topics/Maternity-and-Births/Publications/2015-11-24/2015-11-24-Births-Report.pdf>
 9 <https://isdscotland.scot.nhs.uk/Health-Topics/Maternity-and-Births/Publications/2015-11-24/2015-11-24-Births-Report.pdf>
 10 <http://www.isdscotland.org/Health-Topics/Maternity-and-Births/Births/>

2.2 Maternity services

All women will see a midwife in pregnancy and some will also see an obstetrician and other health professionals, depending on their care needs. Most women give birth in hospital, however others may give birth at home or in a community midwifery unit. The availability of choice of place of birth varies across Scotland.

2.2.1 Antenatal care: Care of pregnant women before birth

Currently, antenatal care is delivered in both community and hospital settings. Pregnant women are encouraged to book directly with a midwife before their 12th week of pregnancy, as this will ensure that they are able to receive the best care and advice in the important early weeks of pregnancy.

2.2.2 Intrapartum care: Care of pregnant women during labour and birth

At present, most women have their baby in hospital, either in an obstetric unit or in a midwifery unit attached to the hospital (an 'alongside' midwifery unit). Only 2.6% of births take place in freestanding community midwifery units or at home. At present, the decision on where to labour and birth is based on the woman's preference and available choice locally, and by an antenatal risk assessment informed by the currently agreed NHS Quality Improvement Scotland¹¹ Pathways for Maternity Care: 2009¹².

Intrapartum care is currently provided in a choice of settings including:

Women without complications will be offered midwife-led care and women with more complex needs will be offered both midwifery and obstetric care, usually in obstetric consultant-led units.

There is currently considerable variation in the availability of choice of place of birth that women have in different NHS Boards. A full list of maternity units in Scotland is detailed at Appendix B.

During labour and birth, a number of women require the services of anaesthetic staff. This is most often for pain relief in labour or for an operative birth, and these anaesthetic services are essential, and integral, to the provision of a safe, high quality service for women.

'The doctors and anaesthetist both introduced themselves to me which I thought was very good as the first time you see them won't be when something goes wrong.'

Scottish Health Council: 2016

Figure 6: Intrapartum care settings

Intrapartum Care Setting			
18 Obstetric consultant-led units	6 Alongside midwifery units with adjacent obstetric unit	19¹³ Freestanding community midwifery units	Home Birth And birth outside hospital

¹¹ Now known as Healthcare Improvement Scotland

¹² http://www.healthcareimprovementscotland.org/our_work/reproductive,_maternal_child/programme_resources/keeping_childbirth_natural.aspx

¹³ Shetland has a Community Midwifery Unit with GP support.

2.2.3 Postnatal care: Care of women and their baby following birth

Women who have their baby in hospital or in a midwifery unit will often have a short inpatient stay in postnatal care, typically ranging from a few hours to one or two days. All women receive postnatal care in their local community for at least 10 days after birth, which is normally provided by a midwife in addition to routine GP care. Their ongoing care will usually be transferred from maternity services to the care of the health visitor around 10 days after birth, with continuing GP involvement as required.



Support for breastfeeding is often provided locally by health visitors, midwife-led clinics and a range of local support services, including peer support.

GPs will also undertake the six-week check for mother and baby and any further overall health support as required. Some women may also be offered an appointment with an obstetrician around six weeks after birth.

2.2.4 Vulnerable women

For many women, having a baby is a very difficult and challenging period in their lives and they will require additional support and care from a wider range of professionals which may not be confined to NHS services, but may include multiple agencies. The options for care for women and access to additional support are not consistent or equitable across Scotland. Some examples of good services exist but they are not available for all women.

2.3 Neonatal services

Neonatal care and services are provided to preterm babies, and term babies who have additional care needs. The intensity of care provided to babies in neonatal units is categorised in three levels:

Level One: Special Care Units

These units provide special care for the local population and a level of high-dependency care, through agreement with the three neonatal Managed Clinical Networks. Babies who require more complex or longer-term intensive care will be transferred to a neonatal intensive care unit.

Level Two: Local Neonatal Units

These units provide special care and high-dependency care and a restricted volume of intensive care (as agreed locally). Babies who require complex or longer-term intensive care will be transferred to a Neonatal Intensive Care Unit.

Level Three: Neonatal Intensive Care Units

These units provide the full range of medical (and sometimes surgical) neonatal care for the local population from a larger intensive care unit.

Transitional care has been established in some areas to support parenting skills and confidence as a key element of discharge planning. However, it is not universally available at present. In the transitional care model, the mother stays with her baby and provides care, supported by maternity and neonatal staff. There is, however, no single, uniform designation or model of transitional care at present.

Staff will determine the additional level of neonatal care that babies need. Some babies will only need neonatal care for a few hours, for others it will be much longer. Most recent data suggests that around 10% of babies born in Scotland will need some level of neonatal care¹⁴, with a quarter of these babies being admitted to neonatal intensive care.

A list of the current neonatal units and the level of service they provide is shown at Appendix C.

2.4 Transport services

The Scottish Specialist Transport and Retrieval Service (ScotSTAR), is a branch of the Scottish Ambulance Service, and provides consultant-led transport services for all those babies who need ongoing care across Scotland, including planned transfers for investigations and transfers back to local units.

ScotSTAR also coordinates cot availability and neonatologist consultations. These services are provided from three regional teams-based in Glasgow, Edinburgh and Aberdeen.

In addition, the Scottish Ambulance Service operates a fleet of aircraft configured for neonatal transport. Neonatal units call a single referral line to request transport and all teams work to a standard of deployment within an hour for time-critical transfers.



The Scottish Ambulance Service also provide services to childbearing women who require transfer between care settings.

2.5 Scottish policy context

This Review sits within the overarching strategic context of the Scottish Government's 'Programme for Government'¹⁵ and contributes to the delivery of key Scottish Government priorities, including:

- Tackling inequalities
- Reforming public services
- Improving outcomes for the population

Policies of particular relevance include:

- Getting it Right for Every Child (GIRFEC)¹⁶
- The National Clinical Strategy for Scotland: 2016¹⁷
- Chief Medical Officer's Annual Report 2014-15: Realistic Medicine

2.6 Maternity and neonatal policy context

There are a number of key existing policy frameworks that have been central to the overall strategic context for the delivery of maternity and neonatal services in Scotland.

The Refreshed Framework for Maternity Care in Scotland: 2011¹⁸ outlines the aim of improving maternal and infant health and reducing inequalities in maternal and infant health outcomes. It also established principles and service standards for maternity care across Scotland.

The Neonatal Care in Scotland: A Quality Framework: 2013¹⁹, describes the delivery of high quality, evidence-based, safe, effective and person-centred neonatal care. Implementation of this framework is currently being supported through the three regional neonatal Managed Clinical Networks in the north, east and west of Scotland.

14 <http://www.isdscotland.org/Health-Topics/Maternity-and-Births/Births/>

15 <http://www.gov.scot/About/Performance/programme-for-government>

16 <http://www.gov.scot/Topics/People/Young-People/gettingitright>

17 <http://www.gov.scot/Resource/0049/00494144.pdf>

18 <http://www.gov.scot/Resource/Doc/341632/0113609.pdf>

19 <http://www.gov.scot/Resource/0041/00415230.pdf>

2.6.1 Quality and safety – audit and improvement activity

Scottish maternity and neonatal professionals work within a set of clinical and professional guidelines that define safe and effective service standards, including those provided by bodies such as the:

- British Association of Perinatal Medicine (BAPM)²⁰
- Royal Colleges
- National Institute for Clinical Excellence (NICE)²¹
- Scottish Intercollegiate Guidelines Network (SIGN)²²

There is a broad range of ongoing audit and improvement activity which aims to improve clinical standards and outcomes across Scotland:

- **The Maternal and Children's Quality Improvement Collaborative**²³ (MCQIC): was established in 2013 as a part of the Scottish Patient Safety Programme²⁴.
- **The Stillbirth Group** – established in 2011, aims to reduce the rate of stillbirth in Scotland by raising awareness of risk, commissioning research, and promoting bereavement support and information.
- **Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries in the UK (MBRRACE)** – established in 2013, it investigates maternal deaths, stillbirths and infant deaths with the aim of providing information to secure continuous quality improvement.
- **The National Neonatal Audit Programme**²⁵ (NNAP) – audits whether babies requiring neonatal care are receiving consistent, high quality care across the United Kingdom.

- The Royal College of Obstetricians and Gynaecologists (RCOG) **Each Baby Counts**²⁶ programme which aims to reduce the number of avoidable harmful incidents occurring during term labour.
- UNICEF UK²⁷ audits of **Baby Friendly Initiative** (BFI)²⁸ standards in maternity and neonatal units.
- The Royal College of Midwives **Better Births Initiative**²⁹.

In addition, there are a number of other audits and review tools that are currently being developed and progressed in Scotland. These include:

- The **National Maternity and Perinatal Audit**³⁰ – this audit will evaluate the UK quality of maternity and newborn care, and will be launched in 2017.
- The Standardised Perinatal Mortality Review Tool – the aim of this programme is to develop a tool to standardise review processes across the UK. The tool is expected to launch in 2017.

2.6.2 Breastfeeding support

All maternity units in Scotland are UNICEF Baby Friendly Initiative (BFI) accredited. Scotland's four largest neonatal units are near to full implementation of the neonatal BFI standards, and other units are working towards implementation. A Scotland-wide donor milk bank was launched in 2013 to provide equitable access to breast milk for the smallest and sickest infants across Scotland.

2.6.3 Perinatal mental health

The Scottish Government's new Mental Health Strategy, which will be published in early 2017, will set out shared priorities for action on perinatal mental health.

20 <http://bapm.org>

21 <https://www.nice.org.uk>

22 <http://sign.ac.uk>

23 <http://www.scottishpatientsafetyprogramme.scot.nhs.uk/programmes/mcqic>

24 <http://www.scottishpatientsafetyprogramme.scot.nhs.uk/>

25 <http://www.rcpch.ac.uk/child-health/standards-care/clinical-audits/national-neonatal-audit-programme-nnap/national-neonatal>

26 <https://www.rcog.org.uk/eachbabycounts>

27 <https://www.unicef.org.uk>

28 <https://www.unicef.org.uk/babyfriendly>

29 <https://www.rcm.org.uk/better-births-initiative>

30 <http://www.maternityaudit.org.uk>

CHAPTER THREE



OUR VISION

The future vision of maternity and neonatal services across Scotland is one where:

- All mothers and babies are offered a truly family-centred, safe and compassionate approach to their care, recognising their own unique circumstances and preferences.



- Fathers, partners and other family members are actively encouraged and supported to become an integral part of all aspects of maternal and newborn care.



- Women experience real continuity of care and carer, across the whole maternity journey, with vulnerable families being offered any additional tailored support they may require.



- Services are redesigned using the best available evidence, to ensure optimal outcomes and sustainability, and maximise the opportunity to support normal birth processes and avoid unnecessary interventions.



- Staff are empathetic, skilled and well supported to deliver high quality, safe services, every time.



- Multi-professional team working is the norm within an open and honest team culture, with everyone's contribution being equally valued.



THE MAIN UNDERPINNING PRINCIPLES OF THE REVIEW

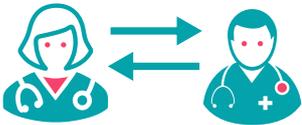
During the Review process, a number of underlying principles were agreed by the Review group as being fundamental to the future of maternity and neonatal services and these principles were utilised in all Sub-Groups to underpin their work and ensure a common approach:



People at the centre: care is planned jointly with women and families to meet their individual circumstances and needs where possible. Aiming to keep mothers and babies together as much as possible is at the forefront of decision-making.



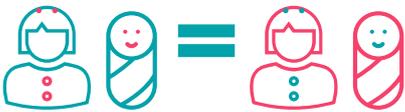
Working together: women, babies, families and all maternity and neonatal care staff are treated with equal respect, compassion and kindness and services have an understanding of the important impact of relationships on outcomes. Maternity and neonatal teams work cohesively, demonstrating an empowering culture where different views are evident and flourish.



Integrated services: continuity of care and carer is the norm, with care coordinated across different settings including home, community and hospital, and across the spectrum of services in health and social care.



Quality services: services place equal value on relationships, joint decision-making, and safe and effective care. This understanding of quality is recognised across the whole maternity and neonatal environment. Care is provided by confident and competent staff with the requisite skills for their area of expertise, aiming to deliver a person-centred, safe and effective service.



Reducing the impact of inequalities: every woman and baby are supported to access the services they need, whether these are provided locally, regionally or nationally. The needs of women and families who are vulnerable are recognised and proactively and sensitively addressed.



Evidence-based: a broad and comprehensive assessment of high quality evidence is used to plan care and services, taking account of the care continuum and the wider impact of pregnancy and childbirth on long-term outcomes. Ongoing review of the evidence, including feedback from women and families drives continuous quality improvement.

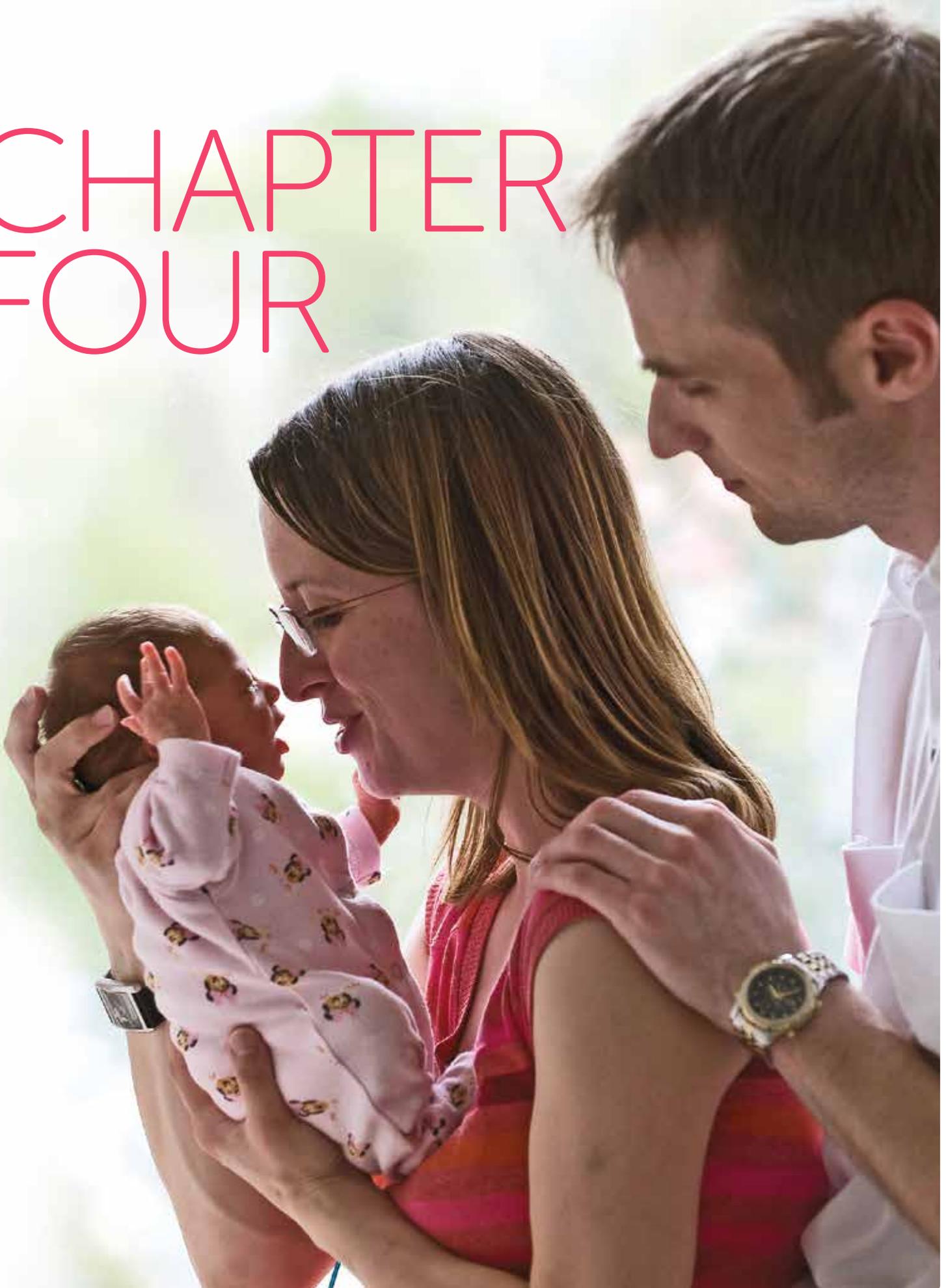


Prudent care: services meet population need and are sustainable over time, offering the best use of resources, through optimising the multidisciplinary team and maximising the use of community and acute assets and resources.



Optimising normal processes: care is based on the best available evidence and services avoid over treatment, using intervention only when clinically indicated. Strengthening women's own capabilities is an important component of care.

CHAPTER FOUR



THE REVIEW PROCESS

The Minister for Public Health announced the Strategic Review of Maternity and Neonatal Services in Scotland in early 2015. The Review focused on creating a refreshed model of care and approach to maternity and neonatal services and to examine choice, quality and the safety of those services in light of current evidence and best practice, in consultation with service users, the workforce and NHS Boards.



The Review team was requested to make recommendations for a Scottish model of care that contributes to the Scottish Government's overall aim of delivering person-centred, safe and effective care³².

The full remit for the review is detailed at Appendix D.

The Review sits within the context of the Scottish Government's Transformational Change plan, which aims to define a new approach to improving the health of the population. Its main focus is on prevention and tackling health inequalities, supported by high quality health and social care systems when and where people need them, and developing new models of care at local, regional and national level.

4.1 Establishing the Review



The Review group consisted of representatives from the key professional groups involved in managing and delivering maternity and neonatal services, representatives of the Scottish Government, staff side organisations, third sector representatives and academics working in maternal and infant health research.

The full membership of the Review group is shown at Appendix E.

4.2 Structuring the Review

The Review group established four Sub-Groups, bringing together over 100 professional and frontline staff from maternity and neonatal services, academics, the third sector and professional organisations, as well as service users.

The Sub-Groups covered:

- **Maternity Models of Care and Neonatal Models of Care:** reviewing existing service configuration and current models of maternity and neonatal care, in the national, regional and local context, considering relevant evidence and making recommendations for the future model of care.
- **Evidence and Data:** expert academics and professionals reviewing and analysing the current data and evidence (including best practice) to inform future service provision and the discussions of other Sub-Groups, in terms of quality, safety and choice, inequalities and resource.
- **Workforce planning and development:** reviewing the current workforce complement, key workforce strengths and challenges and considering the future workforce requirement for a safe and sustainable service across NHSScotland.

The Sub-Groups carried out their work between January and July 2016 and reported their recommendations to the Review group in August 2016. The full membership of the Sub-Groups is shown at Appendix F.

4.3 Engagement

Listening to the views of service users, staff and service providers was critical to the Review and an extensive engagement programme was undertaken in all of Scotland’s NHS territorial Board areas³². A series of meetings and events was held to gather the views of wider stakeholders, including professional organisations and the third sector.

The overall process included the following engagement activities:

4.3.1 With service users:

- The Scottish Health Council delivered a programme of public and service user engagement, across all NHS territorial Board areas to gather views from people who had used maternity and neonatal services in the last five years³³.

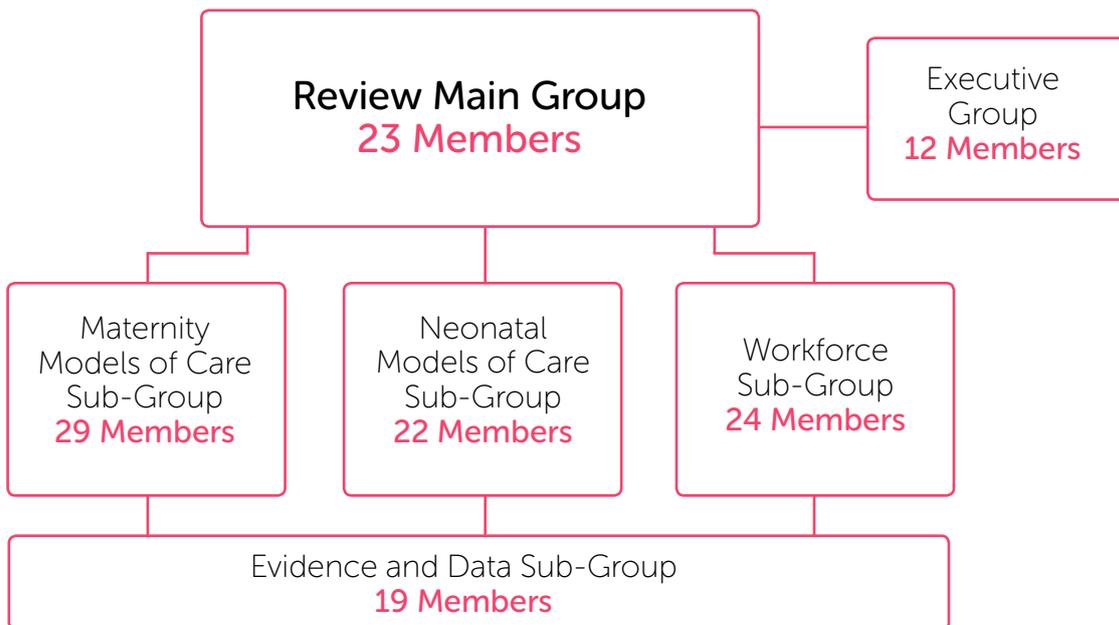


Figure 7: Review Governance Structure

- In addition, five bespoke service user events were arranged to engage service users in remote and rural areas, vulnerable groups and mother and toddler groups.
- Over 600 women and partners participated in the engagement and 16 babies were in attendance.

4.3.2 With the maternity and neonatal workforce:

- The Review Chair and a small team visited all 14 NHS territorial Boards to engage with frontline staff and management teams who work in maternity and neonatal services. These sessions provided an opportunity to hear a range of views from over 600 multidisciplinary staff, in both maternity and neonatal services, and also associated professionals such as sonographers, GPs, allied health professionals and health visitors.

4.3.3 With third sector organisations:

- Twenty-five organisations, including pregnancy and neonatal support organisations, fathers' groups and bereavement organisations attended a third sector event.

4.3.4 With other key professional groups:

- A range of other stakeholders were also consulted including the Scottish Partnership Forum³³, the Neonatal Surgeons Group, GPs and the Scottish Ambulance Service.
- Members of the Review group led on engagement with the professional groups that they represented.

4.3.5 Surveys of service users:

- An online survey³⁴ was undertaken of families with recent experience of neonatal care, with over 500 responses received.
- The Review group considered recent information from the Scottish Maternity Care Experience Survey: 2015 which described the experiences of maternity care of over 2000 women who gave birth in 2015.

4.3.6 Scope of the engagement process:

The overall engagement process included the following activities:

Workforce		Women and Families		
14 NHS Territorial Board visits to engage with staff	65 Focus groups facilitated by the Scottish Health Council in all NHS Board areas	500 Service users attended the focus group sessions	2000 Women shared their experiences of care Scottish Maternity Care Experience Surveys 2015	
41 Sessions to speak with maternity and neonatal staff in all NHS Boards	504 Responses to the Neonatal Experienced Survey	+5 Additional events Orkney, Shetland Edinburgh, Glasgow Forth Valley		
600 Staff engaged				
Professional, Third Sector Organisations and other Groups		Communications		
25 Voluntary organisations attended the third sector event	25+ Professional organisations and groups engaged in the Review: GPs, Royal Colleges, Scottish Partnership Forum, Neonatal Surgeons Group, Scottish Ambulance Service	41 Enquiries to the Review Mailbox	30 Blog posts published	

Figure 8: Scope of engagement

³³ <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

³⁴ <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

4.4 Communication

A monthly newsletter and blog site³⁵ provided updates to our stakeholders on progress during the course of the Review. A mailbox was established to gather comments and questions and over 40 enquiries and submissions were submitted from a range of individuals and organisations, which were shared with our Sub-Groups. Dedicated pages on the Scottish Government website³⁶ were kept up to date with information and news and over 30 blogs were posted during the Review.

4.5 Evidence and data

The critical importance of grounding the Review in a strong evidence base was recognised and agreed by the Review group. The Evidence and Data Sub-Group was tasked with reviewing the evidence base relevant to models of maternity and neonatal care. The work was conducted by researchers with extensive experience in systematic review and evidence synthesis, working closely with all the Sub-Groups to ensure relevance and timeliness. The key messages from the evidence summaries are included in the following sections.

The Evidence and Data Sub-Group produced a series of eight efficient evidence reviews, with input from colleagues on the other Sub-Groups. A protocol for a systematic, efficient, and quality controlled review process was developed and agreed. On the completion of each review, a summary of the relevant evidence and key messages was developed and organised according to the categories of the framework for quality maternal and newborn care from the Lancet Series on Midwifery framework for quality maternal and newborn care (Renfrew et al., 2014)³⁷. These efficient reviews have sought all relevant evidence, assessed it for quality, and produced an accessible summary relating to the delivery of services. They provide our evidence base for the Review.

4.6 Outcomes from the engagement process

The engagement process with mothers, partners and families has provided significant insight into the current service provision. It has also identified areas where improvements should be made. Staff have highlighted many examples of innovative practice and service provision where teams across NHSScotland are working together to provide high quality, person-centred care. They also outlined opportunities for improvement.

What women and families told us about services

In general, the quality of maternity care in Scotland is rated very highly by service users, with 92% of women rating their antenatal care as 'good or very good'³⁸. Women reported very positive experiences of their care and treatment, during that phase of their maternity journey. However, there were other key elements of overall maternity care which were viewed as less positive.

Many parents of babies who received neonatal care expressed gratitude to the staff for the life-saving treatment their babies received, the positive atmosphere in the neonatal units, and the commitment and compassion of NHS staff. They also appreciated the support offered in planning for their discharge.



35 <https://blogs.gov.scot/child-maternal-health>

36 <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

37 <http://www.thelancet.com/series/midwifery>

38 <http://www.gov.scot/Resource/0049/00490953.pdf>

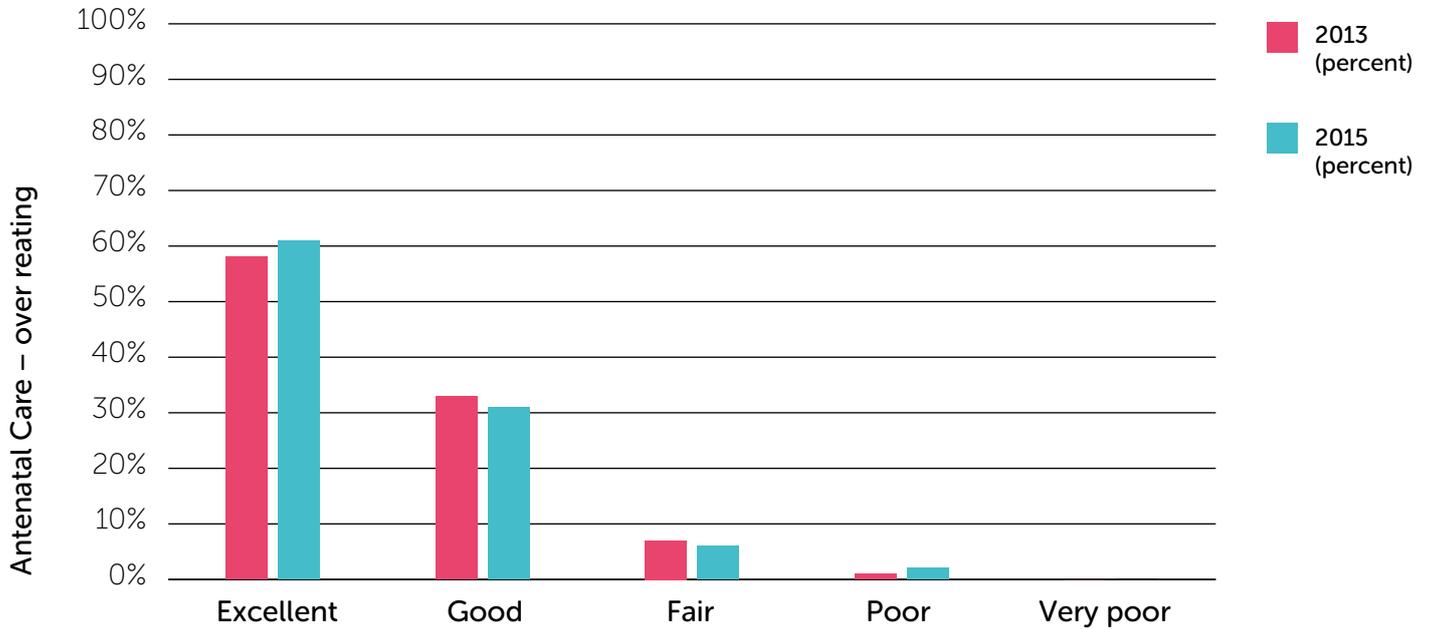


Figure 9: Overall rating of antenatal care
 Data source: Scottish Maternity Care Experience Survey: 2015

In the overall engagement process, service users and families also highlighted a number of areas where they considered improvements could be made.

What we heard:

CONTINUITY OF CARER

A strong theme was a desire for continuous care and continuity of carer throughout the maternity journey, delivered by the same person throughout pregnancy, labour and birth, and following the birth. Women indicated that they wanted to form a relationship with the professionals caring for them and preferred to be cared for by one midwife, or a small team of midwives, through their maternity journey to ensure consistent practice and advice.

‘The midwives were excellent, but I never saw the same midwife twice – it was a different midwife every time. I was recovering from surgery and it would have been beneficial to see the same midwife.’

Scottish Maternity Care Experience Survey: 2015

FAMILY-CENTRED CARE

Partner support

Many women stated that they wanted to have their partners with them throughout their labour and birth. However, only 58% of women reported that their partners were able to stay with them during their postnatal stay in hospital. Where partners were fully involved, including being able to stay with mothers before, during and after the birth, women stated that their presence assisted in reducing anxiety and isolation, with partners providing emotional and practical support to women in hospital.

The partners who contributed to the engagement programme indicated that they wanted to be an integral part of the whole antenatal, intrapartum and postnatal journey in order to promote family attachment and bonding and support the mother with personal and baby care.

FAMILY-CENTRED CARE – CONTINUED

Breastfeeding

Many women described good support and advice in relation to breastfeeding. However, others described a more challenging situation with limited support both in the early period after birth and on an ongoing basis. Women felt it was important that their decision to breastfeed or formula feed their baby was respected and supported.

'I had difficulties breastfeeding and I felt like I had too many people telling me different ways of trying to breastfeed. Although they were just trying to be helpful, I just needed a bit of consistency.'

Scottish Maternity Care Experience Survey: 2015

Bonding and attachment

Many women with babies in neonatal care reported that they would have preferred to have the opportunity for more direct skin-to-skin contact with their baby. They suggested that good staffing levels, space, privacy and a more comfortable environment would assist in this aim.

Emotional support

Parents of babies in neonatal care will often need additional emotional support, and families expressed great appreciation of the care and compassion demonstrated by staff in supporting them at this difficult time. Many parents wanted more information on how to access counselling as this was provided in a range of ways across Scotland, with a lack of uniformity and approach.

Bereavement

Bereaved parents expressed the need to be supported in a personal and sensitive manner, depending on their individual circumstances, with a clear desire to have services provided for them in discrete, dedicated areas to allow them the space and privacy to grieve.

PERSON-CENTRED CARE

Throughout the whole pregnancy journey, women stated that they would value further information to assist them in their decision about the place of birth and, in particular, on pain relief. A minority reported being offered limited, or no choice over their preferred place of birth. Women also stated that they sought modern facilities within their chosen birthing environment, including hypnobirthing and birthing pools and wanted home birth to be a real option.

Following birth, practical help and assistance with personal care, baby care and infant feeding were important to women. The area of service where women commented most negatively related to postnatal care, with women reporting not always getting the help and assistance required due to perceived pressures on staff time and a lack of continuity in their care.

'The midwives on the ward were too busy and did not have time to help with bottle feeding, changing nappies or bathing. As a first time mum, I felt that I needed more assistance.'

Scottish Maternity Care Experience Survey: 2015

Women and families were anxious about being separated from their baby and wanted separation to be minimised. Mothers told us that being in a postnatal ward without their baby, alongside other mothers and babies was upsetting, and that they would have preferred to have been cared for nearer their own babies.

The need to improve communication and information in relation to the progress of their baby was a key issue for many families who highlighted a lack of clarity which caused additional stress. Parents reported inconsistencies in advice and approach to parental involvement as being of concern as they wanted to be fully involved in the care of their baby, whilst recognising that might not always be possible.

ACCESS TO SERVICES

Local access to services was an important issue for many women. In remote and rural areas, women reported having to travel long distances for appointments while, in a more urban environment, local transport arrangements were highlighted.

In island communities, there was a desire to have as much care as possible provided locally, although women did recognise the need to ensure that services were safe and sustainable. Travel challenges leading to lengthy periods away from home were particularly difficult for families with other children or caring responsibilities.

For parents of babies in neonatal care, both travel time and expense were highlighted as an issue, and this was also highlighted in the Bliss 2014 report: 'It's not a game'³⁹. Parents told us about complex and lengthy journeys to get to the unit, often with limited access to local accommodation. These concerns disproportionately affect those on lowest incomes and those living furthest from the unit.

'My boyfriend had to book a hotel to stay in for four nights, which cost us money we didn't have.'

Scottish Health Council Report: 2016

DIGITAL INFORMATION AND TECHNOLOGY

Women and families want to be able to access high quality, up-to-date, unbiased electronic information about pregnancy, birth options, caring for their baby, and neonatal care. Women and families expect information to be available on the internet or through technology such as mobile apps, rather than through the traditional paper-based routes. There is also an expectation that all health professionals will be able to access relevant maternity and neonatal records to facilitate understanding and to improve communication. A general desire was expressed to move towards electronic records and away from paper-based systems to enable smoother care transitions.

COMMUNICATION

The quality of communication has also been a recurrent theme in the feedback from women and families. Many women reported good communication from staff, particularly during labour, and spoke very positively about the caring and compassionate approach from staff. Professionalism and confidence in the staff were all highlighted as being important during labour and birth and, generally women reported that the current service did deliver on these key elements of care.

However, some women stated that staff had limited time to listen and respond to their concerns and, in particular, younger mothers reported not being listened to. Women described seeing many different staff during their pregnancy and being frustrated at continually having to repeat their story. Inconsistencies in communication between community and hospital staff, and inconsistent advice from different members of staff within a care setting were also highlighted.

Women whose first language was not English raised the importance of translator support, and the need for information to be provided in their own language.

WHAT HEALTHCARE PROFESSIONALS TOLD US

NHSScotland healthcare professionals and frontline staff have immense pride in the service that they provide and staff showcased their examples of innovative good practice happening in NHS Boards. Staff did, however, highlight a number of challenges in delivering services in the current manner.



What we heard:

MATERNITY AND NEONATAL STAFF

Maternity care staff highlighted:

- Continuity of carer is important but challenging in the current system, particularly for women with complex care needs.
- National care pathways are seen as overly restrictive and inflexible, with too many women categorised as high risk.
- The issue of the sustainability of some of the rural community maternity units, especially where a very small number of women are accessing the facility, with the consequent challenges of staffing and skills maintenance.
- The sustainability/desirability of continuing to offer home birth in view of the declining home birth rate in some areas needs further consideration.
- The rate of medical intervention in maternity care is increasing, and there is a rising caesarean section rate, with the associated implications for women and babies.

Neonatal staff described some very positive developments in promoting safety, such as daily safety huddles and innovations in terms of family-centred care, such as the development of transitional care to keep mother and baby together.

However, they also reported a range of issues, including:

- Pressures on availability of neonatal cots, often linked to staffing challenges, and the complexities associated with arranging transfers.
- Improvements needed in facilities available for parents, especially when babies were in units for lengthy periods, or were being treated outwith their local area.
- The consistency and quality of information for parents and the need for wider use of electronic technology.
- The need for an improved model of neonatal community care to allow babies to be discharged earlier with appropriate support.
- The variability in the provision of Allied Health Professionals across Scotland.

DIGITAL INFORMATION AND TECHNOLOGY

Emerging innovative practice relating to the use of information and information technology was evident in a number of NHS Boards. However, during the engagement process staff indicated that there was significant further potential in this area including:

- A more structured and systematic use of telemedicine to enhance care for multi-professional and service user consultations and for education and training.
- Clarity on the use of data and streamlining of the multiple requirements for data entry, including the development of a national dataset and dashboard to allow benchmarking across Scotland to drive improvement.
- Improvements to communication and information sharing within different care settings in NHS Boards (particularly community and acute care), and between NHS Boards.
- The development of a uniform electronic maternity record.

QUALITY AND SAFETY

In relation to quality and safety, staff also highlighted a number of areas where there had been significant improvements in recent years. In particular, they indicated that there had been a renewed focus on quality and safety with daily safety briefings, huddles and handover meetings being routinely in place which served to promote communication, teamwork and patient safety.

Staff also raised a range of other issues including:

- The positive benefits of multidisciplinary training in developing team working and a mutual understanding of roles and responsibilities.
- The need for a rigorous approach to learning from adverse events across the full range of maternity and neonatal services.
- The need to ensure that the routine examination of the newborn is systematically undertaken to a high standard and audited.

WORKFORCE

Staff outlined a range of forward-thinking, flexible and innovative approaches to staffing maternity and neonatal services, and this was particularly evident in more rural areas. It was also evident that existing midwifery and neonatal workforce planning tools are being widely utilised to assist in meeting the needs of the service.

However, a number of key staffing issues were also highlighted:

Sustainability of service delivery

- Increasing workload and the impact on contact time with women, related to the expansion of the midwifery role.
- In relation to medical staffing, covering middle grade rotas and the impact of resident consultant cover were raised as important issues.
- Recruitment and retention in a number of staff groups, in addition to the age profile of the midwifery and neonatal nursing workforce, was identified as a real concern in some areas.
- The availability of a range of staff to support maternity and neonatal services, including allied health professionals, sonographers and administrative and clerical staff.

Skills and training

- The need for a clear career pathway from registration to enhanced clinical roles in midwifery, including the development of advanced practice roles.
- Variability in the models of theatre staffing with a clear need to ensure adequately trained and dedicated staff are in place.
- The need for protected time for training of nurses and midwives.
- The Neonatal Qualified in Speciality training course is highly regarded by staff and should continue to be available.
- A requirement for further clarity and development of the roles of support staff, with the associated training needs.

WORKFORCE – continued

Remote and rural issues

- The need for a broader, and different, skillset in remote and rural settings to deliver local services safely.
- The need to develop locally accessible training and learning options for staff to maintain essential skills, and expanding the use of technology for training. The ability to formally rotate through larger units to maintain and develop staff expertise in a systematic manner was highlighted.
- Recruitment and retention is particularly challenging in remote and rural areas.

WHAT THIRD SECTOR ORGANISATIONS TOLD US?

During the engagement process, the Review team met with a number of third sector organisations providing a range of services. They provided a key insight to the challenges faced by their organisations in seeking to support families in their maternity and neonatal journey.

Awareness

One of the key issues highlighted by third sector organisations related to their ability to ensure that families were fully aware of their services and how to access them. They indicated that this was often a real challenge and stated that a uniform approach to raising awareness would greatly assist in linking their services to families who could benefit from their input.

Bereavement

A number of third sector organisations provide specific services for bereaved families and they want to ensure that their services are highlighted to bereaved families at the right time and in a sensitive manner. NHS services are provided in most NHS Boards but their precise configuration is variable and third sector organisations believe that they are well placed to support families, provided those families are made aware of their services at the right time.

4.7 Outputs from evidence

4.7.1 Efficient evidence reviews

Eight efficient evidence reviews⁴⁰ were developed and signed off by the Evidence and Data Sub-Group. Six reviews were prepared by the Evidence and Data Sub-Group and two by the Maternity Models of Care Sub-Group, in collaboration with the Evidence and Data Sub-Group.

The list of authors and sponsors of the efficient evidence reviews is detailed at Appendix G. A summary of the conclusions of all the efficient evidence reviews is detailed below. The full conclusions are shown at Appendix H.

DEFINITIONS OF MODELS OF CARE

No single, uniform definition of either a maternity or neonatal model of care was identified by this efficient evidence review. Crucially, in reports of maternity models of care, the primary focus of existing studies is on who is delivering the care and making decisions (i.e. midwife, obstetrician) and/or the location of the care. Whereas, in reports of the neonatal models of care, the focus is on whether or not the family was involved in the care and/or decision-making.

A generic definition was used to guide our thinking in considering models of maternity and neonatal care: 'an overarching design for the provision of a particular sign for the provision of a particular type of health care service that is shaped by a theoretic basis, EBP (evidence-based practice) and defined standard.⁴¹

Guided by this definition, an approach was developed to models of care that included consideration of a theoretical basis, the evidence base, and defined standards to inform the work. This approach distinguished between:

- Models of care (i.e. the overarching design and characteristics of the service).
- Service configuration (i.e. numbers and types of units and their geographic distribution).
- Workforce (i.e. skill mix, numbers and distribution of staff).
- Characteristics of care providers (i.e. multidisciplinary working, education and training).

The categories developed by the Lancet Series on Midwifery framework for quality maternal and newborn care (Renfrew et al., 2014) were used to distinguish between **what** care is provided, **how** that care is organised, the **qualities** of respectful care, engaging women and families, and valuing normal processes, and **who** should provide that care. These characteristics are all important and have an impact on outcomes, but they act in different ways and all need to be understood and considered.

IMPROVING CARE, SERVICES AND OUTCOMES FOR WOMEN AND BABIES FROM VULNERABLE POPULATION GROUPS

This efficient evidence review identified the following key aspects of high quality care for women and babies from vulnerable groups:

- Continuity of carer is important to enable all women to develop respectful and trusting relationships, with non-judgemental staff who are empathetic and knowledgeable about the woman's individual needs.
- Positive staff attitudes and knowledge could be improved by culturally sensitive training and education on care for women from vulnerable groups.
- Effective communication, such as good interpersonal skills, is important, alongside providing assistance for women with low literacy or for whom English is not a first language.
- There should be a universal model of effective multi-agency care for all women. Women with particular needs – clinical, social and psychological – should have additional multi-agency services appropriate for and proportionate to their circumstances.
- Services should be highly accessible (i.e. multiple barriers addressed), and of a high technical quality for all women, with the ability to incorporate additional care for specific conditions.

MODELS OF MATERNITY CARE FOR CRITICALLY UNWELL WOMEN

This efficient evidence review indicated that both critical care and maternity/obstetric needs must be considered, with normal midwifery care continuing to be provided for all women, even when critically unwell. It was found that the potential to address this issue could, in part, be facilitated by training midwives in critical care skills and training critical care nurses in midwifery skills. This review confirmed that women and babies should be kept together whenever possible which is clearly in line with the expectations of mothers and families and will assist with bonding and attachment, as well as issues such as breastfeeding.

ORGANISATION OF SERVICES FOR CHILDBEARING WOMEN AND BABIES ACROSS THE CONTINUUM

A number of overarching principles were outlined within this efficient evidence review. In particular, it indicated that quality care should not dichotomise safety and choice. Instead, the service should ensure safety by implementing effective practices, tailoring care to the needs of women and babies, treating all women and babies with respect and compassion, and enabling the woman and her partner to make truly informed decisions.

The review also concluded that there should be a universal model of care that runs across the whole continuum from pregnancy through to the early weeks after birth. Throughout this journey, all women and babies should receive midwifery care and those with additional needs should receive the specific additional care they require, in conjunction with ongoing midwifery care. The care provided should aim to optimise the normal processes of pregnancy, labour and birth, postpartum, early life, and breastfeeding, and avoid unnecessary intervention.

The review also stated that care should be provided by a multidisciplinary team with the appropriate skill mix to care for a woman and baby's individual needs. This care should be integrated across the continuum – from pregnancy to postpartum – and across all settings, from home to hospital.

MODELS OF CARE FOR INFANTS REQUIRING NEONATAL SERVICES AND THEIR PARENTS

The review identified a number of key principles for neonatal care, including the provision of a family-centred model of care which would provide families with the opportunity to have as much contact with their baby as possible. The review also concluded that, as far as possible, parents should be included in the decision-making process and in providing aspects of care for their baby.

The review found strong evidence for the provision of kangaroo skin-to-skin care for babies in neonatal units and early support for breastfeeding or feeding with breast milk, both of which result in improvements in clinical and psycho-social outcomes. Providing this routinely for all babies and parents will require changes in care and improved facilities for parents.

The review also indicated that rationalisation of intensive care services may provide the optimal outcomes for very sick infants.

The review also outlined that, when moving babies any distance from their home, services should consider supporting parents to remain in close contact with their infants and also facilitate a return to more localised care as soon as possible to ensure parental involvement can be optimised.

The review also indicated that low staffing profiles and over-crowding can be associated with poorer outcomes for infants requiring neonatal care.

Whilst studies on supported early discharge show positive results, further research to examine the safety, efficacy, acceptability, and resource implications are needed.

IMPROVING INTER-PROFESSIONAL WORKING

This efficient evidence review found that inter-professional education has positive effects on team working abilities as it offers participants the opportunity to gain a better understanding of their colleagues' roles, which has been identified as a barrier to good inter-professional working. In addition, opportunities for health professionals from different disciplines to regularly meet and discuss the needs of women and babies in their care has been associated with improved collaborative care, including management of risk.

The review suggested that this type of arrangement will also give health professionals a chance to understand each other's roles and competencies and develop trust.

This review also found that standardised approaches to improving communication, in terms of record-keeping for women and babies and interfaces between levels of care and in emergency situations (e.g. SBAR – Situation, Background, Assessment, Recommendation tool), can help make inter-professional working easier and reduce errors.

PLACE OF BIRTH

This efficient evidence review indicated that there is high quality evidence to support the promotion of real choice for women about the location of their maternity care through pregnancy, labour and birth, and following birth. Studies have demonstrated that midwifery care settings including home birth, freestanding midwifery units and alongside midwifery units, are a safe option for the majority of healthy women with uncomplicated pregnancies. Models of care should relocate and support maternity professionals to reflect the shift from hospital-centred to community-centred care and team systems should be implemented that support the provision of community-based maternity care, including intrapartum care.

The review concluded that evidence-based accessible information and decision aids for women, families and health professionals should be developed to enable real choice about the options available to them.

The review found that care should be delivered in appropriate community settings. The way in which these should be configured is likely to vary across settings and local developments should be evaluated.

CONTINUITY MODELS OF CARE

In line with the findings of the review that examined care across the continuum, this efficient evidence review concluded that midwife-led continuity models of care throughout the child birth journey have been found to have a range of benefits in relation to birth outcomes with no identified adverse outcomes. Where women require interdisciplinary team care due to complications, it is of benefit for them to also receive continuity of carer that enables them to build relationships with the health professionals providing their care.

4.7.2 Further data analysis

In addition to the efficient evidence reviews, Information Services Division, part of NHS National Services Scotland, conducted a series of data analyses as part of the work of the Evidence and Data Sub-Group including:

- International Comparative Analyses of Scotland's Perinatal Outcome Indicators⁴².
- The number of beds available in maternity and neonatal services and bed occupancy rates 2001-2015⁴³.
- The number of women giving birth in different types of facility, overall activity (attendances and admissions) in maternity services and total expenditure on maternity care 2012/13-2014/15⁴⁴.
- The number of babies admitted to neonatal care and total expenditure on neonatal care 2012/13-2014/15⁴⁵.
- The level of neonatal care provided (e.g. intensive care, high dependency) and characteristics of admitted babies (e.g. gestation, birth weight) 2012/13-2014/15⁴⁶.

These data were available to inform the work of the Sub-Groups.

4.8 Additional Evidence

Three additional pieces of work were generated by the Evidence and Data Sub-Group to inform the Review and implementation of the findings.

ECONOMIC CONSIDERATIONS

This paper sets out a framework and associated actions for consideration of the economic implications of the Review recommendations. It proposes that the main recommendations from this Review are analysed further in terms of which changes are likely to result in **cost savings**, and which will result in **cost increases** over time. It also proposes that a programme of work on **priority setting** is devised at national or NHS Board level on significant areas of resource use, informed by service users and clinicians.

MATERNITY AND NEONATAL HEALTH OUTCOMES

This commentary considered the consequences of short and long term pregnancy and birth health outcomes. It outlines how poor pregnancy and birth outcomes carry with them a 'long reach' throughout life exemplified by the:

- Considerable burden of lifelong disability among very low birth weight infants.
- Long-term consequences of undertreated postnatal depression and the impact on families.
- Short- and long-term impact of breastfeeding on a child and woman's health.

The social and economic consequences of these short- and long-term outcomes have been shown to be extensive. For example, as breastfeeding rates, like most other health behaviours, are socially patterned, this also has the effect of increasing inequalities in health.

42 <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

43 <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

44 <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

45 <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

46 <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

INTERNATIONAL COMPARATIVE ANALYSES OF SCOTLAND'S PERINATAL OUTCOME INDICATORS WHEN COMPARED TO OTHER EU COUNTRIES

This paper presented comparative outcomes across a range of indicators and concluded that:

- **Perinatal mortality** is consistently higher in Scotland than Scandinavian countries.
- **Maternal mortality** is uncommon in high income countries, and is slightly higher in the UK as a whole than other Western European countries.
- **Prematurity and low birth weight rates** are higher in Scotland than in Scandinavian countries.
- **Maternal smoking rates** are relatively high in Scotland compared to Europe.
- Scotland has the highest rate of **maternal overweight and obesity** of any of the countries studied.
- Scotland has a noticeably lower proportion of **spontaneous vaginal deliveries** than any of the Scandinavian nations or the Netherlands.
- **Home births** are generally uncommon in the countries studied, with the exception of the Netherlands (16.3% in 2010).
- Although Scotland has a high number of very **small maternity units**, collectively they account for a low proportion of all births.
- **Breastfeeding rates**, in particular at older infant ages, are particularly poor in Scotland.

CHAPTER FIVE



NEW MODEL OF CARE



There is high quality evidence to support the implementation of a model of care that provides continuity of carer throughout the maternity journey. Midwifery continuity of carer models have proven benefits in terms of improved outcomes for women and babies. Where women require additional care from the wider maternity team, it is even more important that they have continuity of carer from others involved in their care to build effective relationships. Women's desire for greater continuity of carer came across strongly in all surveys and consultations with service users as part of this Review.

5.1 Continuity of carer

Implementing a continuity of carer model challenges traditional approaches to NHS maternity care provision, requiring a substantial shift in resources to community services to deliver care which follows the woman and family.

'It worked on a team system, so although I didn't see the same midwife every time, I saw one of four on the team and this team followed me up after birth as well, so you got to know them all.'

Scottish Maternity Care Experience Survey: 2015

5.1.1 Proposed continuity of carer model

In the redesigned continuity of care model, all women will have continuity of midwifery carer from a primary midwife. The primary midwife will have a buddy midwife who can support her and provide cover for annual, and other, leave and by a small group of local community midwives who will support labour and birth, unless elective operative delivery is required.

Midwifery and obstetric teams will be aligned with a caseload of women and be co-located for the provision of community and hospital-based services. GP practices will nominate a link GP from the practice to provide a liaison point for the midwifery and obstetric team and will also provide some continuity of support and advice as needed to community midwifery and health visiting teams.

Specific details of the way in which continuity is managed are likely to vary across settings (e.g. urban or rural) and population groups (e.g. women with particular social vulnerability). Different ways of providing continuity should be audited and evaluated.

The primary midwife will normally have a caseload of approximately 35 women at any one time and be the first point of contact for women in pregnancy. She will undertake the booking history, then plan and provide the majority of the woman and baby's care across antenatal, intrapartum and postnatal care working from the community setting. The midwife will link in with the wider health and social care team as required.



In line with the approach of person-centred care, primary midwives and, where appropriate, obstetricians will discuss place of birth from booking and throughout pregnancy with the woman. The primary midwife will support the woman in her decision-making as her pregnancy progresses, and these conversations will be recorded in a shared plan. The approach will remain flexible to address changing needs and expectations at every stage. The planning will include consideration of expectations of post birth care, with the final decision on place of birth-based on the situation at the start of labour.

Where women have additional needs and require input from the obstetrician and wider team, the primary midwife will work in partnership with that team and provide continuous care for women and families. Women who need the input of an obstetrician, will have continuity of a primary obstetrician throughout their antenatal and postnatal care. For most women antenatal care will be offered in their local community. For some women the most appropriate place to have their antenatal care will be in hospital-based clinics. The primary midwife should remain allocated to these women to support their hospital-based antenatal care.

When a woman begins her labour, the primary midwife will normally be the first point of contact for assessment, by phone or in person. A small group of local community midwives will support this process to ensure 24/7 cover. The midwife will then be with the woman for labour and birth, whether at home or in a midwife or obstetric unit. Where an operative birth is planned, this will be provided by the core hospital midwifery team.

During pregnancy, postnatal care arrangements will have been discussed. Women and babies who are well may be discharged shortly after birth, in which case the midwife present at birth would normally arrange discharge and follow up. Where women and babies require admission to a postnatal ward after birth, care will be provided by the core hospital midwifery team, with the primary midwife fully informed and aware.

The primary midwife will plan and provide postnatal care in the community, undertaking postnatal checks of mother and baby, including routine examination of the newborn, in partnership with support staff and GPs as necessary. The care of women and babies will normally be transferred to the health visitor from 10 days after birth, depending on the family's needs, with the GP providing ongoing care throughout.

Where women and babies require admission to a postnatal ward after birth, care will be provided by the core hospital midwifery team until discharge back to the care of the primary midwife.

5.1.2 What does this mean for our workforce?

The existing midwifery and obstetric workforce will be reconfigured to work in a way that supports continuity of care for all women. The majority of midwives will work within the community setting to provide continuity of carer, with a small core team of midwives deployed within the hospital setting to provide inpatient antenatal and postnatal care, and a level of intrapartum support. This new model of care represents a fundamentally different way of delivering services and, thus, further detailed planning will need to be undertaken in partnership with staff to design the new service and ensure a sustainable model is implemented.

Education and support for all staff will be needed to adapt to the new way of working. Additional training may be required for community-based midwives, for example in caseload management, provision of individual elements of the care journey, and routine examination of the newborn. The new employer-led model of clinical supervision will provide additional support for all midwives with this transition through facilitated reflective practice. To prepare staff to work differently, additional resources will be required to develop and implement national approaches to training and education that can be delivered in NHS Boards-based on assessment of local geography and population needs.

RECOMMENDATIONS

1	Every woman will have continuity of carer from a primary midwife who will provide the majority of their antenatal, intrapartum and postnatal care and midwives will normally have a caseload of approximately 35 women at any one time. Where women require the input of an obstetrician in addition to midwifery care, they should have continuity of obstetrician and obstetric team throughout their antenatal and postnatal care. Midwifery and obstetric teams should be aligned around a caseload of women and should be co-located for the provision of community and hospital-based services. Early adopter NHS Boards should be identified to lead the change in practice. Implementation should ensure appropriate education, training and development and realignment of resources is achieved, recognising the potential for additional resources to be required during implementation.
2	Every woman will have a clear birth plan developed for her needs, which is updated regularly throughout her maternity journey.
3	GP practices should nominate a link GP for the practice to provide a liaison point between the midwifery/obstetric team, the health visiting team and the practice.



5.2 Person-centred maternity and neonatal care

The vision for maternity and neonatal services across Scotland is one where all mothers and babies are offered truly family-centered and compassionate care, recognising their own unique circumstances and preferences.

The benefits of keeping mothers and babies together, and of family-centred care, are clear, including:

- facilitating bonding and attachment and, therefore, the development of the family unit
- enabling breastfeeding
- reducing anxiety through good communication
- empowering parents, by maximising their opportunities to look after their infants and making wraparound services accessible for those who need them

It has been clear during the Review process that families want to stay together throughout the maternity and neonatal care journey, including during pregnancy and birth. They want to receive their care as close to home as possible, although there is recognition that, for some aspects of care, there will be a need to travel, depending on the particular situation.

Under any circumstances, women want to receive their postnatal care as near to their baby as possible, and they want more opportunities for skin-to-skin care with their baby. Women have also consistently indicated that they would value the presence of their partners with them in the early days of their baby's life, whether in maternity or neonatal care. The importance to mothers of compassionate and respectful care is clear, as is the provision of relevant information on all aspects of care to allow them to make informed choices.

A number of NHS Boards highlighted their approach to family-centered care, including the provision of accommodation for partners following the birth of their baby and for families with babies in neonatal care. In addition, in some areas, parents are being supported and encouraged to lead the care of their newborn.

5.2.1 New model of person-centred care

It is essential that services regard mother and baby as one entity and truly put the mother, baby and family at the centre of service planning and delivery. This fundamental theme runs throughout this report, and every recommendation is predicated upon it. This means that, at every stage of the postnatal journey, no matter how complex the care, the mother and baby should stay together and barriers to this occurring should be removed.



5.3 Family-centred care

Focusing on women, partners and families at the centre of care planning empowers them to be involved in, and committed to, decisions about their care and that of their baby. Maternity should be co-designed with the mother from the outset, with information and evidence provided to allow her to make informed decisions in partnership with her family, her midwife and the wider care team as required.



Fathers and partners should be routinely offered the opportunity to participate in discussions and decision-making during care and parents should be encouraged and supported to have a leading role in routine care of their baby.

Neonatal care should be co-designed with parents. Parents should provide as much practical care as possible for their baby, and be involved in decision-making throughout.

5.3.1 Support and accommodation for families

There is a clear need to examine in a systematic manner the facilities and support that is available to mothers and wider families.

Facilities are available to accommodate partners in postnatal care in some areas, but provision is not uniform and further attention is required to this important area which would benefit families and also provide some assistance to staff in supporting mothers.

KEEPING FAMILIES TOGETHER

In some pregnancies complications can arise. In Mrs B's case, she had a difficult pregnancy and suffered high blood pressure. This resulted in her being induced early. Her newborn daughter had some difficulties in her first few hours and she and her mum were quickly transferred to the transitional care unit for additional care.

'I received phenomenal support from the staff when expressing milk, tube feeding and even bathing my tiny daughter. They gave me lots of advice, emotional support and outstanding care to enable me to bond with my daughter. They encouraged me to do as much of my baby's care as I could.'

Mrs B's husband stayed with them at the hospital and over the course of the following days, the staff celebrated small achievements with the parents as their daughter became healthier and supported them emotionally when minor setbacks occurred.

'It was great having my husband stay with us on a couple of occasions. This enabled us to bond as a little family. The support we received assisted our transition home greatly.'

Source: Patient Opinion



Many NHS Boards already provide accommodation for women who have to travel to access maternity care. However, this is not universal and this provision should be available in all NHS Boards receiving women who have long distances to travel to access specialist services.

Neonatal facilities should provide sufficient emergency overnight accommodation on the unit for parents with babies in neonatal care, with alternative overnight accommodation being made available nearby for parents of less critically ill babies. There should be facilities for parents to allow them to be on the unit with their babies as much as possible, including facilities for kangaroo skin-to-skin care and breastfeeding/breastmilk feeding.

This Review also recognises that there is not currently uniformity of local policies to support travel, accommodation and living expenses for these families. An urgent national approach to this issue is required to avoid undue hardship for families and to provide a truly person-centred service.

5.3.2 Information for parents-to-be

We heard about the importance of seamless communication and consistent information for families and that this was improved where there was continuity of care and carer. Families found conflicting advice challenging and described examples in relation to a range of issues, including breastfeeding. We heard about the need for nationally consistent information to support families with decision-making, for example in relation to place of birth.



Early access to antenatal education improves outcomes in maternity care. Antenatal education is important to promote positive health behaviours and support parenting. High quality prenatal and antenatal education must be available to all, and NHS Boards should continue to promote and improve early access to antenatal education, including parenting, physical and emotional wellbeing, tailored to local populations.

In Scotland, the Ready Steady Baby⁴⁷ publication gives a range of information to new parents around pregnancy, birth and looking after a new baby. A project to redevelop the Ready Steady Baby and the Ready Steady Toddler⁴⁸ resources for parents is underway. The redesign of Ready Steady Baby will take account of the findings of this Review.

In addition, the development of complementary evidence-informed web or app-based tools should be developed to maximise the accessibility and supportive decision-making around place of birth.

While having national resources can support choice and decision-making, all maternity professionals have a critical role in ensuring that women and families have timely and evidence-based information at any point in their journey which is tailored to their unique circumstances. The continuity of carer midwifery model will significantly improve communication and contribute to reducing variation in information.

47 <http://www.healthscotland.com/documents/25847.aspx>

48 <http://www.healthscotland.com/documents/25852.aspx>

INVOLVING PARTNERS

Many women told us of the benefits of having their partner stay with them in hospital after giving birth as this helps to promote family attachment and bonding and they welcome the additional support with personal and baby care.

For Mr and Mrs A, they felt that their experience post birth could have been better. After his wife gave birth to a baby girl by caesarean section, Mr A was able to stay with his wife and new baby all day, however he was asked to leave the maternity ward at 9pm.

'I was keen to be on hand whenever my wife needed me to do anything for her and to support her emotionally, pass her our daughter for feeding, and to change her nappy. During the first night of my wife's stay, she was able to buzz for help and a midwife or support worker would usually come and help.'

Mrs A decided to stay in hospital for a second day as she was in a lot of pain. Her husband was on hand to help out during the day however after he left that evening his wife got very little help. There didn't appear to be many staff on the ward for the night shift and a lot of women and babies needed looked after.

Their daughter wouldn't sleep, his wife got no sleep and she needed emotional support and help with the baby. At one point Mr A called the ward to ask if he could come and get them but was told that this was not permitted during the night.

'The staff did their best and they did it warmly however the maternity ward should be set up so partners can stay to help. I could easily have slept in the chair to be next to my wife and daughter.'

Source: Patient Opinion



5.3.3 What does this mean for the workforce?

Whilst the overall approach to care will need to adapt to the new model, the primary delivery skills of compassionate care, treating women with dignity and respect, and the value of good communication are already well embedded within the NHS.

RECOMMENDATIONS		
4	Parents of babies in neonatal care should be involved in decisions about the care of their baby and in providing as much care for their baby as possible.	
5	Maternity and neonatal services should be redesigned to ensure mothers and babies stay together.	
6	All units should take a flexible approach to the presence of partners, to ensure that families can stay together, with suitable accommodation being provided and facilities to enable kangaroo skin-to-skin care and breastfeeding/breastmilk feeding.	
7	All neonatal facilities should provide emergency overnight accommodation on the unit for parents, with accommodation available nearby for parents of less critically ill babies.	
8	To reduce variation, an urgent review of the approach to expenses for families of babies in neonatal care should be undertaken to develop a nationally agreed policy.	
9	High quality prenatal and antenatal education must be available to all, and NHS Boards should continue to promote and improve early access to antenatal education.	
10	The redesign of Ready Steady Baby should reflect the new model of care and provide unbiased, consistent, evidence-based information about maternity and neonatal care.	

5.4 Multi-professional team working and pathways to care

Evidence suggests that there should be a universal model of care that runs across the whole care continuum, whereby all women and babies receive normal midwifery care (the continuity of carer model) and those with additional needs receive extra care, in conjunction with midwifery care.



Care will aim to optimise normal processes and avoid unnecessary intervention. Where women have additional care needs, care should be provided by a multidisciplinary team with the appropriate skill mix to care for a woman’s individual needs, integrated across all settings.

Evidence has identified the importance of effective multidisciplinary team working and culture on the normal birth process and the Morecambe Bay Report highlighted the negative contribution to pregnancy and newborn outcomes caused by a dysfunctional team. During this Review, women and healthcare professionals have described some examples of disjointed care where lines of communications could be improved.

Since 2009, risk assessment of pregnant women has been defined by the current NHS Quality Improvement Scotland Pathways for Maternity Care. These pathways are used to determine the type of care (obstetric or midwife-led) that women should receive. Staff and women have indicated that the existing national pathways for maternity care are perceived as too restrictive and not reflective of current maternity care, with too many women categorised as high risk and little potential for transfer either way between pathways once allocated at antenatal booking.

The importance of individualised, person-centred care and continuity of carer has already been highlighted, however a more systematic approach to person centred care will ensure that:

- Care is tailored to individual need.
- Care is provided by a well-organised team.
- Communication systems and processes are improved to ensure all professionals, including primary care teams, have up to date information.
- Referral systems are seamless.

5.4.1 Model of multi-professional team working

Multi-professional team working is an essential component of high quality care as outlined within the overall vision for the future.

The maternity journey is different for every woman, with some women requiring the involvement of a range of professionals in their care, with others requiring only midwifery care. It is proposed that there is a move away from the terminology associated with high/low risk care and midwife-led/obstetric-led care to redefine the new model in terms of continuity of carer and personalised team care. Risk assessment should become a more flexible and consistent tool to support a woman's pregnancy journey in partnership with the woman. This revised approach will require significant alterations to the current ways of working.

Antenatal care:

Routine antenatal care will be provided by the primary midwife. The midwife, in conjunction with the woman, will identify and agree referral pathways to ensure all aspects of a woman's circumstances are considered and addressed, including personal and lifestyle factors – a 'whole-person' approach.

Women who have complications will also see their primary obstetrician at points in the pregnancy journey, with the obstetrician and midwife finalising the care plan with the woman in order to provide co-ordinated and effective team care. This team care should be extended for women with additional care needs to include GPs and a wider range of medical or social care professionals, as required.

In a very small number of cases of women who have rare conditions of pregnancy or pre-existing conditions, or of babies with rare conditions, care may involve input from professionals who operate at a regional or national level, but again, this should be integrated with the work of the multi-professional team.

Obstetric ultrasound:

Obstetric ultrasound is a normal aspect of pregnancy care for all women, to date the pregnancy accurately at the 'booking scan' and to assess the fetal development at the 'fetal anomaly scan' at 18-22 weeks gestation.

In addition to the routine scans, women who choose to have screening for chromosomal disorders such as Down's Syndrome will be offered first trimester combined screening using a combination of fetal nuchal translucency assessment and maternal blood tests carried out at 12-14 weeks gestation.

A multidisciplinary team is required to deliver obstetric ultrasound. The majority of scans are performed by trained sonographers from either a radiography or midwifery background, with a smaller proportion of medical sonographers.

For several years there has been a recognised workforce shortage in trained sonographers, and this needs to be addressed at a national level, in addition to increasing the numbers of midwives with essential scanning skills.

Care during labour and birth:

In many cases, this will be provided by the primary midwife or the small team associated with her care. However, when women have additional or complex needs, or where medical intervention is needed, this will involve the wider team, including core hospital midwives, obstetric and anaesthetic input, and possibly a wider professional team for the most complex cases.

Postnatal care:

The primary midwife will provide postnatal care for mother and baby at home or in the community. For women and babies who have more complex needs or postnatal care requirements, the wider NHS and, where necessary, social care team will be involved, coordinated by the primary midwife.

In line with the proposed move to the continuity of carer model, the primary midwife will be a consistent presence throughout the woman's care journey, and will co-ordinate, in partnership with the named obstetrician where appropriate, access to any additional care required.

5.5 Redesigned personalised care

The existing care pathways will be revised to reflect a genuinely person-centred, individualised model of care, with the aim of moving away from categorising large groups of women as high or low risk, or care as midwife-led or obstetric-led. The approach will be based on a personalised care plan which is jointly reassessed regularly throughout the maternity journey. The personalised plan will describe the care being jointly agreed with the woman, and will include any appropriate wider team input.

This new continuous needs assessment approach will support and enable continuity of midwifery care, and focus on pregnancy and birth as a normal, physiological process. For women with additional needs, the continuous needs assessment will enable them to receive care from obstetricians and other professionals, tailored to their needs, in a multi-professional team care approach. The new personalised care plans should be kept under regular review to take account of emerging evidence.

5.6 Multi-professional working, culture and behaviours

Effective communication and good interpersonal skills are essential components of high quality care. A number of reports have identified challenges in relation to this issue.

The MBRRACE UK Report - Saving Lives, Improving Mothers Care: 2014⁴⁹ identified a lack of leadership in regard to care for women with multiple care needs, leading to women receiving inconsistent information and a lack of clarity over who should be involved in care. Difficulties in communication between primary and secondary care and between different levels of secondary care were also noted. Effective communication is a critical element of high performing teams.

It is important that women and families receive consistent advice and information, and that there is continuity of information between professionals and across levels of care. The role of the primary midwife will be important in supporting this process.

The Report of the Morecambe Bay Investigation: 2015 also focused on the important influence of workplace culture and behaviours on the quality and safety of the clinical care being provided, in particular during labour and birth.

A review of evidence and data identified the core principles for multi-professional working as:

- Effective communication between staff and sectors being essential, including access to clinical information and records.
- The need for trust and respect, and understanding of respective roles.
- Open and honest communication and support for challenge and disclosure.
- Shared opportunities for education and training.
- A need for clear and consistent advice for women and families.

Across NHSScotland, much has been done to promote the standards of behaviour that are acceptable and expected in each NHS Board, and to tackle bullying and harassment in the workplace. However, it is clear that further work would be beneficial to ensure that a revised approach to multi-professional team working truly does become the norm within effective, supportive teams providing excellent care, every time.

Existing programmes and frameworks are in place to develop multi-professional working and a positive, professional, person-centred culture in the NHS. In addition, the Royal College of Obstetricians and Gynaecologists and the Royal College of Midwives have launched an Undermining Toolkit⁵⁰ for improving workplace behaviour, which seeks to address the challenge of undermining and bullying behaviour in maternity and obstetric services.

5.7 New model of multi-professional working, culture and behaviours

The new model of care has mothers, babies and families at its centre. Work on improving multi-professional working, culture and behaviours will assist in building a healthy relationship between professionals and across NHS Board and professional boundaries. The proposed shift in care from hospital to community services will mean that the emphasis on team working across extended areas and good communication will become even more critical.

Strong and collective leadership is important to the development of a positive work environment, and senior staff across all disciplines have a role to play in describing the standards of behaviour required, demonstrating and promoting positive behaviours and tackling poor behaviours when they arise.

During the Review process, many examples of positive leadership cultures were demonstrated within NHS Boards. However staff indicated the need to further develop this important area to ensure that high performing teams are in place in every area in Scotland.

Teams require to develop a clear understanding of respective roles and competencies within the team, with shared goals in terms of care and service provision. Regular opportunities for contact, collaboration and sharing of information will encourage closer working, and will support learning and a greater understanding of each other's roles. Shared learning and development has been highlighted as a key aim of staff in many areas and, where it has been implemented, staff have spoken very highly of its positive impact.

5.8 Role of the third sector

The third sector provide vital support services to families across a wide range of issues, including peer support for breastfeeding and support for a range of families with specific needs. Staff, service users and third sector organisations have stated that there should be a more consistent mechanism to raise awareness of the services provided in order to ensure they are easily accessible to those who would benefit from their services. There does, however, require to be a clear mechanism to ensure staff can have confidence in the quality and legitimacy of the services being provided, to ensure they meet the needs of individual families.

A number of the larger NHS Boards have developed local directories or registers of third sector services that help staff to systematically inform families of the services available. A more systematic approach to such directories within NHS Board areas may assist in promoting these invaluable services, recognising that it is a significant undertaking to ensure they remain relevant and up-to-date.

50 <https://www.rcog.org.uk/underminingtoolkit>

5.9 Workforce implications

In order to ensure high performing teams are in place in every part of the system, multi-professional team working will need to be strengthened, again recognising that, in many areas, it is already evident and working effectively.

The new models of care will require an even greater level of team working and, therefore, there will require to be a systematic approach adopted to this important area of development within each NHS Board area. This process will require to involve professionals across a range of services, within NHS Boards, across NHS Board areas and with other public and third sector partners.

The importance and effectiveness of multi-professional team training has been highlighted and should be a model for all continuous professional development and skills development training. Multi-professional educational opportunities should also be explored at undergraduate and postgraduate level.

5.10 Accessible and appropriate local services

5.10.1 Community-based care

NHS and other public sector community services are continually evolving and are likely to change more rapidly over the next few years as a result of the integration of health and social care⁵¹. This will facilitate a move to a higher level of integration of professional teams, based on shared objectives, and increased co-location.

Women have indicated that routine services should be delivered as close to home as possible, to minimise disruption to normal family life and to avoid time consuming and stressful travelling.

In maternity and neonatal care, it is intended that integrated team care will, over time, take place in local community 'hubs'. These hubs would be local care settings for a range of services, designed around the needs of the service user. A community hub would become a facility where people feel they can identify with the services delivered from the hub, in an environment where they feel comfortable.

RECOMMENDATIONS

11	The 2009 Pathways for Maternity Care should be revised at a national level to facilitate an individualised approach to the management of risk through the development of a personalised care plan which is regularly reassessed.	
12	The new model of care is based on the absolute requirement to have high performing, multi-professional teams in place, and all NHS Boards should ensure that these teams are developed, and supported, to operate effectively and that this team development is afforded the highest priority at NHS Board level. Multi-professional team education and training opportunities should be explored and should include all levels of staff within NHS Boards.	
13	A directory of third sector services, available to maternity and neonatal service users, should be created, in partnership with third sector providers in order that all staff are aware of local and national level third sector support for families.	



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51 <http://www.gov.scot/Topics/Health/Policy/Adult-Health-SocialCare-Integration>

Community hubs should be designed on the basis of a local needs assessment to ensure they meet the needs of localities, rather than offering one standard model.

Ideally the hubs will include, for example, extended opening hours for appointments, and may, in some cases, include birthing facilities. Women will access the majority of their antenatal and postnatal care in these hubs, which may include scanning facilities and most midwives will work from these hubs.

Each NHS Board should undertake an individual assessment of the viability, scope, and potential impact of hubs within local areas to ensure that the hub meets the needs of localities, while balancing access needs and ensuring resources are used to their maximum effect. It is anticipated that a number of the community hubs will utilise accommodation currently housing freestanding midwifery units, while others may be located in community premises or other public sector premises. A national review of the functioning of these hubs should be conducted in due course, after they have been in place for a defined period.

Women with complex care needs may require to have some care provided in the hospital setting where there is access to a wider range of facilities, but, where possible, a significant proportion of services should be delivered through the hubs.

RECOMMENDATIONS

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| 14 | NHS Boards should redesign maternity services with a focus on local care, built around the concept of multidisciplinary community hubs, with the majority of women being offered routine care and services through these hubs. Each NHS Board should undertake a local assessment of the viability, scope and potential impact of hubs identifying local needs balanced with maximising benefit from resources. A review of the functioning of these hubs should be conducted, following an agreed national framework, after a defined period of operation. |
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5.10.2 The care journey, place of birth and choice

Evidence from a range of sources suggests that most women would seek to labour and birth as close to home as possible. Currently most NHS Boards are able to offer the choice of home birth, birth in a midwifery unit or birth in an obstetric unit.

Many services also offer a range of birthing aids such as birthing pools and hypnobirthing, and women have spoken very positively about the ability to access these services.

Evidence indicates that for women without complications, giving birth in a freestanding midwifery unit (FMU) or alongside midwifery unit (AMU) is as safe as obstetric units. For women without complications who are having second or subsequent pregnancies, home birth is as safe as birth in an AMU, FMU or obstetric unit. There is also good evidence that the provision of a less clinical, more homely environment for all women can reduce the use of interventions in labour and improve women's satisfaction, with no adverse impact.

However, at present, very few NHS Boards actively promote home birth as a realistic choice and in many areas, there is no clear differentiation between midwife and obstetric-led care, with both types of care being offered in the same place, with little, or no, differentiation of service. In addition, women have indicated that there is limited information available on the range of choice available to them to allow them to make an informed decision about their preferred location of birth.



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5.10.3 Place of birth

The revised approach to continuity of carer and the holistic approach to multi-professional team care have been recurring themes throughout this Review process and these apply equally to the antenatal, intrapartum and postnatal periods of care.

A truly person-centred labour and birth would support the development of a woman's own abilities in a relaxed, mobile and supportive birth environment. This overall approach would assist in developing a trusting relationship with care providers and play an important part both in improving outcomes and in reducing the need for intervention.

All women should have an appropriate level of choice in relation to place of birth and there are a number of choices that should be available to all women in Scotland:

1. Home birth
2. Birth in an alongside or freestanding midwifery unit
3. Obstetric unit birth



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Each NHS Board area in Scotland should ensure that they are able to provide the full range of choices, either within their own Board area, or, in the case of island Boards, through an agreed arrangement with a mainland Board. Obstetric and midwifery care can be provided in one unit, but with the development of an ethos and environment of homely, comfortable, low tech care without the overt presence of medical equipment. The precise configuration of units should be tailored to local needs, as rural locations will have quite different considerations than those in urban settings.

All birth settings should be comfortable, provide privacy and dignity, and promote active labour and birth, encouraging mobility. In addition to the range of place of birth options, all NHS Boards should aim to provide a range of pain relief for women, such as birthing pools, hypnotherapy, aromatherapy and epidural analgesia. The birth setting should support the normal birth process, regardless of where birth takes place, and will help women to maximise their natural capabilities for childbirth.

National, evidence-based information should be made available on the range of birth settings to support women's choice. In addition clear information in relation to services available locally should be provided for women.

The decision about place of birth should be made jointly by the woman, their primary midwife, and obstetrician in the case of women with more complex needs.

Where possible, women should be supported and encouraged, using available evidence, to aim for a normal delivery, free of intervention. Women without complications should be encouraged to consider birth in an alongside or freestanding midwifery unit. Those women with a previous vaginal birth and without complications, should be encouraged to consider home birth as an option. For some women, decision-making will need to be revisited during the pregnancy as circumstances change, but the emphasis should be on joint decision-making.

It is expected that, over time, this will lead to an increasing number of women being supported to have midwife-only care and a decreasing rate of intervention.

5.10.4 Type of birth

Much of the debate around place of birth focuses on the potential risks associated with childbirth, which can lead to apprehension for some women around birthplace choices. Although most women reportedly want a natural birth, the caesarean section rate in Scotland continues to rise in most NHS Boards, and is variable across Scotland.

There are a number of possible reasons for this rise, including women with increasingly complex pregnancies and births, safety of surgical intervention, and increased awareness of risks.

Whilst many of these interventions will be necessary and lifesaving, there is likely to be a proportion that are avoidable, as evidenced by the levels of variation. Factors contributing to the rising caesarean section rate should be examined, from both the clinical, and women's, perspective and optimal levels of intervention that balance risk and potential harm identified, in line with the Chief Medical Officer's Annual Report 2014-15: Realistic Medicine and the National Clinical Strategy for Scotland: 2016.

Birth in all settings requires well trained and supported staff, good decision-making, and the ability to respond appropriately to changing circumstances. The presence of a known and trusted carer, a skilled midwife backed up by a supportive multi-disciplinary team, mobility in labour and availability of a range of pain relief methods are all factors which will encourage a normal birth. All women should be cared for in a way that supports and encourages them, and builds their self-confidence.

For some women, the safest option will be a delivery by caesarean section, either agreed in advance or as an emergency procedure. Caesarean delivery should only be provided if clinically indicated, and women should still experience continuity of midwifery care throughout, and after, the birth.



It is essential that women have the opportunity to discuss fully their preferred birth plans with their primary midwife, and obstetrician if needed, well in advance of the birth date in order that they have ample opportunity to consider the options, discuss their preferences and have all the information they require to make an informed choice.

No matter what type of birth, the immediate post birth period is a critically important time for family bonding. Post birth skin-to-skin care is already very well established throughout Scotland, and should continue to be promoted. Parents should also be able to enjoy a period of peaceful, uninterrupted time with their baby immediately post birth to promote bonding and attachment.

5.10.5 Sustainability of choice

Many NHS Boards already have freestanding midwifery units which are operating effectively and provide an excellent service. Some NHS Boards are, however, observing a decline in birth numbers in these units. It will be important to seek to maximise the potential of these units, both in terms of intrapartum care, but more widely, they may act as the focal point for the proposed community hubs.

NHS Boards should undertake an assessment of the viability, and scope, of freestanding midwifery units against an agreed national framework to ensure consistency. This should be considered in conjunction with local service users, with a view to balancing access needs with the need to ensure resources are used to their maximum impact. These local assessments could be undertaken across traditional NHS boundaries where geographical considerations lend themselves to this approach.

In addition, in most NHS Boards there is a decline in the home birth rate. However, numbers are increasing in those areas where home birth is being actively promoted, and where there is a dedicated home birth team.

The aim of this Review is to describe a new model of care that all women should receive, however, in view of Scotland's unique geography and demographics, it is not necessarily appropriate to describe a single uniform model. It is for individual NHS Boards to design and redesign services in their area to fit with the model.

The key recommendation from this Review is that all NHS Boards should provide all women with a full range of choice of place of birth and that this choice includes the options, as outlined above, of home birth, midwife-led care and a hospital birth. The essential elements being the provision of a relaxed and supportive environment for care that promotes natural, person-centred childbirth.

RECOMMENDATIONS

15	Each NHS Board should ensure that they are able to provide the full range of choice of place of birth within their region. National, standardised core information should be made available on the range of safe birth settings to support women's choice.	
16	All NHS Boards should aim to provide a range of pain relief for all women.	
17	Caesarean delivery should only be provided if clinically indicated and factors contributing to the rising caesarean section rate should be examined, from both the clinical, and women's, perspective, with optimal levels of intervention that balance risk and potential harm being identified.	
18	In conjunction with service users, NHS Boards should undertake an assessment of the viability, and scope, of freestanding midwifery units against an agreed national framework to ensure consistency, with a view to balancing access needs with the need to ensure resources are used to their maximum impact.	

5.10.6 Post birth care for well mothers and babies

Currently many women go home very shortly after birth, or have a short inpatient stay in postnatal care (one to two days). All women will receive postnatal care in the community, from their primary midwife (or buddy) and, where necessary, their GP, and will usually be discharged from midwife care around 10 days after birth.

A number of women indicated during the Review that their experience of postnatal care in hospital could be improved. While positive experiences were described, other instances were outlined when staff had limited time to support women and their babies. Evidence suggests that the introduction of the continuity of carer model is associated with higher maternal satisfaction after delivery and thus, the implementation of this new model would begin to address some of the concerns. In addition, evidence also suggests that early discharge can be safely achieved.

Women will discuss their postnatal expectations with their primary midwife as part of the antenatal birth planning process to ensure it meets their needs and preferences. In routine circumstances, families should be encouraged to go home as soon as possible following birth. Women who stay will receive care from the core team of hospital of midwives and support staff-based in the hospital.

The mother and baby will continue to receive postnatal care in the community from midwives, with the frequency and content agreed with their primary midwife on the basis of need. The new model of community care, including community hubs, will include a role for support staff and they will assist midwives in the provision of personal care for the mother and baby, including breastfeeding support and parenting skills.

5.10.7 Women with additional postnatal care needs

A number of women and babies with additional care needs may need to stay longer in hospital for clinical care. Immediate postnatal care will be provided by the wider team of core hospital midwives, obstetricians and other professionals.

RECOMMENDATIONS		
19	Options for postnatal care should be discussed with women throughout pregnancy and a plan agreed which takes account of their unique circumstances.	
20	For the majority of women, all key processes should be aligned and streamlined to ensure early discharge is the norm.	
21	The provision of high quality routine postnatal care should be afforded a high priority, with staffing models being reviewed in conjunction with the introduction of the continuity of carer model.	

5.10.8 Post birth care for mothers and babies with moderate additional care needs

The greatest proportion of babies currently admitted to neonatal units comprise late preterm (34 – 36⁺⁶ weeks gestation) and term infants with moderate additional care needs. The number of these babies is increasing nationally and this increase is anticipated to continue⁵². Late preterm infants commonly require a moderate additional level of support to maintain temperature and establish breast, or formula feeding, and they more commonly require treatment for jaundice.

Currently, many of these babies are admitted to neonatal units but, most of them could be cared for with their mother on postnatal wards, or even at home, with additional support. This type of transitional care arrangement would keep mother and baby together and reduce neonatal unit admissions of both late preterm and term infants.

Those units which have operated a model of postnatal neonatal care or transitional care report shorter stays for mother and baby and increased breastfeeding rates, with improved quality of women's experience.

Transitional care, offering postnatal care for mothers and enhanced care for the baby, should be offered as a care level in all units in Scotland, with care being delivered primarily by an integrated team, with the midwife as the primary carer. Neonatal care would need to be delivered by a team of in-reach staff from a neonatal unit to work with parents and maternity staff, to provide care for these babies. In line with the model of family centred care, parents should be encouraged to provide as much care as possible for their baby, and staff will support parents to develop the skills and knowledge that they need.

'We benefited from transitional care which allowed me to return to hospital. My daughter and I were then cared for by the specialist unit for three days. This was very good and gave my husband and I confidence in caring for our daughter.'

Scottish Maternity Care Experience Survey: 2015

Clear pathways of care, admission criteria, discharge planning and clinical guidelines would be required, underpinned by education and training, to ensure this model is implemented appropriately, with a system of data collection on postnatal neonatal care and audit being developed to evaluate the process.

5.10.9 Routine examination of the newborn

Routine examination of the newborn is an important part of the care of all babies. It offers an opportunity to detect congenital abnormalities, and identify problems which can be treated or avoided by prompt intervention. It is generally undertaken within the first 72 hours of life and has traditionally been performed by junior medical staff.

It is essential to ensure that the routine examination of the newborn is undertaken to a high standard by appropriately trained staff, with findings properly recorded and appropriate action taken.

With appropriate training, midwives can include examination of the newborn during routine care. Some NHS Boards have already provided training for midwives to conduct this examination, which offers greater flexibility for the baby and mother and often facilitates an earlier discharge home. It also offers an opportunity to explore any concerns which parents have about their new baby, and to offer general advice and support.

GPs routinely provide mothers and babies with their post birth check at six to eight weeks post birth, and this should continue to be part of routine postnatal care.

RECOMMENDATIONS

22	Well, late preterm infants and term infants with moderate additional care needs should remain with their mothers and have their additional care needs provided on a postnatal ward by a team of maternity and in-reach neonatal staff. Clear pathways of care, admission criteria, discharge planning and clinical guidelines would be required, underpinned by education and training.
23	The routine examination of the newborn can, in most cases, be undertaken by appropriately trained midwifery staff, with an appropriate audit and governance mechanism in place to evaluate the outcome.

5.11 Infant feeding

The decision on how to feed their baby is one of the most important early decisions faced by a new mother. Breastfeeding provides positive health benefits for the breastfed infant, the mother, wider family and society as a whole. Some of the benefits are immediate, individual and short lived but many also persist throughout life. For example, breastfeeding is associated with many benefits for mothers and their babies, including, better protection from acute infections, neonatal enterocolitis and respiratory illness and protection from a range of longer-term conditions and childhood obesity, as well as improved cognitive development. For the mother, the benefits of breastfeeding include protection against breast cancer.



Scottish Government policy has, for many years, sought to increase the rate of breastfeeding. However, societal barriers such as attitudes to breastfeeding in public, high rates of formula feeding in low income communities, lack of support in the workplace, and limited assistance from staff and community services, mean Scotland has some of the lowest breastfeeding rates in the developed world.

During the Review, women reported a range of views on the support they received for breastfeeding. Many women described excellent support and advice, while others reported a lack of postnatal support for breastfeeding, and inconsistencies in advice. In particular, women with babies in neonatal care often felt unsupported. A number of women also reported feeling pressurised to breastfeed, with staff not supporting their choice to bottle feed.

'The midwives and breastfeeding support worker were excellent. I saw the same two or three midwives and they had obviously discussed things in advance, so I was not having to repeat things.'

Scottish Maternity Care Experience Survey: 2015

Good quality breastfeeding support services are best provided by a range of support services to meet the needs of mothers and infants. This may include specialist support from trained and experienced professional infant feeding advisors, core support from midwives and additional support and reinforcement of basic skills from support workers and peer supporters.

All maternity and neonatal units in Scotland have already achieved the UNICEF UK Baby Friendly Maternity and Neonatal accreditation standard, or are working towards it. Units should be supported and encouraged to gain or maintain that accreditation. Maternity and neonatal units should consider how best to provide a postnatal environment that is conducive to supporting effective breastfeeding.

The continuity of carer model aims to build strong and trusting relationships between the midwife and mother, which will provide a more supportive environment for breastfeeding. It is suggested that, to enhance the support currently provided, community-based support staff should be trained and will work as part of the community team to provide additional support for breastfeeding and other infant care. In addition, community hubs will provide more open access to maternity care services locally for women who want advice and support with breastfeeding. Providing the environment to support women to breastfeed will help promote confident parenting and maximise the potential health benefits.

Women who formula feed, either by choice or because of breastfeeding problems should be fully supported and advised about how best to do this while minimising the risks. Staff should ensure that women have adequate information and access to equipment.

RECOMMENDATIONS

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| 24 | The new model of continuity of carer, community hubs and enhanced community care will provide an environment to support breastfeeding. Community-based care will include a role for support staff to assist midwives in the provision of baby care, including breastfeeding support and parenting skills, along with care and support for women who formula feed. |
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5.12 Midwifery across the career framework

Throughout the Review process, midwives have highlighted the lack of opportunities for clinical career progression. In light of a new model of maternity and neonatal care, consideration should be given to whether, and how, clinical midwifery practice across all levels of the career framework could contribute to the provision of care for women and families. It is proposed that this work should be progressed by the Chief Nursing Officer as part of her national work to transform nurses, midwives, and allied health professionals (NMAHP) roles.

5.13 Equipping the workforce to deliver

To underpin the expansion of care and services needed to support normal birth processes, the general midwifery workforce will need refresher training in core skills which may have lost prominence, including supporting normal birth processes in all settings. A national tailored continuous professional development programme should be developed which can be delivered locally and includes for example, case management, delivering continuity of care and carer, supporting physiological processes, and specific clinical skills. Midwives and other staff will also need to be trained to conduct routine examination of the newborn.

5.13.1 Non-registered workforce

There is currently variation in midwifery and neonatal support worker roles and their skills could be better used. These roles could be more flexible to enable staff to work across maternity or neonatal care and community or hospital settings. With appropriate training, these roles could include:

- Support for public health interventions such as breastfeeding.
- Lifestyle interventions related to smoking, substance misuse, diet and general physical care of mother and baby.
- Family support for parenting, teaching basic skills and providing emotional support to build maternal confidence.

There should be a nationally consistent role description for non-registered support staff, backed up by nationally consistent education.

5.13.2 Staffing a postnatal neonatal care model

In order to support delivery of a new model of postnatal neonatal care or transitional care, maternity and neonatal staff undertaking different roles will require training and development. A new staffing profile would also need to be developed to ensure a shift of resources from the current to the revised model. It is anticipated that this can be undertaken within a similar overall staffing profile.

RECOMMENDATIONS

25	The general midwifery workforce should receive refresher education and training in core skills, including supporting normal birth processes and providing care across the whole care continuum, and in examination of the newborn.	
26	Consideration should be given to the development of clinical midwifery roles across the career framework as part of the national work to transform nursing, midwifery and allied health professional roles.	
27	A revised staffing profile for inpatient postnatal maternal and neonatal care should be developed collaboratively by maternity and neonatal care providers, underpinned by staff education and training in relation to postnatal maternal and neonatal care.	

5.14 Specialist services

5.14.1 Specialist maternity care

A small number of women with the most complex care needs, will need to access highly specialist care for themselves (maternal medicine), or their baby (fetal medicine), or both. In line with other evidence in relation to low volume, high risk conditions, and the National Clinical Strategy for Scotland: 2016, it is likely that these women and babies will have better outcomes if their care is managed by a core group of consultants at a regional or national level, depending on the complexity.

Women with these complex needs should still receive continuity of midwifery carer from their primary midwife and primary obstetrician, who will co-ordinate the multidisciplinary team care around the woman.

Specialist services may also be required during labour and after birth (high dependency care and intensive care).

5.14.2 Maternal medicine

An increasing proportion of women are requiring additional specialist medical input either from their obstetrician or from another medical speciality because they either enter pregnancy with a medical condition not related to the pregnancy, or develop a medical condition during pregnancy. This requires coordinated care across a wide range of health services to ensure timely multidisciplinary joined-up working with women and health care professionals.

Most of the time this degree of medical care will be able to be provided at their local consultant-led unit but, for a very small number of women, this may require regional or national centres to be involved depending on how unusual their medical condition is.

Where there is a requirement for other medical speciality input, this should be from an identified named physician in that medical speciality, with an interest in pregnancy who meets and cares for the woman, with her obstetrician, during pregnancy. Input needs to occur in a timely manner recognising the pregnancy timeframe, and continue into the postnatal period. There is currently significant variation in this type of care provision.

Women may also present to acute hospital settings with medical needs. They may be seen in an obstetric triage setting or may present and be admitted through other acute settings e.g. emergency departments. Reports such as MBRRACE have highlighted critical delays in obstetric review of unwell women who present at non maternity settings and variation in approaches to care⁵³, which have contributed to poor outcomes.

Where women present outwith maternity settings they should be reviewed by the maternity team in a timely manner to ensure pregnancy-appropriate medical care occurs at all times, in all locations. Standards for this should be agreed nationally.

5.14.3 Fetal medicine

Fetal medicine is a specialist service to care for a baby's complex needs before and around the time of birth. It must be multidisciplinary and holistic in its approach to the care of women who have suspected or confirmed fetal disorders, or a relevant history in a previous pregnancy. As with maternal medicine, many of these needs can be met locally by the obstetric and neonatal team, but sometimes care is required at a regional or national level depending on the complexity of the condition, from paediatric specialist services (e.g. Paediatric surgery, cardiology) or geneticists. Each unit must identify a lead obstetrician who has, or who will develop, appropriate expertise in fetal medicine. There must be ongoing good communication with, and information for, parents as well as robust referral pathways in each NHS Board to ensure strong links between local and regional/ national centres.

5.14.4 Co-location of most specialised levels of care

For women and babies with the most complex care needs (maternal or fetal medicine), this care should be managed by a core group of experienced consultants at a regional or national level, supported by clear protocols and an agreed rapid referral and appointment process. To ensure high quality and consistent information is given about rare or complex maternal or fetal conditions, it is recommended that standardised information leaflets are given to parents during antenatal discussions.

'Mrs T had a known identical twin pregnancy when she presented to the maternity unit at Dumfries and Galloway Royal Infirmary at 17 weeks gestation. A scan performed there suggested that one of the twins was in heart failure due to severe twin-to-twin transfusion syndrome. She was referred to the Fetal Medicine Centre at the Queen Elizabeth University Hospital (QEUEH) in Glasgow where she was reviewed the next day. A further scan confirmed the diagnosis and she underwent immediate fetoscopic ('keyhole') laser treatment to correct the underlying problem. Both babies remained well following the procedure and she was followed up in Glasgow and also in Dumfries. She remained well however, due to further complications at 27 weeks gestation, her twins were delivered at the QEUEH and then transferred to the Dumfries neonatal unit and then home. They are now six months old and continue to do well.'

Source: Patient, Queen Elizabeth University Hospital

The overall approach to the delivery of maternity and neonatal services is based on the key principle that mothers and babies are kept together at all times. Maternity and neonatal services should be organised so that units providing the most highly specialised care are co-located.

This will support the development of professional and unit expertise and minimise the separation of a baby and their family when both a mother and baby require specialist care.

RECOMMENDATIONS		
28	Where a woman has a medical condition which requires additional specialist medical input, this should be provided in a timely manner from an identified named physician in that medical speciality, with an interest in pregnancy, and may need to be managed at a regional or national level. Midwifery care should continue throughout from the primary midwife, as part of the multi-disciplinary team. Units providing the most specialised maternity and neonatal care should be co-located.	
29	Where women present outwith maternity settings they should be reviewed by the maternity team in a timely manner to ensure pregnancy-appropriate medical care occurs at all times, in all locations. Standards for this should be agreed nationally.	
30	Each unit must identify a lead obstetrician who has, or who will develop, appropriate expertise in fetal medicine. There must be good ongoing communication with, and information for, parents as well as robust referral pathways in each NHS Board to ensure strong links between local and regional/ national centres.	
31	To ensure high quality and consistent information is given, it is recommended that standardised information leaflets are given to parents during antenatal discussions on fetal abnormality.	

5.15 Theatre and critical care (high dependency unit and intensive care)

As the demographics and complexity of childbearing women have changed over recent years, the need for increased care in the form of high dependency and intensive care has also increased.

Significant numbers of women need to utilise theatres, high dependency and critical care and, thus, they are an essential and integral element of the service. These need to be appropriately resourced, particularly theatres, where adequate dedicated staffing should be in place with separate workforce staffing for the areas to ensure appropriate levels of trained staff are in place to meet the need of the service.

It is essential that maternity theatres have dedicated theatre staffing. It is also essential that all staff providing this care in theatre, recovery or high dependency are trained to the nationally agreed standards and can maintain relevant competencies to provide the same standard of care as received by the non-pregnant surgical patient.

Women requiring care in intensive care settings should have multidisciplinary input from intensivists and obstetricians, as well as ongoing midwifery care to meet the woman's midwifery needs.

RECOMMENDATIONS		
32	Staff providing critical care in theatre, recovery or high dependency must comply with national standards, be appropriately trained and regularly maintain competencies. Adequate staffing levels must be in place within theatres, recovery and high dependency areas.	
33	Maternity theatres should have dedicated theatre staffing, and these staff should be appropriately educated, trained and managed.	

5.16 Services for vulnerable women

5.16.1 Evidence

Evidence suggests that the early stages of pregnancy following conception are vitally important in terms of infant development and are the time at which the baby is most vulnerable to the impact of adverse maternal circumstances. Pregnancy is also commonly seen as a key time when women may be more receptive to modifying their lifestyle and improving their health and wellbeing for the sake of their baby.



Many women find themselves in a vulnerable position for a wide range of medical, social and psychological reasons with resulting poorer outcomes for both mother and baby. Some of these women will have no other current interactions with health or social care services, whereas others will be engaged with multiple agencies in relation to their own health and wellbeing and the health and wellbeing of others in the family.

Engagement with staff and service users underlined the importance for this group of women to build strong relationships with their midwife, and having continuity of carer. Many NHS Boards have developed bespoke services for women who are vulnerable. Most models are currently based on a reduced midwifery caseload to increase contact time, with the midwife acting as a coordinator to support seamless and multi-agency care around the women and there is good evidence to support this approach.

Evidence also suggests that it is important to have empathetic, non-judgemental staff in these roles who are knowledgeable of the women's individual needs. Effective communication both in terms of interpersonal skills, but also for women with low literacy levels, women who are deaf and use sign language, or where English is not their first language, will also be an essential component of good quality care.

5.16.2 Action for vulnerable women

The key elements of high quality and safe care for vulnerable women are similar to those for other women. However, the intensity of the provision of the care is likely to differ, and the provision of team care is likely to comprise a wider range of clinical and social professionals in addition to third sector workers. There is also a higher risk of negative outcomes if adequate support is not provided to a high standard.

Vulnerability is multifaceted and often variable in its nature and, in order to ensure relevance, local patterns of vulnerability need to be examined and services tailor-made to address these local needs.

All women, and in particular the most vulnerable, should be supported with compassion and with advice and services to promote lifestyle changes during their pregnancy to improve their own health and the health of their baby. It is important to recognise that there are degrees of vulnerability, and that anyone in any part of society can be vulnerable during pregnancy.

It is, therefore, vital that all midwives are equipped, as the first point of contact, to recognise and manage vulnerable women appropriately. The work of the primary midwife is likely to be particularly important for women who are especially vulnerable, and caseloads may need to be reviewed to support this position.

More complex women may require referral into specialist, multi-professional and multi-agency teams, but many women can be supported as part of routine care, with extra support from their primary midwife and the wider team. GPs, as a key part of the team, will provide a vital point of longer term continuity for these women.

In all cases it is important to ensure that the team care is constructed around the women's needs, and is accessible for vulnerable women. It is anticipated that these services will be provided as locally as possible, in community hubs in many cases.

5.17 Workforce and education

Education, training and support for staff will be essential if vulnerable women are to be fully supported and assisted in caring for themselves and their baby.

Midwives who are dealing exclusively with the most vulnerable women will require additional education and training to ensure that they can provide the care needed, particularly in relation to enhanced skills in working with women with multiple vulnerabilities, including alcohol and substance misuse, mental wellbeing, women in the criminal justice system or women seeking asylum or refuge.

RECOMMENDATIONS	
34	All NHS Boards should conduct a systematic needs assessment focused on the pattern of vulnerable women of childbearing age in their area and develop specific, targeted services for women with vulnerabilities, with team care constructed around women's needs.
35	All staff should receive a level of training to support them to identify and support vulnerable women as part of routine care, and women with the most complex vulnerabilities should have access to a specialist team. Midwives in these roles will continue to provide continuity of carer and should have a reduced caseload in recognition of the complexity of the women, and will act as the co-ordinator of team care for the woman and her baby.
36	GPs and health visitors must be involved as part of the team in pre and postnatal care, and GP practices should identify a named link GP for vulnerable childbearing women and their babies.

5.18 Perinatal mental health

Many women experience mental health issues during their maternity journey and require additional understanding and support. There is broad policy, public and clinical consensus that early intervention on perinatal mental health will improve outcomes for women, children and families.

It is estimated that up to one in five pregnant women may experience some form of deterioration in their mental health throughout the course of their pregnancy, ranging from a relatively minor presentation to a more serious and enduring illness. Maternal mental health is a significant cause of maternal mortality in the UK, with vulnerable populations being disproportionately affected.

Perinatal mental health has been a consistent theme raised by staff, third sector organisations and service users around Scotland. The need to increase awareness of the issue has been regularly highlighted with particular issues being raised in relation to the access and range of these services provided and the need to improve the skills of staff in this important area.

5.18.1 Perinatal mental health services and care

There is variation in the perinatal mental health support available across NHSScotland. Clearer and more efficient pathways are needed for referral, along with greater access to services. Staff caring for pregnant and postnatal women and their partners should be confident in talking to parents about mental health problems in order to assess and agree the best possible course of action for the woman and her family. Midwifery staff should have these skills to recognise and support women with all levels of perinatal mental health.

While many women can be supported locally, clear, consistent referral pathways are required for women with more enduring, or serious, illness.

For parents of babies in neonatal care, access to psychological support services can assist them to understand and cope with the situation and prepare them to provide the care that their baby needs. Parents have raised the importance of having a range of these services for families with babies in neonatal units.

IMPROVING OUTCOMES FOR THE MOST VULNERABLE

A large number of children in Scotland are born into, and live within, families that are considered vulnerable. In NHS Greater Glasgow & Clyde, a Special Needs in Pregnancy Service (SNIPS) is provided for pregnant women with vulnerabilities, including addictions to alcohol and drugs.

'Working within the SNIPS Team is highly rewarding. We offer non-judgemental, holistic, flexible integrated care to those deemed to be the most vulnerable, within both the antenatal and postnatal periods.'

The service is comprised of a multidisciplinary team with a dedicated obstetrician, midwives, link midwives for refugee and asylum seekers, teenage pregnancy and homeless families.

The SNIPS multidisciplinary team work collaboratively with social services and addiction services in the provision of care for women during pregnancy and immediately following birth.

'I like coming to the SNIPS clinic because I see the same midwife and I feel well supported in my pregnancy.'



RECOMMENDATIONS

37	All NHS Boards should review their current access to perinatal mental health services to ensure early and equitable access is available to high quality services, with clear referral pathways. NHS Boards should ensure adequate provision of staff training to allow staff to deliver services to the appropriate level. Primary midwives, in partnership with primary care colleagues, should play a proactive and systematic role in the identification and management of perinatal mental health care.
38	The Scottish Government should ensure that Perinatal Mental Health is a key focus in the forthcoming Mental Health Strategy, and that appropriate connections are made with the new models of care described here in that strategy.
39	NHS Boards should ensure all neonatal staff can refer parents of babies in neonatal care to local psychological services.
40	All staff in maternity and neonatal units should be aware of third sector support organisations operating in their area and be able to signpost them to women and families in their care.

5.19 Bereavement

Stillbirth, neonatal death and maternal death rates continue to decline, however these deaths still tragically happen. NHS Boards around Scotland have shared some excellent examples of maternity and neonatal units developing staff and facilities to provide support for bereaved families, and for families dealing with palliative care for their babies. Third sector organisations have also reported some of the excellent care and support that they can provide.

We had five precious days with Ramsay in the family room in the hospital. We were able to hold our baby boy, dress him and take hundreds of photographs.

The medical photographer at St John's Hospital, Livingston took pictures and presented these in a lovely photograph album. Photos we will cherish for the rest of our lives. The staff were quietly sympathetic and treated us, and most importantly Ramsay, with nothing but respect.

As we were leaving, we were given a little bag with information inside about SANDS Lothians. This was to become our lifeline.

SANDS Lothians

However, we also heard that these services are not universally available and many families struggle to access the support they need and that parents are often unaware of services available locally. We also heard about how bereavement care may need to be provided for an extended period for many families.

We heard of the value parents put on being able to spend some time with their dying baby at home. Inpatient and community service should integrate end-of-life care pathways to support families in their choice if they would to spend time with their baby at home or in a hospice.

RECOMMENDATIONS

41	In every case where a family is bereaved they should be offered access to appropriate bereavement support before they leave the unit, and each maternity and neonatal unit should have access to staff members trained in bereavement care. Families should also be provided with appropriate information about bereavement services locally, both in hospital and third sector services, and also information on follow up care.
42	Inpatient and community service should integrate end-of-life care pathways to support families in their choice if they would like to spend time with their baby at home or in a hospice.

CHAPTER SIX



IMPLICATIONS FOR NEONATAL CARE

Outcomes for preterm and sick newborns have improved significantly over the last 20 years with enormous advances in care. More babies survive than ever before, but for some this will involve months of highly specialised medical and nursing care. The majority of babies leave neonatal care without any lasting problems, a testament to our neonatal nurses and doctors.

6.1 Neonatal care

There are a wide range of different needs associated with the provision of neonatal care, ranging from routine baby care at home or in a midwife birthing unit, to the most highly specialised neonatal intensive care.

Maintaining high standards of neonatal care is an ongoing challenge, particularly as some specialist experience, complex, expensive equipment and procedures may only be required infrequently for a few, very unwell, babies. Such complex care will necessarily only be available in a few centres. It is important that we review neonatal services to ensure that all babies born in Scotland receive the correct and most up to date care, provided by appropriately trained staff.

Depending on their care requirements, the majority of babies who need some additional care after birth could have this care provided on a postnatal ward with their mother, or in a neonatal unit with high dependency and special care cots. Some babies need short term intensive care as part of their neonatal stay. There are only a few babies that need highly specialised neonatal intensive care. For these babies, the complexity of neonatal intensive care has increased, particularly for those babies (but not exclusively) born at extremes of prematurity or with extremely low birth weights, those babies requiring complex modes of ventilation and nitric oxide and/or extracorporeal life support, and babies requiring complex surgery.

In addition, an effective allied health professional service can improve outcomes for neonates, in particular the high-risk neonates, and should be universally available, including (but not exclusively) physiotherapy, psychology, and dietetic services.

Parents and staff have spoken with great pride about Scottish neonatal care and the life-saving services that are provided with care and compassion. In particular, parents appreciate the multidisciplinary neonatal team working effectively together to share information and care planning with parents. This approach contributed enormously to parents' experience and allowed them to feel more involved in their baby's care and decision-making.

'From trainee nurses to consultants, the staff made us feel comfortable discussing our baby's care.'

They explained things without being patronising and involved us in decisions.'

Maternity and Neonatal Review: Neonatal Survey 2016



In all models of neonatal care, there will be a need for the transfer of some babies outwith their immediate local area to access specialist neonatal care. Many of these babies will have been identified antenatally and, wherever possible, the mother should be moved before birth to the nearest centre where the appropriate level of care can be provided for her and her baby. The acute and unpredictable nature of neonatal intensive care means that smaller units are likely to experience more pressures on cot availability, which has led to increased transfer of mothers and babies. The new model of neonatal care must seek to minimise unnecessary transfers of mothers and babies whilst ensuring that, when they do need to be moved, this is undertaken as quickly and efficiently as possible, and that mothers continue to receive high quality midwifery and obstetric care.

6.2 The new model of family-centred neonatal care

The new model of neonatal service delivery must have family-centred care at its heart. This includes the fundamental principles of keeping mother and baby together, positioning parents as partners in decision-making around the baby's care, parents providing as much care as possible for their own babies, and having regular communication between partners and clinical staff.

The key features of the proposed redesigned family-centred model are:

- The further development of a model of neonatal care across Scotland that keeps mothers and babies together in a postnatal ward when the baby has modest additional care needs, and minimises the need for admission to a neonatal unit.
- The provision of care for all babies as near to home as possible, while recognising that a small number of the most vulnerable preterm babies and the sickest term babies in need of complex care will receive some of their neonatal care in one of a smaller number of neonatal intensive care units. When this happens parents will be supported to be with their babies.
- The development of clear, agreed pathways for babies to be returned to their local or special care neonatal unit (or, if possible, home), following treatment in a neonatal intensive care unit or local neonatal unit.
- Parents must be involved in decision-making throughout and particularly in the practical aspects of care as much as possible. This includes encouraging kangaroo skin-to-skin care and early support for breastfeeding.
- The provision of support and facilities to allow parents to spend as much time with their babies as possible while they are in neonatal care, including the provision of overnight accommodation.
- The development of a model of early discharge for babies who have additional care needs who can be safely managed in the community.

This model of neonatal care is designed to meet the needs of all babies, from healthy newborns who will be cared for at home or in midwifery units with their mother, newborns with additional care needs who can be looked after in a postnatal ward or midwifery unit by specially trained midwives assisted by neonatal unit staff, to the sickest babies who require highly specialised care in a neonatal intensive care unit.

It is recognised that twins and multiple births are more likely to require neonatal care. This can be very challenging for parents, particularly where babies need different levels of care and one may need transferred, for example for neonatal surgery. Units should aim as far as possible to keep twins or multiples together to enable parents to be with and participate in care of both/all babies.

When a baby and mother are transferred from their intended place of birth to receive additional care, the principle will be that they are transferred back nearer home as soon as possible. For all babies, the aim will be early discharge home, and when this is not feasible, care in a local neonatal or special care baby unit. It is anticipated that this model of neonatal care will result in shorter stays in neonatal intensive care units for the majority of babies who require this care, and fewer overall days spent in neonatal care.

6.3 Neonatal intensive care

Currently, neonatal units provide different levels of neonatal care in Scotland, ranging from level three (neonatal intensive care) to level one (least intense, or special care). Scotland currently has eight designated level three units providing care to the smallest and most preterm babies. A small number of babies with the most complex conditions (mostly those requiring neonatal surgery) receive part, or all, of their neonatal care in one of the three neonatal intensive care units in Scotland which also provide neonatal surgical services.

To promote consistency of practice and benchmarking with other units across the UK, the new model of neonatal care for Scotland should be based on the British Association of Perinatal Medicine (BAPM) definitions of neonatal units. BAPM describes neonatal intensive care units, local neonatal units (currently designated level two in Scotland) and special care units.

Evidence from our review of evidence on neonatal models of care clearly shows that outcomes for very low birth weight babies (VLBW), both in terms of survival and longer term neurodevelopmental outcomes are better when they are delivered and/or treated in neonatal intensive care units with full support services, experienced staff and a critical mass of activity⁵⁴.

Consistent with other medical and surgical specialities, consolidating services for highly specialised, low volume neonatal care helps to ensure staff competencies and best clinical practice. Based on published evidence, the professional consensus is that future models of neonatal care should be designed to ensure that designated neonatal intensive care units care for a minimum of 100 VLBW babies per year (VLBW is defined in this context as less than 1500g) and are suitably experienced in caring for babies who need help with breathing (the latter is measured as respiratory care days per year). Two thousand respiratory care days per year has been proposed as an appropriate volume of practice for a modern neonatal intensive care unit.

During the Review, NHS Boards provided data on gestational age, birth weight, and days during which respiratory support was provided. The data indicated that babies needing highly specialised neonatal intensive care in Scotland should receive at least part of their care in a much smaller number of units than is current practice. This includes, but not exclusively, extremely low birth weight babies and those requiring complex or extended respiratory support.

Following the principles outlined within the National Clinical Strategy for Scotland: 2016, the evidence from models of neonatal care in similarly sized populations, workforce issues, and current building provision in Scotland, it is proposed that three to five neonatal intensive care units should be the immediate model for Scotland, progressing to three units within five years.

The move to three neonatal intensive care units should be phased in recognition of the co-dependencies between maternity and neonatal care, and will require further detailed work to consider and develop capacity for additional babies and facilities for parents. Ultimately, the smaller number of designated neonatal intensive care units will lead to improved staff competencies and best clinical practice in these units and safer care for the babies most at risk.

54 <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

The remaining neonatal units will be re-profiled to provide local neonatal care and special care for less sick infants and babies who no longer need neonatal intensive care. Local neonatal units will continue to carry out low risk neonatal intensive care, however care for the highest risk preterm babies and the sickest term babies in need of complex care will be in a smaller number of neonatal intensive care units. The provision of care in all categories of neonatal care in Scotland will remain under review, as aspects of care presently provided in neonatal intensive care units may, in time, be effectively delivered in local neonatal units.

In order to ensure that families are fully informed and included in the care of their baby and in the important decisions about that care, it will be essential that excellent communication and information is uniformly available to all parents in all neonatal units in Scotland. Formal mechanisms to agree the streamlined pathways should be developed and agreed in order to minimise variation and ensure all elements of the pathway are clearly understood by all care providers.

6.4 Proposed levels of neonatal care in Scotland

It is proposed that the current total number of 15 neonatal units is retained, with three to five units being re-profiled as neonatal intensive care units and the remaining 10-12 units being designated as local neonatal units or special care units.

Special Care Units

All neonatal units in Scotland will provide special care for their local population, and units who only provide this level of care will be designated as **special care units**.

Local Neonatal Units

These units will care for the majority of babies who need low-risk intensive care, high dependency care and special care, keeping the family together and as close to home as possible.

Neonatal Intensive Care Units

Three to five neonatal units in Scotland will be designated as **neonatal intensive care units**.

These will offer highly specialised neonatal intensive care in addition to providing conventional neonatal unit services for their local babies and families. A very small number of babies will need this level of specialist neonatal intensive care, and most will require a relatively short period of neonatal intensive care before they can be transferred back to their local or special care neonatal unit.

	Definition	Staff and carers
Postnatal Neonatal Care	<p>These cots are located in maternity wards and provide care for mothers and for babies side-by-side with additional care needs, including:</p> <ul style="list-style-type: none"> • Thermoregulation • Additional support to establish breastfeeding • Phototherapy for jaundice 	<p>Primarily parents Midwives Neonatal support staff Neonatal nurses AHPs</p>
Special Care Units	<p>These units provide special care for their own local population. They also provide, by agreement with their neonatal network, some high dependency services.</p>	<p>Primarily parents Neonatal support staff Neonatal nurses ANNPs General paediatricians AHPs</p>
Local Neonatal Unit	<p>These units provide special care and high dependency care and a restricted volume of intensive care (as agreed locally) and would expect to transfer babies who require complex or longer-term intensive care to a Neonatal Intensive Care Unit.</p>	<p>Parents Neonatal support staff Neonatal nurses ANNPs General paediatricians with a special interest in neonatology Neonatologists AHPs</p>
Neonatal Intensive Care Centre	<p>These units are larger intensive care units that provide the full range of medical (and sometimes surgical) neonatal care for their local population and additional care for babies and their families referred from the neonatal network in which they are based, and also from other networks when necessary to deal with peaks of demand or requests for specialist care not available elsewhere. Many will be sited within perinatal centres that are able to offer similarly complex obstetric care. These units will also require close working arrangements with all of the relevant paediatric sub-specialties.</p>	<p>Parents Neonatal nurses ANNPs Neonatologists AHPs</p>

RECOMMENDATIONS	
43	Parents should be involved in decision-making throughout and involved in practical aspects of care as much as possible. This includes the provision of facilities for overnight accommodation, encouraging kangaroo skin-to-skin care and early support for breastfeeding.
44	New models of neonatal care should be based on the BAPM definitions to increase consistency of practice and facilitate benchmarking with other neonatal units across the UK.
45	The new model of neonatal services should be redesigned to accommodate the current levels of demand, with a smaller number of intensive care neonatal units, supported by local neonatal and special care units. Formal pathways should be developed between these units to ensure that clear agreements are in place to treat the highest risk preterm babies and the sickest term babies in need of complex care in fewer centres, while returning babies to their local area as soon as clinically appropriate. Three to five neonatal intensive care units should be developed, supported by 10 to 12 local neonatal and special care units.
46	Excellent communication processes should be developed between neonatal units and parents to ensure a full understanding of the care pathways for babies. Consistent, standardised information will also be developed to ensure all parents are aware of the options for their baby, in particular for those parents whose babies might have all or part of their care outwith their local unit.

6.5 Getting babies home

6.5.1 Transfer support to neonatal units

Moving babies with complex needs back to their local neonatal or special care unit is important to keep families together and as close to home as possible.

Local neonatal units need to be supported to provide ongoing care for those babies who have received part of their care in a neonatal intensive care unit. An effective allied health professional service can improve outcomes for high-risk neonates and should be universally available, including (but not exclusively) physiotherapy, psychology, and dietetic services.

There should be an agreed framework for practice to support the development of consistent and equitable specialty paediatric and allied health professional outreach support for local neonatal units from larger units, and NHS Boards would have to work flexibly to accommodate this approach.

6.5.2 Early discharge into community care

Many babies requiring special care could be discharged home earlier if there was an appropriate neonatal/paediatric community service in place. This service does currently exist in some areas however a national Scotland-wide model for a seven-day neonatal/paediatric community service should be developed, with close links to GP services locally, in line with evidence and experience from other networks in the UK.

There should be an appropriate skill mix, robust guidelines and medical support to facilitate early discharge and ongoing care pathways, supported by a consistent approach to audit and service improvement. The model should consider regional working to support provision of cover for a number of units.

6.5.3 Post discharge follow up of high risk babies

Neonatal care should continue once the baby is discharged home. A follow up process, supported by clear guidelines, supports mothers and their babies following discharge and may facilitate earlier discharge. A model for post discharge follow up should be developed by the Managed Clinical Network in line with the NICE recommendations that will be published soon.

6.6 Quality and safety - standardising practice in neonatal care

Whilst some variation in practice between neonatal units is expected, this should be kept to a minimum. A national level group should be established to develop national Frameworks for Practice for Scotland, which are evidence-based and describe minimum acceptable standards for newborn care, recognising that there may be a need for some local variation. Based on these frameworks, all neonatal units should develop clear pathways for newborn care and referral, and parents should see consistency of practice as they move between neonatal units. These frameworks and pathways should be hosted on a national website and accessible to parents and staff.

RECOMMENDATIONS	
47	A national Framework for Practice should be developed which outlines clear pathways for newborn care and referral. This framework should also support the development of consistent and equitable specialty paediatric and allied health professional support for local neonatal units.
48	A national model for a seven-day neonatal community service should be developed, with appropriate skill mix, robust guidelines and medical support to support early facilitated discharge and ongoing care pathways.
49	Robust guidelines and follow up processes should be developed for post-discharge babies across Scotland.

6.7 Developing the workforce in neonatal care

Staff outlined the growing importance of the Advanced Neonatal Nurse Practitioners (ANNP) role in neonatal units. There is some degree of variability in their roles between neonatal units, but, in general, ANNPs have enhanced skills to provide senior level leadership, including middle grade cover in some areas. These highly skilled members of staff are a real asset to the current neonatal workforce and further development of these roles would be beneficial to the overall service.

Neonatal Nursing Qualified in Speciality and Advanced Practice education has been available in Scotland for a number of years, and should continue to be available and quality assured to ensure it meets course requirements and the demands of the new model of care.

The Review group also considered the varied roles of non-registered staff working in neonatal services who deliver a significant proportion of the care in neonatal units and transitional care settings. Support staff have an invaluable role in the care of women and their babies. There is a clear need to build on their role and enhance their educational opportunities and the existing competency framework, to reflect their potential contribution to the new postnatal neonatal care model, working in both maternity and neonatal settings.

Under the proposed new model, consultant medical care of babies in a local neonatal unit as well as in special care units may be delivered, at least in part, by general paediatricians with a specialist interest in neonatology.

To support the changing role of local neonatal units in the new model, there needs to be an increase in the numbers of doctors in training to be General Paediatricians with a special interest in neonatology. The Royal College of Paediatrics and Child Health has developed a new Special Interest in Neonatology⁵⁵ (SPIN) module for Paediatricians that will support training to meet requirements.

Staff in smaller neonatal units will need a different skill set compared to staff in larger units, which will include a broader base of skills and specific training to deal with a range of emergencies. For these staff it is essential that networks are developed to provide support, skills maintenance and training through regularised rotation into larger units. The neonatal Managed Clinical Networks should play the primary role in designing and supporting a formalised and structured approach to rotation and skills maintenance.

To support the neonatal model of care, a specialist support pathway should be planned and developed by each neonatal unit for each of the paediatric specialties and allied health professionals that contribute to neonatal care.

The support should include direct attendance at units, use of telemedicine for multi-disciplinary team reviews and attendance at outpatient clinics. The support should be built in to the workforce planning model to ensure it is afforded a clear priority and is appropriately resourced on a routine basis.

RECOMMENDATIONS

50	The role of ANNP staff should be reviewed to ensure their skill set is maximised, with a clear training and development support mechanism to retain and develop staff.	
51	Neonatal Nursing Qualified in Speciality and Advanced Practice education should continue to be available and quality assured to ensure it meets course requirements and the demands of the new models of care.	
51	Non-registered neonatal staff should have a clear role definition, competency framework and training and skills pathway to ensure they can work flexibly across all aspects of care.	
53	Workforce planning processes should be reviewed to ensure adequate numbers of general paediatricians with a special interest in neonatology are being trained to deliver this service in the future.	
54	A formalised and structured approach to rotation and skills maintenance for staff in smaller units should be developed and resourced through the appropriate Managed Clinical Network.	

SUPPORTING FAMILIES IN THE COMMUNITY

Families look forward to taking their baby home from a neonatal unit as soon as possible but this can also be a daunting time. The Neonatal Community Liaison service in NHS Tayside offer support to families who have babies going home with a nursing need. This can range from home oxygen, to naso gastric tube feeding, to general support with a premature baby.

Families' feedback has shown their appreciation of the service through having the support of home visits, phone advice and being able to text the liaison nurses. They find this reassuring that they have a point of contact if they are unsure of any aspect of care.

One family whose baby went home on home oxygen said:

'Our nurse was always available to offer support, either through a visit, or at the end of the phone. This was very reassuring for us, as our twin girls were born very premature, and spent three months in NICU. It was scary taking them home, they were not only small, premature and vulnerable, but one of the twins had extra equipment, which we had to learn how to operate and cope with. My daughter is off oxygen now and is doing really well. I still find it comforting that the nurse keeps in touch now and again to see if we are still doing ok. The service provided is amazing.'

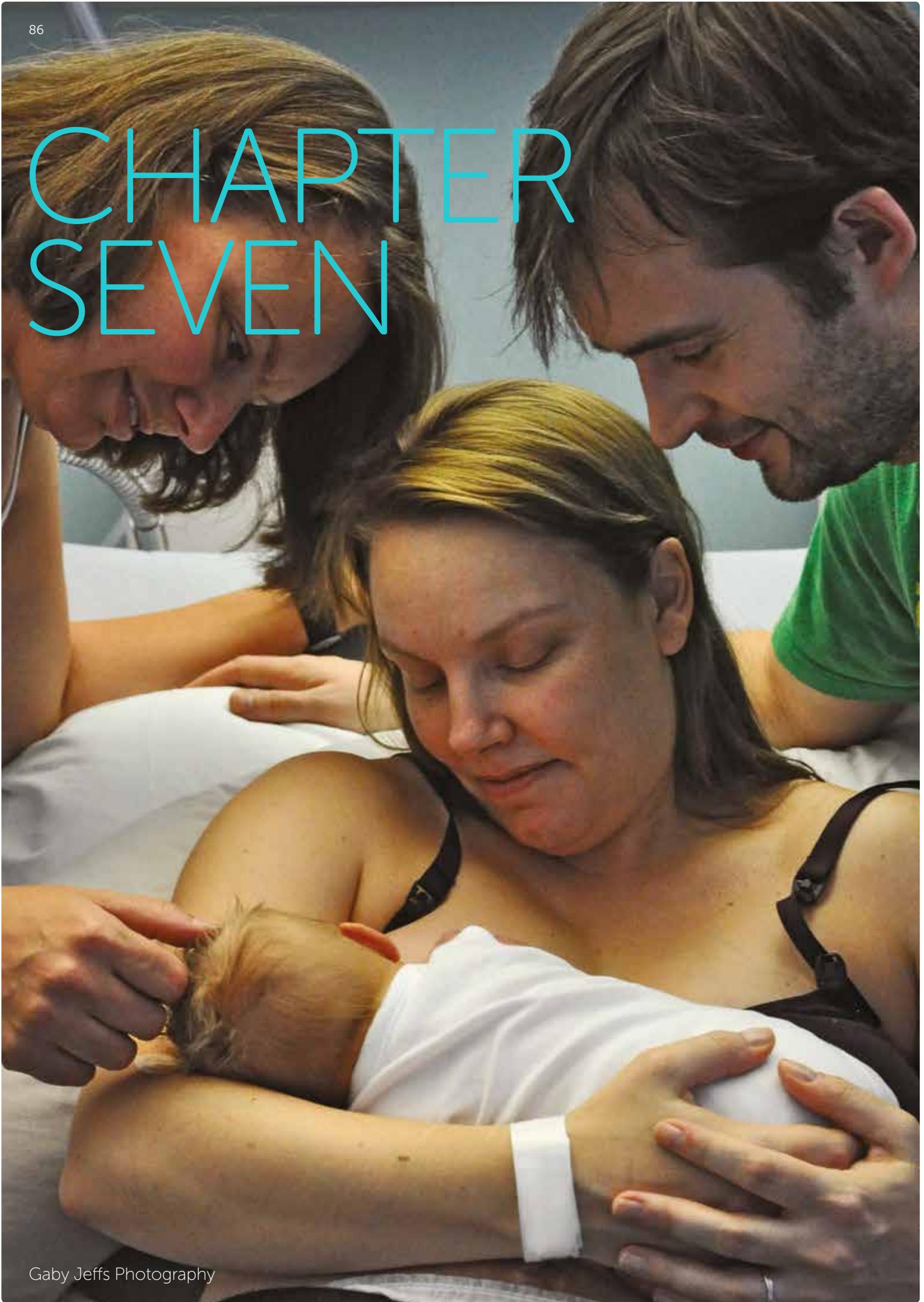
This family thrived in the community, they lived quite a distance from the hospital and mum did not drive. One twin was discharged home first and this caused huge separation issues and logistical problems getting back to hospital to visit their other daughter. To get their twins home, and have the support in the community, hugely reduced their stress and anxieties.

Another family taking their baby home with a cardiac condition and naso gastric tube feeding commented:

'I was desperate to get home but was anxious regarding my baby's condition. With the help of the liaison nurses, whom I had met in the hospital prior to going home, they went over a discharge plan to allow me to gain knowledge and confidence to take my son home. I knew I could contact them either via phone or text, and that they would be available to answer my questions, reassure me and would also provide a home visit. This helped reduce my anxiety and give me the confidence to look after my son at home.'



CHAPTER SEVEN



SUPPORTING THE SERVICE CHANGES



Delivering the new model of maternity and neonatal care will require some fundamental changes to the way in which services are provided in the future. A wide range of support services provide essential elements of the care to women and their babies and, thus, it is essential that they are considered in detail and addressed appropriately if the full benefits of their significant contribution is to be realised to maximum effect.

7.1 Transport

Patient transport is a key issue for service users within NHSScotland, particularly in relation to neonatal transport.

ScotSTAR provides a national service for the transfer of some of the sickest patients within NHSScotland and is responsible for the Scottish Neonatal Transport service, which is an integral part of the neonatal community. It is operated by the Scottish Ambulance service.

There are occasions where babies are transferred to a different unit following birth. Effective communication and information around the transfer of their newborn were highlighted as key issues for families when babies (and their parents) require transfer and, thus, it is vital that these areas are viewed as a high priority.

'The transfer of my baby was excellent, and the nurse was really helpful. It was nice to get this one on one time with her to discuss the whole experience and how I was feeling at the time – especially with someone who understood. Being allowed to travel with my baby during the transfer was really appreciated.'

Maternity and Neonatal Review: Neonatal Survey 2016

Whenever possible, the need for neonatal specialist care should be anticipated antenatally and the mother moved to an appropriate perinatal care centre prior to birth. Normally this transfer would be by ambulance, and these must be equipped to deal with maternity transfers. Unnecessary maternal transfers should be minimised, with best available evidence used to identify mothers at risk of imminent preterm birth. The development of a standardised risk assessment tool, used appropriately and consistently across Scotland should minimise unnecessary or late transfer *in utero*. The tool should be regularly reviewed and updated to take account of the rapidly changing evidence around transfer.

This principle must be underpinned by a robust system for the identification of an available cot. This would be greatly facilitated by a standardised real-time information technology-based system for all Scottish neonatal units to declare cot status. Based on a National Framework for Practice, all units should develop clear and agreed pathways for newborn care, referral and repatriation. These pathways should be available to parents to enable fully informed choice with regard to place of birth.

Maternity services should be able to accommodate an expectant mother in the maternity facility adjacent to the neonatal facility appropriate for her baby, and the mother should receive her care in that setting.

When an unexpectedly unwell or preterm infant is moved to another neonatal unit soon after birth, the mother should be transferred at the same time as the baby to minimise separation. If the mother is too unwell to be moved immediately, she must be offered an opportunity to see her baby before transfer. Use of telemedicine/babycam systems should be considered to allow her to continue to have visual contact with her baby, and she should be transferred as soon as she is well enough to travel, and any further care required delivered in the same place as the baby.

The transport team must continue to be an integral part of the neonatal community. Effective communication and liaison between neonatal unit and neonatal transfer teams should be routine. When babies are transferred, in some instances (e.g. repatriation of stable babies) the most appropriate person to accompany the baby and his/her parents may be a member of the local neonatal care team, with the accompanying benefit of face-to-face handover. Effective communication between the transport team and despatching/receiving units will include discussion and agreement on the most appropriate staff to accompany a baby in transfer. It is anticipated that the repatriation of babies should be provided seven days a week.

7.1.1 Education, training and staffing

Staffing of the neonatal transport team has been challenging in recent years, and needs to be more flexible and integrated into neonatal unit staffing to support the transport service. In future there is likely to be more transport of babies who require the most complex and specialised care and there needs to be provision of consultant support for these transfers made in future workforce planning.

A further, detailed review of transport services should be undertaken, led by the neonatal transport service, to examine the best model for staffing of the service.

This should include:

- Consideration of a more flexible deployment of medical and nursing staff across neonatal services to cover both transport and units at peak periods, supported by additional staff training where required.
- A strategic medical and nursing workforce plan for neonatal intensive care units that is integrated with neonatal transport services.
- A plan for the support of consultants for complex transfers.
- Consideration of rotation through transport being integrated into the grid training programme for neonatal trainees.

RECOMMENDATIONS

55	A standardised risk assessment tool should be developed in relation to any decision on <i>in utero</i> transfer. This development should be led by ScotSTAR, the neonatal transport service, in close cooperation with maternity and neonatal staff.	
56	A robust national system for the prompt identification of neonatal cot availability should be developed which is accessible through a single point of contact.	
57	Nationally agreed pathways for declaring cot availability should be agreed and formal processes should be in place for the management of periods of unusually high activity.	
58	All staff involved in neonatal transfers must have appropriate training, with neonatal transfers being subject to regular review and audit processes.	
59	A further, detailed review of transport services should be undertaken, led by the neonatal transport service, to examine the best model for staffing of the service, including the potential for integration with neonatal unit staffing models.	

INFORMED CHOICE AND CONTROL

Mrs S, from Orkney was pregnant with her third baby. After complications with her first two pregnancies, she was feeling anxious.

Pamela, the Senior Charge Midwife at Balfour Hospital in Orkney spent time with Mrs S and her husband, talking through her concerns, discussing her preferences and ensuring that she had all the necessary information to make informed choices for her and her baby.

'Pamela gave us many options so we could feel more in control during this pregnancy whilst also making sure the approach taken was always the safest option for me and the baby.'

Through her support and encouragement, Mrs S managed to successfully breastfeed for the first time, something she had been unable to do for her first two children.

Pamela's approach has even inspired Mrs S to enrol at college with a view to eventually becoming a nurse.



7.2 Remote and rural care

Many of Scotland's 14 NHS territorial Boards deliver services to populations living in remote and rural locations. Different models of care have been established in these areas, determined by the local geography and population needs.

During the course of the Review, there were three obstetric-led units in rural general hospitals (Caithness⁵⁶, Kirkwall and Stornoway), one GP/midwife-led service in Lerwick, and 12 midwife-led units that are more than 30 miles from larger units.

Pregnant women in these remote areas are risk assessed throughout their pregnancies to determine the safest place for them to give birth. Many island women will travel to be located in closer proximity to a larger mainland unit in the later stages of pregnancy where the need for additional maternal or neonatal care is anticipated.

7.2.1 Views on the current model

A number of service users and staff in remote and rural areas contributed to the Review. Women reported that, currently, they receive a high quality of personal care, usually delivered by a small local team of midwives, with whom they have built relationships of trust and support.

One of the most common challenges cited by families was the need to travel, often some distance, to access care, frequently in an unfamiliar environment with an unknown care team. Parents of babies in neonatal care from remote and rural areas highlighted the personal challenges associated with long stays in hospital, including separation from their families and the financial aspects of having to live away from home for some time.

56 NHS Highland decided on 29 November 2016 to change Caithness Maternity Unit to a Community Midwifery Unit

Staff in remote and rural areas highlighted the following issues:

1. **Skills:** A broader range of general skills is required in remote and rural areas. There is less additional support available to staff and, thus they have to be able to react to urgent situations and provide first line support in an emergency situation. It is, therefore, essential that staff can access high quality training in order to have the required skills to respond to such situations.
2. **Support:** Some rural NHS Boards described good relations with, and support from, larger NHS Boards. However, others found that this could be improved. It was generally noted that there would be benefit in formalising these arrangements to ensure that there is a systematic, and agreed approach to ensure staff can enhance and maintain their skills in a planned and consistent manner, with appropriate, dedicated resources to ensure this routinely occurs.
3. **Workforce:** There are recruitment challenges in remote and rural areas and staff retention was highlighted as a significant problem across all professions.
4. **Home birth:** This is particularly challenging for island and very rural settings due to the extended travel time for staff to remote areas.
5. **Transport:** The timely support of the neonatal transport service is critical, and the training they provide to staff is very valuable in remote and rural settings.

In order to address these issues, a number of areas can be considered. A systematic review of the key competencies and skills that are required for remote and rural staff should be undertaken to ensure tailored support, education and training is provided to staff. This should include examination of structured opportunities for rotation to larger units for skills development and maintenance.

Dedicated time and resources are required to support staff in maintaining and enhancing their skills, with a particular focus on the identification of the deteriorating patient and emergency situations. Structured arrangements should be in place between remote and rural NHS Boards and an urban NHS Board to ensure that formal training and development packages are in place, with all staff receiving annual updates and training in identifying the deteriorating patient and the management of obstetric and neonatal emergencies.

Where NHS Boards are facing particularly acute recruitment and retention challenges in nursing, midwifery and medical staffing, consideration should be given to the development of incentives or bursaries to encourage staff to work in those areas.

7.2.2 Telehealth and telemedicine

All telehealth and telemedicine should be utilised in a more comprehensive manner, across all remote and rural areas to support contact and consultations, the provision of clinical advice from other NHS Board areas, as well as being utilised for training and development purposes. Telemedicine has great potential to support keeping care local, through use of eConsultations.

In particular, in remote and rural parts of Scotland, this could avoid the need for women and babies to travel, but it has uses in virtually every part of Scotland. However, this change would require investment and support from both the smaller, and the larger, NHS Boards to maximise its potential. A systematic review of the possible impact and use of telehealth/telemedicine initiatives should be undertaken to maximise its impact across all NHS Board areas and a working group should be set up to explore the potential in this area.

RECOMMENDATIONS	
60	A systematic review of the additional key competencies and skills that are required for remote and rural staff should be undertaken and training developed and provided. This should include consideration of a structured rotation to larger units for skills development, maintenance and update.
61	Structured arrangements should be in place between remote and rural NHS Boards and an urban NHS Board for training and development in the identification and management of the deteriorating patient and obstetric and neonatal emergencies.
62	A working group should be set up to explore the potential for enhanced use of telemedicine in maternity and neonatal services.
63	Consideration should be given to the development of incentives or bursaries to encourage staff to work in remote and rural areas.

7.3 Planning and supporting the workforce to deliver

The Review vision describes services that are delivered by staff who are empathetic, skilled and well supported to deliver high quality, safe services.

7.3.1 Workforce planning

Workforce planning is an essential part of delivery of the new model of maternity and neonatal care.

The current workforce is already highly skilled, flexible and committed. A wide range of available training programmes and modules are already available, and undergraduate training programmes for nursing, midwifery and medical staff are fully subscribed at present. Workforce planning tools are well established and are widely used and these can be adapted to the new model of care.

It is, however, vitally important that NHS Boards plan for, and incrementally build, the workforce capacity across all maternity, neonatal and ancillary disciplines over the next five years to deliver the new model.

Workforce planning needs to consider current, and future, influences on the workforce, including demographic changes, changing working patterns (such as increased part-time working and demand for more flexible working), recruitment and retention challenges in some areas and the absolute need for new roles to be developed, supported and implemented.

In addition, the implementation of multi-professional team working has been highlighted during this Review and this aspect of workforce planning will need to be addressed in order to ensure that teams have the range of skills required to deliver the new model of care.

Workforce planning will require to take place at local, regional and national levels. This planning work will involve all disciplines and will need to shape the future training of all professions. In relation to medical staffing, it will assist in informing and influencing the Shape of Medical Training Review to reflect the new and adapted roles, in particular to develop paediatricians with a special interest in neonatology.

To deliver the current range of services in remote and rural areas it will be important to ensure all staff have the competence to support the level of care being delivered. This should include exploring the different roles staff may play in the future.

RECOMMENDATIONS	
64	NHS Boards will require to undertake comprehensive workforce planning-based on the new model, including an assessment of current and future supply and demand, and new roles, and this should be fed into national level work including the Shape of Medical Training Review.

7.3.2 Education and training

Accessible, available and relevant education and training is vital to support the new roles and to build capacity in the workforce to deliver them. The new roles described in this report will need to be underpinned by planned and managed changes in training and education provision for registered and non-registered staff. These changes will be required across the spectrum of education and training packages from undergraduate through to continuing professional development. This needs to reflect the range of roles and skills needed for staff, for example in both urban and rural settings. The provision of clinical supervision for midwives will support the transition to the new continuity of carer model.

In some parts of Scotland, nurses and midwives have highlighted the challenge of securing release for training. Consideration should be given to the provision of protected training time for all staff to ensure training is given the appropriate priority.

RECOMMENDATIONS

65	In parallel with workforce planning, planning for education and training capacity should take place with NHS Education for Scotland and the universities, colleges and other training providers, to enable NHS Boards to build capacity where it is needed in time to deliver the new model.	
66	Consideration should be given to the provision of protected training time for all staff to ensure training is given the appropriate priority.	

7.4 Continuous quality improvement

7.4.1 Quality improvement – learning from data and audit

In order to ensure services are as safe as possible and to create a culture of continuous improvement, it is critically important that up to date and easily accessible data and audit systems are used to drive change.

Readily accessible information about maternity and neonatal care in Scotland is vital for policy, for professionals and for the public. This will inform choice, improvements in health, healthcare and services. It will be used to facilitate benchmarking, to learn from adverse events and to reduce variations in care outcomes.

The improvement and audit landscape in maternity and neonatal care has expanded rapidly in recent years with the introduction of:

- MBRRACE
- Each Baby Counts
- MCQIC
- National Neonatal Audit Programme
- Bespoke local datasets of clinical information ('Dashboards')
- Scottish Maternity Care Experience Survey

The development of a National Maternity and Perinatal Audit, and a Standardised Perinatal Mortality Review tool, jointly with other UK Health Departments has also been commissioned.

To harmonise data collection and presentation at a national level, maternity and neonatal dashboards should be developed to examine key quality indicators and outcomes. This will help to facilitate benchmarking and reduce variations in care.

Healthcare Improvement Scotland have developed a national framework to capture learning from adverse events through reporting and review, published in April 2015⁵⁷. NHS Boards should ensure that the systems and processes in place within their Board to report, record and review all adverse events are relevant to, and applied to, adverse events in maternity and neonatal care. Boards should also ensure they share and act on learning from adverse event reports. This approach will be complemented by the awaited Standardised Perinatal Mortality Review tool which will build on existing tools to promote collective national learning from cases of stillbirth and neonatal death.

RECOMMENDATIONS

67	National level maternity and neonatal dashboards should be developed to facilitate benchmarking and reduce variations in care.	
68	NHS Boards should ensure that the systems and processes in place within their Board to report, record and review all adverse events, are relevant, and applied to, adverse events in maternity and neonatal care, and that systems are in place to share and act on learning.	

7.5 Information technology, data and telemedicine

7.5.1 Data and audit

Up to date and readily accessible information about maternity and neonatal care in Scotland is needed to inform improvements in services, to monitor equity and inform strategies and to help reduce inequalities. Staff currently view the complexity, variability and time commitment to the current data collection process as being of concern.

The range of routine data collected at local and national level should provide information of adequate detail and quality to allow robust surveillance of population health determinants, health service planning and monitoring of the quality of service processes and outcomes. This data should be analysed and reported regularly to provide answers to any key questions raised by the public, health professionals and national decision-makers.

The potential to use the new National Maternal and Perinatal Audit tool to provide focused audits on key issues should be explored. In addition, a national data hub, led by Information Services Division, part of NHS National Services Scotland, should be developed to coordinate collection and verification of all Scottish related neonatal and maternity data, to streamline data collection and reduce duplication of data entry.

7.5.2 Information technology and systems

Currently women hold their own maternity record, the Scottish Women's Hand Held Maternity Record (SWHMR)⁵⁸. This goes with them to all appointments and different members of the care team can access this record

Information technology systems spanning the whole care spectrum are viewed as essential by staff to deliver streamlined care with the new proposed model. Most NHS Boards have an electronic maternity system in place, or are in the process of procuring or installing a system. In neonatal care, almost every unit in Scotland is operating on the Badgernet system. Badgernet records data about the baby and the care received.

Electronic maternity care systems

The benefits of having a uniform electronic care system across Scotland for neonatal care are apparent. To simplify data entry and sharing, it would be preferable to have one maternity care system across Scotland, which will interface with systems across healthcare settings (e.g. primary care) and be accessible in all these settings. This will improve sharing of vital information and reduce duplication of data entry across Scotland. This system should be capable of interfacing with the electronic women's maternity record.

Electronic women's maternity record

An electronic women's maternity record would be an important tool in maternity care, to promote co-production of care plans and birth plans, and for shared decision-making.

A Scotland-wide initiative to develop an electronic women's maternity record should be developed. The features of this system will include readily accessible information for women and all professionals involved in her care, wherever the setting. It is intended that this system will replace the existing paper-based system of maternity records.

RECOMMENDATIONS

69	The potential to use the new national Maternal and Perinatal Audit to provide focused audits on key issues should be explored.	
70	A national data hub should be developed to coordinate collection and verification of all Scottish related neonatal and maternity data.	
71	A single maternity care system across Scotland should be developed, which will interface with systems across healthcare settings and be accessible in all these settings.	
72	A Scottish electronic women's maternity record should be developed, that is readily accessible to women, and all professionals involved in her care.	

CHAPTER EIGHT



WIDER IMPLICATIONS

This report makes a number of recommendations that will change the way that services are organised. Critically, it makes recommendations for the reorganisation of services and the current workforce within NHS Boards. However, a number of the recommendations will need coordination across NHS Boards.

8.1 Managed Clinical Networks

The three neonatal Managed Clinical Networks are well established in Scotland and have made advances in delivering care at a regional level. However, it has been suggested that the networks need to be more integrated and that there needs to be a greater level of national leadership over clinical and organisational decisions around neonatal care.

In maternity care there is also a need to develop mechanisms to facilitate:

- Cross-border referral and transfer of women and babies.
- Management of women and babies with the most complex care needs at a national level.
- Choice for women, including cross-NHS Board choice.
- Conditions for a flexible workforce with regional support mechanisms developed for smaller units or NHS Boards.

8.2 Further research

There are a number of recommendations for research priorities and data collection and analysis that were identified through the course of the Review.

It is recommended that consideration be given to developing research capacity and capability, especially in disciplines where it is underdeveloped, to carry out this research to inform implementation of the new model of care.

A list of potential further research is detailed at Appendix I. In addition, consideration should be given to the establishment of a nationally funded, Scotland-wide, multi-year programme of Maternal and Neonatal Health Service Research, to develop the full potential of the existing research community.

The recommendations from the Review and the process of implementation should be evaluated through monitoring the impact for women, babies, families and staff in terms of clinical outcomes, equity, cost and the experiences and views of all stakeholders.

RECOMMENDATIONS	
73	A single Maternity Network Scotland should be created to promote sharing of experience and expertise and to create regional or national protocols, for example to manage the most complex conditions at a national level.
74	There should be a single Neonatal Managed Clinical Network for Scotland with the new model to ensure integrated working across NHS Board boundaries, including input from service management and clinical staff. The maternity and neonatal networks should come together formally on at least an annual basis to promote integrated services.

RECOMMENDATIONS	
75	Consideration should be given to developing research capacity to carry out research to inform implementation of the model of care and to funding of a national programme of maternity and neonatal health service research.
76	The recommendations and their implementation should be evaluated for impact on outcomes and experiences of women, babies, families and staff, and resources.

8.3 Resource implications

Current Position

In 2014/15, the Scottish Costs Book⁵⁹ data illustrated that the costs for maternity services in Scotland, amounted to over £300 million, with the vast majority of these costs relating to the provision of hospital-based obstetric, midwifery and neonatal services, with the remaining costs utilised for community midwifery.

In the current resource environment, it is important that a systematic prioritisation of the recommendations is undertaken, which includes a full assessment of the costs and of the potential benefits or savings. This is in line with the process outlined in the paper prepared for this Review which set out a framework and associated actions for consideration of the economic implications of the Review recommendations⁶⁰, with priority being afforded to those issues with the potential for maximum impact.

Within a programme budgeting environment, the overall resource available to deliver maternity and neonatal services and the current deployment of these resources will require further detailed analysis to ensure a full appreciation of the current cost profile within NHS Boards as this will provide the platform to move towards implementation of the recommendations of this Review.

Implications of the new models of care

It is anticipated that the majority of the recommendations will either be cost neutral or have minor recurring costs associated with them, in addition to an element of transitional costs. It is also recognised that over time, improved outcomes will result in significant cost savings. However, it is also recognised that a number of the recommendations are likely to have more significant implementation costs associated with them. The implementation process will require to consider phasing and prioritisation of the recommendations, both in terms of the resource requirements and the capacity within the service to implement change.

There will be implications for staffing resources associated with a number of these recommendations, particularly in relation to additional training and skills maintenance. In addition, detailed, revised workforce planning processes will need to be undertaken to ensure appropriate staffing is deployed to implement and sustain the new models of care. At present, there are a range of staffing profiles and skill mix within NHS Boards and, thus, a detailed assessment will require to be undertaken in each area to define the precise requirements.

There are a number of recommendations, as outlined below that are likely to incur additional costs, although further detailed work is required as the current degree of variation within NHS Boards impacts on the ability to accurately predict additional costs.

Person-centred care: Many units already have facilities for fathers to stay on maternity wards or for parents to stay near neonatal units. However, these will need to be developed or improved in some areas and may need expansion in the three to five Neonatal Intensive Care units to accommodate increased numbers of babies.

In addition, the review of expenses for families proposed within the Review may have some resource implications once completed.

Continuity of carer: Whilst it is anticipated that this can be delivered with the existing complement of midwives and obstetricians, it envisages a shift of resource from hospital to community.

However, there will be a training requirement for a significant proportion of midwives associated with the shift of care to the community and a caseloading model of care.

In addition, an increased number of support staff may be required to support delivery of antenatal and postnatal care locally. The introduction of early adopters will enable a full assessment of the resource implications and sharing of learning across NHSScotland.

59 http://www.isdscotland.org/Health-Topics/Finance/Costbook/Costs_Guidance_Manual_2010.pdf

60 <http://www.gov.scot/Topics/People/Young-People/child-maternal-health/neonatal-maternity-review>

Community hubs: This is in line with the general direction of travel for a number of NHS services, and the model envisages utilising existing facilities as far as is practical. For some NHS Boards the cost of relocating this care from central locations to community hubs may have capital implications associated with creating the physical environment of the hub if suitable local facilities are not available. It will be essential that NHS Boards undertake their own assessment of local need and configuration of hubs to make best use of local resources.

Place of birth: The report emphasises a focus on normal birth, and reducing non-medically indicated intervention. It is recommended that all NHS Boards provide a full range of birth place options for women and a range of pain relief options.

Currently, many NHS Boards already provide this range of choice, but where they are not available, there may be cost implications. It is recognised there will be a transitional cost requirement associated with this significant redesign while enhancing community services at the same time as running traditional services. In the longer term it is anticipated that the new model should require less maternity inpatient beds, as there is a move towards promoting normal processes and reducing avoidable intervention, alongside a shorter postnatal stay for some women.

Postnatal neonatal care: For those NHS Boards not currently operating any form of transitional care arrangements, there will be some initial costs associated with the development of the postnatal neonatal care environment and staff training to develop the appropriate skill mix.

Neonatal care: The new model of neonatal care includes a strengthening of paediatric outreach and allied health professional support for local neonatal units, and a national seven-day neonatal community support service. This represents an increase on current staffing provision, however it is expected to realise preventative benefits in terms of early identification and treatment of conditions. It may, over time, also reduce the length of neonatal inpatient stay in hospital. Treating babies at home or in community hubs will require a shift of resource from hospital to community. Further analysis work will need to be done in this area to quantify the detailed staffing requirements.

Training and development of staff

Throughout the Review, a key feature in a number of areas, has been the importance of having a well-trained and developed workforce, with dedicated time for this important aspect. It is anticipated that, in some areas, this will require to be reviewed in a systematic manner and additional resources will be required to ensure consistent application.

Electronic records – development of an electronic women's maternity record and a single national maternity system will require significant investment across Scotland and is likely to take place over a number of years.

Research and Evaluation – it will be important to evaluate the impact of several of the recommendations. In addition, decisions on future research required will have resource implications.

These potential additional costs require to be balanced against the longer term benefits, and reduced resource requirements, from the provision of a local service with less inpatient care and more community-based care.

APPENDICES

THE BEST START
A FIVE YEAR FORWARD PLAN
FOR MATERNITY AND
NEONATAL CARE IN SCOTLAND

APPENDIX A

SUMMARY OF REVIEW RECOMMENDATIONS

RECOMMENDATION	
Model of Care	
1	Every woman will have continuity of carer from a primary midwife who will provide the majority of their antenatal, intrapartum and postnatal care and midwives will normally have a caseload of approximately 35 women at any one time. Where women require the input of an obstetrician in addition to midwifery care, they should have continuity of obstetrician and obstetric team throughout their antenatal and postnatal care. Midwifery and obstetric teams should be aligned around a caseload of women and should be co-located for the provision of community and hospital-based services. Early adopter NHS Boards should be identified to lead the change in practice. Implementation should ensure appropriate education, training and development and realignment of resources is achieved, recognising the potential for additional resources to be required during implementation.
2	Every woman will have a clear birth plan developed for her needs which is updated regularly throughout her maternity journey.
3	GP practices should nominate a link GP for the practice to provide a liaison point between the midwifery/obstetric team, the health visiting team and the practice.
4	Parents of babies in neonatal care should be involved in decisions about the care of their baby and in providing as much care for their baby as possible.
5	Maternity and neonatal services should be redesigned to ensure mothers and babies stay together.
6	All units should take a flexible approach to the presence of partners, to ensure that families can stay together, with suitable accommodation being provided and facilities to enable kangaroo skin-to-skin care and breastfeeding/breast milk feeding.
7	All neonatal facilities should provide emergency overnight accommodation on the unit for parents, with accommodation available nearby for parents of less critically ill babies.
8	To reduce variation, an urgent review of the approach to expenses for families of babies in neonatal care should be undertaken to develop a nationally agreed policy.
9	High quality prenatal and antenatal education must be available to all, and NHS Boards should continue to promote and improve early access to antenatal education.
10	The redesign of Ready Steady Baby should reflect the new model of care and provide unbiased, consistent, evidence-based information about maternity and neonatal care.
11	The 2009 Pathways for Maternity Care should be revised at a national level to facilitate an individualised approach to the management of risk through the development of a personalised care plan which is regularly reassessed.
12	The new model of care is based on the absolute requirement to have high performing, multi-professional teams in place, and all NHS Boards should ensure that these teams are developed, and supported, to operate effectively and that this team development is afforded the highest priority at NHS Board level. Multi-professional team education and training opportunities should be explored and should include all levels of staff within NHS Boards.

RECOMMENDATION	
Model of Care	
13	A directory of third sector services, available to maternity and neonatal service users, should be created, in partnership with third sector providers in order that all staff are aware of local and national level third sector support for families.
14	NHS Boards should redesign maternity services with a focus on local care, built around the concept of multidisciplinary community hubs, with the majority of women being offered routine care and services through these hubs. Each NHS Board should undertake a local assessment of the viability, scope and potential impact of hubs identifying local needs balanced with maximising benefit from resources. A review of the functioning of these hubs should be conducted, following an agreed national framework, after a defined period of operation.
15	Each NHS Board should ensure that they are able to provide the full range of choice of place of birth within their region. National, standardised core information should be made available on the range of safe birth settings to support women's choice.
16	All NHS Boards should aim to provide a range of pain relief for all women.
17	Caesarean delivery should only be provided if clinically indicated and factors contributing to the rising caesarean section rate should be examined, from both the clinical, and women's, perspective, with optimal levels of intervention that balance risk and potential harm being identified.
18	In conjunction with service users, NHS Boards should undertake an assessment of the viability, and scope, of freestanding midwifery units against an agreed national framework to ensure consistency, with a view to balancing access needs with the need to ensure resources are used to their maximum impact.
19	Options for postnatal care should be discussed with women throughout pregnancy and a plan agreed which takes account of their unique circumstances.
20	For the majority of women, all key processes should be aligned and streamlined to ensure early discharge is the norm.
21	The provision of high quality postnatal care should be afforded a high priority, with staffing models being reviewed in conjunction with the introduction of the continuity of carer model.
22	Well, late preterm infants and term infants with moderate additional care needs should remain with their mothers and have their additional care needs provided on a postnatal ward by a team of maternity and in-reach neonatal staff. Clear pathways of care, admission criteria, discharge planning and clinical guidelines would be required, underpinned by education and training.
23	The routine examination of the newborn can, in most cases, be undertaken by appropriately trained midwifery staff, with an appropriate audit and governance mechanism in place to evaluate the outcome.
24	The new model of continuity of carer, community hubs and enhanced community care will provide an environment to support breastfeeding. Community-based care will include a role for support staff to assist midwives in the provision of baby care, including breastfeeding support and parenting skills, along with care and support for women who formula feed.
25	The general midwifery workforce should receive refresher education and training in core skills including supporting normal birth processes and providing care across the whole care continuum, and in examination of the newborn.
26	Consideration should be given to development of clinical midwifery roles across the career framework as part of national work to transform nursing, midwifery and allied health professional roles.

RECOMMENDATION	
Model of Care	
27	A revised staffing profile for inpatient postnatal maternal and neonatal care should be developed collaboratively by maternity and neonatal care providers, underpinned by staff education and training in relation to postnatal maternal and neonatal care.
28	Where a woman has a medical condition which requires additional specialist medical input, this should be provided in a timely manner from an identified named physician in that medical speciality, with an interest in pregnancy, and may need to be managed at a regional or national level. Midwifery care should continue throughout from the primary midwife, as part of the multi-disciplinary team. Units providing the most specialised maternity and neonatal care should be co-located.
29	Where women present outwith maternity settings they should be reviewed by the maternity team in a timely manner to ensure pregnancy-appropriate medical care occurs at all times, in all locations. Standards for this should be agreed nationally.
30	Each unit must identify a lead obstetrician who has or who will develop appropriate expertise in fetal medicine. There must be good ongoing communication with and information for parents as well as robust referral pathways in each Board to ensure strong links between local and regional/national centres.
31	To ensure high quality and consistent information is given, it is recommended that standardised information leaflets are given to parents during antenatal discussions on fetal abnormality.
32	Staff providing critical care in theatre, recovery or high dependency must comply with national standards, be appropriately trained and regularly maintain competencies. Adequate staffing levels must be in place within theatres, recovery and high dependency areas.
33	Maternity theatres should have dedicated theatre staffing, and these staff should be appropriately educated, trained and managed.
34	All NHS Boards should conduct a systematic needs assessment focused on the pattern of vulnerable women of childbearing age in their area and develop specific, targeted services for women with vulnerabilities, with team care constructed around women's needs.
35	All staff should receive a level of training to support them to identify and support vulnerable women as part of routine care, and women with the most complex vulnerabilities should have access to a specialist team. Midwives in these roles will continue to provide continuity of carer, should have a reduced caseload in recognition of the complexity of the women, and will act as the co-ordinator of team care for the woman and baby.
36	GPs and health visitors must be involved as part of the team in pre and postnatal care, and GP practices should identify a named link GP for vulnerable childbearing women and their babies.
37	All NHS Boards should review their current access to perinatal mental health services to ensure early and equitable access is available to high quality services, with clear referral pathways. NHS Boards should ensure adequate provision of staff training to allow staff to deliver services to the appropriate level. Primary midwives, in partnership with primary care colleagues, should play a proactive and systematic role in the identification and management of perinatal mental health care.
38	The Scottish Government should ensure that Perinatal Mental Health is a key focus in the forthcoming Mental Health Strategy, and that appropriate connections are made with the new models of care described here in that strategy.
39	NHS Boards should ensure all neonatal staff can refer parents of babies in neonatal care to local psychological services.

RECOMMENDATION	
Model of Care	
40	All staff in maternity and neonatal units should be aware of third sector support organisations operating in their area and be able to signpost them to women and families in their care.
41	In every case where a family is bereaved they should be offered access to appropriate bereavement support before they leave the unit, and each maternity and/or neonatal unit should have access to staff members trained in bereavement care. Families should also be provided with appropriate information about bereavement services locally, both in hospital and third sector services, and also information on follow up care.
42	Inpatient and community services should integrate end-of-life care pathways to support families in their choice if they would like to spend time with their baby at home or in a hospice.
Neonatal Implications	
43	Parents should be involved in decision-making throughout and involved in practical aspects of care as much as possible. This includes the provision of facilities for overnight accommodation, encouraging kangaroo skin-to-skin care and early support for breastfeeding.
44	New models of neonatal care should be based on the BAPM definitions to increase consistency of practice and facilitate benchmarking with other neonatal units across the UK.
45	The new model of neonatal services should be redesigned to accommodate the current levels of demand, with a smaller number of intensive care neonatal units, supported by local neonatal and special care units. Formal pathways should be developed between these units to ensure that clear agreements are in place to treat the highest risk preterm babies and the sickest term babies in need of complex care in fewer centres, while returning babies to their local area as soon as clinically appropriate. Three to five neonatal intensive care units should be developed, supported by 10 to 12 local neonatal and special care units.
46	Excellent communication processes should be developed between neonatal units and with parents to ensure a full understanding of the care pathways for babies. Consistent, standardised information will also be developed to ensure all parents are aware of the options for their baby, in particular for those parents whose babies might have all, or part, of their care outwith their local unit.
47	A national Framework for Practice should be developed which outlines clear pathways for newborn care and referral. This framework should also support the development of consistent and equitable specialty paediatric and allied health professional support for local neonatal units.
48	A national model for a seven-day neonatal community service should be developed, with appropriate skill mix, robust guidelines and medical support to support early facilitated discharge and ongoing care pathways.
49	Robust guidelines and follow up processes should be developed for post-discharge babies across Scotland.
50	The role of ANNP staff should be reviewed to ensure their skill set is maximised, with a clear training and development support mechanism to retain and develop staff,
51	Neonatal Nursing Qualified in Speciality and Advanced Practice education should continue to be available and quality assured to ensure it meets course requirements and the demands of the new models of care.
52	Non-registered neonatal staff should have a clear role definition, competency framework, training and skills pathway to ensure they can work flexibly across all aspects of care.

RECOMMENDATION		
Model of Care		
53	Workforce planning processes should be reviewed to ensure adequate numbers of general paediatricians with a special interest in neonatology are being trained to deliver this service in the future.	
54	A formalised and structured approach to rotation and skills maintenance for staff in smaller units should be developed and resources through the appropriate Managed Clinical Network.	
Supporting the Service Changes		
55	A standardised risk assessment tool should be developed in relation to any decision on transfer. This development should be led by the Neonatal Transport service, in close cooperation with maternity and neonatal staff.	
56	A robust national system for the prompt identification of neonatal cot availability should be developed which is accessible through a single point of contact.	
57	Nationally agreed pathways for declaring cot availability should be agreed and formal processes should be in place for management of periods of unusually high activity.	
58	All staff involved in neonatal transfers must have appropriate training, with neonatal transfers being subject to regular review and audit processes.	
59	A further, detailed review of transport services should be undertaken, led by the neonatal transport service, to examine the best model for staffing of the service, including the potential for integration with neonatal unit staffing models.	
60	A systematic review of the additional key competencies and skills that are required for remote and rural staff should be undertaken and training and provided. This should include consideration of structured rotation to larger units for skills development, maintenance and update.	
61	Structured arrangements should be in place between remote and rural NHS Boards and an urban NHS Board for training and development in identification and management of obstetric and neonatal emergencies.	
62	A working group should be set up to explore the potential for enhanced use of telemedicine in maternity and neonatal services.	
63	Consideration should be given to development of incentives or bursaries to encourage staff to work in those areas.	
64	NHS Boards will require to undertake comprehensive workforce planning-based on the new model, including an assessment of current and future supply and demand, and new roles, and this should be fed into national level work including the Shape of Medical Training Review.	
65	In parallel with workforce planning, planning for education and training capacity should take place with NHS Education for Scotland and the universities, colleges and other training providers, to enable NHS Boards to build capacity where it is needed in time to deliver the new model.	
66	Consideration should be given to the provision of protected training time for all staff to ensure training is given the appropriate priority.	
67	National level maternity and neonatal dashboards should be developed to facilitate benchmarking and reduce variations in care.	
68	NHS Boards should ensure that the systems and processes in place within their Board to report, record and review all adverse events, are relevant, and applied to, adverse events in maternity and neonatal care, and that systems are in place to share and act on learning.	

RECOMMENDATION		
Model of Care		
69	The potential to use the new national Maternal and Perinatal Audit to provide focused audits on key issues should be explored.	
70	A national data hub should be developed to coordinate collection and verification of all Scottish related neonatal and maternity data.	
71	A single maternity care system across Scotland should be developed, which will interface with systems across healthcare settings and be accessible in all these settings.	
72	A Scottish electronic women's maternity record should be developed, that is readily accessible to women, and all professionals involved in her care.	
73	A single Maternity Network Scotland should be created to promote sharing of experience and expertise and to create regional or national protocols, for example to manage the most complex conditions at a national level.	
74	There should be a single Neonatal Managed Clinical Network for Scotland with the new model to ensure integrated working across NHS Board boundaries, including input from service management and clinical staff. The maternity and neonatal networks should come together formally on at least an annual basis to promote integrated services.	
75	Consideration should be given to developing research capacity to carry out research to inform implementation of the model of care and to funding of a national programme of maternity and neonatal health service research.	
76	The recommendations and their implementation should be evaluated for impact on outcomes and experiences of women, babies, families and staff, and resources.	

APPENDIX B

MATERNITY UNITS IN SCOTLAND

	Obstetric Unit	Freestanding Midwife-led Unit	Alongside Midwife-led Unit
NHS Ayrshire & Arran			
Ayrshire Maternity Unit, Crosshouse	✓		
Arran War Memorial		✓	
Midwifery-led Unit, Crosshouse			✓
NHS Borders			
Borders General, Melrose	✓		
NHS Dumfries & Galloway			
Cresswell Maternity Wing Dumfries & Galloway Royal Infirmary	✓		
Clenoch Birthing Centre, Galloway Community Hospital, Stranraer		✓	
NHS Fife			
Victoria Hospital, Kirkcaldy Consultant led	✓		
Victoria Hospital, Kirkcaldy Midwife led			✓
NHS Forth Valley			
Forth Valley Royal Hospital, Larbert	✓		
NHS Grampian			
Aberdeen Royal	✓		
Aberdeen Maternity Unit			✓
Dr Gray's, Elgin	✓		
Peterhead Community Hospital		✓	

	Obstetric Unit	Freestanding Midwife-led Unit	Alongside Midwife-led Unit
NHS Greater Glasgow & Clyde			
Princess Royal Maternity	✓		
Queen Elizabeth University Hospital	✓		
Royal Alexandra, Paisley	✓		
Royal Alexandra, Paisley Community Unit			✓
Inverclyde Royal, Greenock		✓	
Vale of Leven, Alexandria		✓	
NHS Highland			
Raigmore, Inverness	✓		
Caithness General, Wick ⁶¹	✓		
Dunoon & Districts Hospital		✓	
Victoria Hospital, Rothesay		✓	
Mid Argyle Hospital, Lochgilphead		✓	
Belford Hospital, Fort William		✓	
Campbeltown Hospital		✓	
Lorn and Islands Hospital, Oban		✓	
Islay Hospital		✓	
Dr MacKinnon Memorial Hospital, Skye		✓	
NHS Lanarkshire			
Wishaw General	✓		
NHS Lothian			
Simpson Centre, Edinburgh Royal Infirmary	✓		
St John's, Livingston	✓		
Lothian Birth Centre			✓

61 NHS Highland agreed to change Caithness Maternity Unit to a midwifery unit on 29 November 2016

	Obstetric Unit	Freestanding Midwife-led Unit	Alongside Midwife-led Unit
NHS Tayside			
Ninewells, Dundee	✓		
Perth Community Maternity Unit Montrose Infirmary		✓	
Community Midwifery Unit		✓	
Arbroath Infirmary Community Midwifery Unit		✓	
Dundee – Midwifery Unit			✓
NHS Western Isles			
Western Isles Hospital, Stornoway	✓		
Uist and Barra, Benbecula		✓	
Barra Community Hospital		✓	
NHS Orkney			
Balfour Hospital, Orkney	✓		
NHS Shetland			
Shetland Maternity Unit*		✓*	

* Shetland has a Community Midwifery Unit with GP support

APPENDIX C

NEONATAL UNITS IN SCOTLAND

NHS Board	Designation Level	Cot Type and Number			
		Intensive Care Unit	High Dependency Unit	Special Care	Transitional Care
NHS Ayrshire & Arran					
University Hospital Crosshouse	3	5	4	11	4
NHS Borders					
Borders General, Melrose	2	0	2	6	*
NHS Dumfries & Galloway					
Cresswell, Dumfries & Galloway	2	2	0	9	0
NHS Fife					
Victoria Hospital, Kirkcaldy	3	4	2	14	0
NHS Forth Valley					
Forth Valley Royal Hospital, Larbert	2	5	2	13	0
NHS Grampian					
Aberdeen Royal	3	10	7	19	**
Dr Gray's, Elgin	1	0	0	4	0
Greater Glasgow and Clyde					
Neonatal Unit, Royal Children's Hospital, Glasgow	3	16	14	20	0
Princess Royal Maternity, Glasgow	3	4	6	18	0
Royal Alexandra, Paisley	2	3	3	10	0
Highland					
Raigmore, Inverness	2	2	1	8	***
Lanarkshire					
Wishaw General	3	8	10	11	6

* provided on postnatal ward and therefore varies from day to day

** 1 Isolation room, 3 Parentcraft rooms, 1NNU clinic

*** Cots are used flexibly to a maximum of 18 points, ITU: 4 points, HD: 2 points, SC: 1 point

NHS Board	Designation Level	Cot Type and Number			
		Intensive Care Unit	High Dependency Unit	Special Care	Transitional Care
Lothian					
Simpson Centre for Reproductive Health, ERI	3	9	8	22	0
St John's Hospital, Livingston	2	0	2	8	0
Tayside					
Ninewells, Dundee	3	4	3	14	4
Orkney	-	-	-	-	-
Shetland	-	-	-	-	-
Western Isles	-	-	-	-	-
Total Neonatal Cots in Scotland		72	64	187	14

APPENDIX D

AIM AND REMIT OF THE REVIEW

To examine choice, quality and safety of maternity and neonatal services in light of current evidence and best practice, in consultation with the workforce, NHS Boards and service users, and make recommendations for a Scottish model of care that contributes to the Scottish Government's aims of person-centred, safe and effective care which provides the right care for every woman and baby every time and gives all children the best start in life.

Remit of the Review

The Review group will provide a report to Ministers which records its findings and makes recommendations against the points below.

Choice

The Review will:

- Examine what we mean by choice, informed choice and consent, what is realistic and practical in offering women choice in maternity services, and examine this for women in all care settings.
- Explore the women and families perspective on choice and what they think it means and what they want.
- Consider whether choice is provided equitably to all service users, including groups who do not engage well with mainstream services.
- In the neonatal care setting, the Review will examine the choices available to families involved with neonatal services, and how we support provision of those choices.

Safety

The Review will:

- Examine the processes in place to report, examine and learn from adverse events and incidents in maternity and neonatal care,
- Examine cultural and behavioural issues within the maternity and neonatal care setting that influence both safety and experience of care.
- Review the issues faced by remote and rural maternity and neonatal units and consider how they can be addressed and supported.

Quality

The Review will:

- Examine risk assessment protocols, referral pathways and models of maternity and neonatal care to ensure our services are designed to deliver the best care in the best place with the best outcomes, all of the time, recognising that this will require local, regional and national level solutions.
- Assess the quality, quantity and efficiency of data collection and consider what is needed and how it is used to drive service improvement.
- Examine whether we have the right balance of skills in the care setting, and that we are using those skills efficiently and effectively, and have appropriate and available training to build a sustainable workforce.

Engagement

The Review will:

- Have a strong focus on engagement with service users and staff, and that a clear strategy for this engagement and for using the results to inform the review process.

APPENDIX E

REVIEW GROUP MEMBERSHIP

Review Group

Name	Job Title	NHS Board/Organisation
Jane Grant (Review Chair)	Chief Executive	NHS Forth Valley
Dr Corinne Love (Vice Chair)	Senior Medical Officer (Obstetrics) Consultant Obstetrician	Scottish Government NHS Lothian
Ann Holmes (Vice Chair)	Chief Midwifery Advisor and Associate Chief Nursing Officer	Scottish Government
John Froggatt	Head, Improving Health and Wellbeing Division	Scottish Government
Gillian Smith	Director for Scotland	Royal College of Midwives
Jean Davies	Clinical Nurse Manager, Paediatrics	Royal College of Nursing Children and Young People NHS Ayrshire & Arran
Dr Steven C Monaghan	Consultant Obstetrician, Clinical Director, Women and Children's Services	NHS Fife
Professor Alan Cameron	Consultant Obstetrician	NHS Greater Glasgow & Clyde and Vice President, Clinical Quality, Royal College of Obstetricians and Gynaecologists
Dr Helen Mactier	Consultant Neonatologist Chair of Scottish Neonatal Consultants Group	NHS Greater Glasgow & Clyde
Dr Edile Murdoch	Consultant Neonatologist SEAT MCN Clinical Lead	NHS Lothian
Dr Elizabeth McGrady	Consultant Anaesthetist	NHS Greater Glasgow & Clyde
Dr Jenny Bennison	GP Executive Officer (Quality)	NHS Lothian Royal College of General Practitioners (RCGP) Scotland
Jacqui Simpson	Director of Regional Planning	NHS Lothian South East and Tayside (SEAT) Managed Clinical Network

Name	Job Title	NHS Board/Organisation
Sharon Adamson	Director of Regional Planning	NHS Forth Valley West of Scotland Managed Clinical Network
Dr Iain Wallace	Medical Director	NHS Lanarkshire
Professor Angela Wallace	Nurse Director Chair, Scottish Executive Nurse Directors	NHS Forth Valley
Alison Wright	Neonatal Nurse Chair, Scottish Neonatal Nurses Group	NHS Tayside
Justine Craig	Head of Midwifery and Chair of Lead Midwives Scotland Group	NHS Tayside
Hannah Irvine	Supervisor of Midwives	NHS Dumfries & Galloway
Tracy Miller	Community Midwife	NHS Grampian
Professor Mary Renfrew	Professor of Mother and Infant Health and Director, Mother and Infant Research Unit Director, Scottish Improvement Science Collaborating Centre	University of Dundee
Ann McMurray	Scottish Network Convenor	Stillbirth and Neonatal Death Charity (SANDS)
Rosie Dodds	Senior Policy Adviser	National Childbirth Trust (NCT) (to October 2016)
Helen Kirrane	Campaigns and Policy Manager	BLISS

The Chair also appointed an Executive Group, comprising the Vice Chairs, John Froggatt and the Chairs of the four Sub-Groups.

APPENDIX F

SUB-GROUP REMITS AND MEMBERSHIP

Sub-Group: Evidence and Data

Remit:

The group will consider the evidence base pertinent to the quality of maternity services and neonatal services in Scotland, based on available evidence and data, and other sources of evidence such as outputs from NHS Board staff events and service user focus groups. Evidence may also include available data on internationally comparable maternity and neonatal services.

The group will also provide recommendations on the points below to inform the models of care and workforce Sub-Groups to improve quality, safety and choice in maternity and neonatal services.

1. Complement and inform the models of care work by examining evidence and data on models of care and relevant aspects of workforce, including evidence about delivery of services across a diverse range of geographical and social circumstances.
2. Consider evidence and data about effectiveness, safety, equity and cost in the organisation and delivery of person-centred maternity and neonatal services.
3. Examine evidence and data in relation to short and longer-term clinical and psycho-social outcomes for women and children, where appropriate; sustainable service development; and user experiences.
4. Examine evidence and data with an emphasis on inequalities in the organisation and delivery of maternity and neonatal care and the needs of families and babies.

Sub-Group Chairs:

Professor Mary Renfrew, Professor of Mother and Infant Health and Director of Mother and Infant Research Unit, University of Dundee, Director, Scottish Improvement Science Collaborating Centre

Professor Alan Cameron, Consultant Obstetrician, NHS Greater Glasgow & Clyde and Vice President of Clinical Quality, Royal College of Obstetricians and Gynaecologists.

Evidence and Data Sub-Group Members:

Name	Job Title	NHS Board/Organisation
Professor Alan Cameron (Chair)	Consultant Obstetrician	NHS Greater Glasgow & Clyde/Vice President, Clinical Quality, Royal College of Obstetricians and Gynaecologists
Professor Mary Renfrew (Chair)	Professor of Mother and Infant Health: Director, mother and Infant Research Unit & Director, Scottish Improvement Science Collaborating Centre	University of Dundee
Professor Edwin van Teijlingen	Social Scientist	Centre for Midwifery Maternal & Perinatal Health Bournemouth University
Professor Tracy Humphrey	Dean/Professor of Midwives	Edinburgh Napier University
Professor Cam Donaldson	Yunus Chair in Social Business & Health (Health Economist)	Glasgow Caledonian University
Dr Rachael Wood	Consultant in Public Health Medicine	NHS National Services Scotland Information Services Division
Rosie Dodds	Service user (Maternity)	National Childbirth Trust (to October 2016)
Dr John O'Dowd	Consultant in Public Health Medicine	NHS Greater Glasgow & Clyde Representing the Scottish Directors of Public Health
Dr Helen Bryers	Head of Midwifery and Honorary Research Fellow	NHS Highland Centre for Rural Health University of Aberdeen
Dr Yvonne Freer	Neonatal Nursing Academic	NHS Lothian/University of Edinburgh
Professor Ben Stenson	Consultant Neonatologist	NHS Lothian/University of Edinburgh
Dr Ron Gray	Mental Health and Epidemiology	National Perinatal Epidemiology Unit (NPEU)
Professor Marion Knight	Professor of Maternal and Child Population Health	National Perinatal Epidemiology Unit (NPEU)
Dr Anna Gavine	Research Fellow	University of Dundee
Professor Jane Norman	Professor of Maternal and Fetal Health Honorary Consultant Obstetrician	University of Edinburgh NHS Lothian
Professor John Frank	Public Health Research & Policy	University of Edinburgh
Professor Bill McGuire	Neonatal Academic	University of York/York NHS
Linda Hannah	Neonatal Nursing Academic	University West of Scotland
Professor Pat Hoddinott	Chair in Primary Care	University of Stirling

Maternity and Neonatal Review

Sub-Group: Workforce

Remit:

The group will consider the current key workforce challenges and, based on the output from the other working groups, will determine the workforce requirement for a safe and sustainable service across NHSScotland.

This will include consideration of:

- Workforce statistics and demographic profile
- Roles of maternity and neonatal professionals and variation across Scotland
- Skills/training/education
- Working in remote and rural locations

The group will also consider professional culture in terms of workplace communications and compassionate engagement with service users.

The group will provide recommendations to ensure we have a modern, flexible and efficient workforce that can deliver safe, effective and high quality maternity and neonatal services, that puts mothers, babies and families at the centre of care.

Sub-Group Chairs:

Sharon Adamson, Director of Regional Planning, West of Scotland

Jacqui Simpson, Director of Regional Planning, South East and Tayside

Workforce Sub-Group Members:

Name	Job Title	NHS Board/Organisation
Jacqui Simpson (Chair)	Director of Regional Planning SEAT	South East and Tayside Region
Sharon Adamson (Chair)	Director of Regional Planning WoS	West of Scotland Region
Dr Lucie Buck	Obstetrician/Gynaecologist	NHS Ayrshire & Arran
Hannah Irvine	Supervisor of Midwives	NHS Dumfries & Galloway
Cherylene Dougan	Maternity Care Assistant	NHS Dumfries & Galloway
Helene Marshall	Director of the Scottish Multi-professional Maternity Development Programme	NHS Education for Scotland
Susan Key	Programme Director, Women, Children, Young People and Families	NHS Education for Scotland
Fiona Tait	Network Manager, Neonatal Managed Clinical Network, West of Scotland Managed Clinical Network	NHS Forth Valley / West of Scotland Managed Clinical Network
Dr Peter MacDonald	Consultant Neonatologist Chair of NHS Education for Scotland Speciality Training Board (Obstetrics, Gynaecology & Paediatrics)	NHS Greater Glasgow & Clyde
Dr Morag Campbell	Consultant Neonatologist	NHS Greater Glasgow & Clyde
Pamela Cremin	Workforce Planning and Development Manager	NHS Highland

Name	Job Title	NHS Board/Organisation
Susan Stewart	Associate Director of Nursing and Head of Midwifery	NHS Lanarkshire
Dr Dina McLellan	Consultant Obstetrician & Gynaecologist	NHS Lanarkshire
Dr Claire Alexander	Consultant Obstetrician	NHS Lothian
Lynne Kerr	Clinical Nurse Manager	NHS Lothian
Tracey Steedman	Principal Information Analyst	NHS National Services Scotland
Kathleen Carolan	Director of Nursing & Acute Services	NHS Shetland
Jackie Mitchell	National Officer	Royal College of Midwives
Barbara Sweeney	Professional and trade union workforce representative, RCN Senior Officer	Royal College of Nursing
Grant Hughes	Head of Workforce Planning Policy	Scottish Government
Terri Thomson	Policy Officer	Scottish Government
Daniel MacDonald	Medical Workforce Adviser	Scottish Government
Derek Philips	Workforce Planner	South, East and Tayside
Anne Budd	Lay person	

Maternity and Neonatal Review

Sub-Group: Maternity Models of Care

Remit:

The group will look at existing service shape, and current models of maternity care, in the national, regional and local context.

The group will make recommendations for future models of care, balancing sustainability, person centred care, quality, safety and choice, within the context of the current resource environment.

In making their recommendations, the group should consider the following:

- Focus on person-centred pregnancy journey for mothers, families and babies

- Supporting informed choice in maternity care, including place of birth
- Risk assessment, care pathways and multidisciplinary care
- Quality and safety
- Governance, accountability and leadership at national, regional and local levels
- Capacity, communications, transport and IT
- Consistency of services 24/7 and sustainability
- Delivery of care in remote and rural settings

Sub-Group Chairs:

Justine Craig, Head of Midwifery, NHS Tayside

Dr Steven Monaghan, Consultant Obstetrician, NHS Fife

Maternity Models of Care Sub-Group Members:

Name	Job Title	NHS Board/Organisation
Justine Craig (Chair)	Head of Midwifery Chair of Lead Midwives Scotland Group	NHS Tayside
Dr Steven C Monaghan (Chair)	Consultant Obstetrician Clinical Director Women and Children's Services	NHS Fife
Alison Baum	Patients Representative	Best Beginnings
Dr Jane E Ramsay	Consultant Obstetrician & Clinical Director for Obstetrics	NHS Ayrshire & Arran
Nicky Berry	Head of Midwifery	NHS Borders
Karen King	Consultant Midwife	NHS Dumfries and Galloway
Jean Cowie	Health Visitor	NHS Education for Scotland
Pauline Beirne	National Leaf Allied Health Professions Child and Young People National Lead	Scottish Government
Dr Mary Ross-Davie	Academic	NHS Education for Scotland
Evelyn Frame	Head of Midwifery	NHS Greater Glasgow & Clyde
Dr Fiona Mackenzie	Consultant Obstetrician	NHS Greater Glasgow & Clyde
Dr Elizabeth McGrady	Consultant Anaesthetist	NHS Greater Glasgow & Clyde
Tracy Miller	Community Midwife	NHS Grampian
Dr Tara Fairley	Consultant Obstetrician	NHS Grampian
Kerry McKenzie	Organisational Lead	NHS Health Scotland

Name	Job Title	NHS Board/Organisation
Dr Lucy Caird	Consultant Obstetrician	NHS Highland
Leigh-Ann Johnstone	Breastfeeding Support Service Assistant	NHS Lanarkshire
Dr Jenny Bennison	GP Executive Officer (Quality)	NHS Lothian Royal College of General Practitioners (RCGP) Scotland
Dr Ellen Golightly	Speciality Registrar in Obstetrics & Gynaecology	NHS Lothian
Suzanne McHattie	Sonographer	NHS Lothian
Kate Kenmure	Head of Midwifery	NHS Shetland
Iona Duckett	Community Midwife	NHS Tayside
Dr Pamela Johnston	Consultant Anaesthetist	NHS Tayside
Catherine McDonald	Head of Midwifery	NHS Western Isles
Dr Allan Jackson	Consultant Neonatologist	ScotSTAR
Dr Corinne Love	Senior Medical Officer (Obstetrics) Consultant Obstetrician	Scottish Government NHS Lothian
Ann Holmes	Chief Midwifery Advisor and Associate Chief Nursing Officer	Scottish Government
Professor Helen Cheyne	Professor of Maternal and Child Health	Nursing, Midwifery and Allied Health Professions (NMAHP) Research Unit
Joanna White	Lay Person	
Jackie Montgomery *	Lead Physiotherapist	NHS Greater Glasgow & Clyde

* Not a formal member of the group but contributed to the evidence considered and attended a meeting of the group.

Maternity and Neonatal Review

Sub-Group: Neonatal Models of Care

Remit:

The group will review the existing service shape and current models of neonatal care, in the national, regional and local context and consider the needs of, and support for, families of neonates.

The group will make recommendations for future models of care in Scotland, taking into account safety, quality and sustainability and patient-centred care within the context of the current resource environment.

In making their recommendations, the group will consider the following:

- Putting families, mothers and babies at the centre of care
- Governance, accountability and leadership at national, regional and local levels

- Risk assessment, care pathways and multidisciplinary care
- Quality and safety
- Capacity, communications, transport and IT
- Consistency of services 24/7 and sustainability
- Delivery of care in remote and rural settings
- Inequalities and access to services and outcomes
- Provision of appropriate information for parents and families

Sub-Group Chairs:

Dr Helen Mactier, Consultant Neonatologist and Honorary Clinical Associate Professor, NHS Greater Glasgow and Clyde and the University of Glasgow

Dr Edile Murdoch, Consultant Neonatologist, NHS Lothian

Neonatal Models of Care Sub-Group Members:

Name	Job Title	NHS Board/Organisation
Dr Helen Mactier (Chair)	Consultant Neonatologist & Chair of Scottish Neonatal Consultants Group	NHS Greater Glasgow & Clyde
Dr Edile Murdoch (Chair)	Consultant Neonatologist & SEAT MCN Clinical Lead	NHS Lothian
Helen Kirrane	Campaign and Policy Manager/ Neonatal patient representative	Bliss
Louise Andrew	Lay Person	N/A
Dr Alan Fenton	Consultant Neonatal Paediatrician & president BAPM	Newcastle upon Tyne Hospitals NHS Foundation Trust
Dr Jon Staines	Neonatologist / Paediatrician	NHS Ayrshire and Arran
Dr Andy Duncan	Consultant Paediatrician	NHS Borders
Emma Allen	Neonatal Nurse	NHS Borders
Shirley Syme	Neonatal Nurse	NHS Borders
Jeana Arnott	Neonatal Nurse	NHS Fife
Lesley Menczykowski	Neonatal Nurse	NHS Forth Valley
Dr Katherine McKay	Consultant Paediatrician (CCH) Senior Medical Officer	NHS Greater Glasgow & Clyde Scottish Government
Dr Annie Robertson	Neonatologist / Paediatrician	NHS Grampian
Sonja Brakell	Midwifery Team Leader, CMU	NHS Grampian

Name	Job Title	NHS Board/Organisation
Dr Lesley Jackson	Consultant Neonatal Medicine	NHS Greater Glasgow & Clyde
Dr Allan Jackson	Consultant Neonatologist	ScotSTAR
Dr Iain Wallace	Medical Director	NHS Lanarkshire
Dr Gemma Sullivan	Neonatal Trainee	NHS Lothian
Dr Peter Fowlie	Neonatologist / Paediatrician	NHS Tayside
Alison Wright	Neonatal nurse (ANNP)	NHS Tayside
Peter Lindle	Strategy Implementation Support Manager	Scottish Ambulance Control Centres
Professor David Field	Neonatologist	University of Leicester

APPENDIX G

EFFICIENT EVIDENCE REVIEWS: AUTHORS AND SPONSORS

Efficient Review		Authors	E&D Group Sponsor	Sub-Group Sponsor
1	Models of Care Definitions	Anna Gavine Mary Renfrew	-	-
2	Maternity Critical Care	A Gavine S MacGillivray M Renfrew	Jane Norman Tracy Humphrey	Liz McGrady
3	Models of Care for Infants Requiring Neonatal Services and their Families	A Gavine S MacGillivray M Renfrew	Ben Stenson Bill McGuire Rosie Dodds Yvonne Freer	Helen Mactier Alison Baum
4	Improving Interprofessional Working	A Gavine S MacGillivray M Renfrew	Edwin van Teijlingen Helen Bryers	Sharon Adamson Karen King
5	Improving care, services, and outcomes for women and babies from vulnerable population groups	A Gavine S MacGillivray M Renfrew	John O'Dowd Rosie Dodds Rachael Wood	Helen Cheyne Kerry McKenzie Kat Hasler (NHS HS)
6	Continuity Models of Care	M Ross-Davie	John O'Dowd Helen Bryers Jane Norman	Justine Craig
7	Place of Maternity Care, including Place of Birth	M Ross-Davie	Marion Knight Cam Donaldson Rosie Dodds	Justine Craig
8	Organisation of services for childbearing women across the continuum (including methods for Assessment/ Triage in Early Labour)	A Gavine S MacGillivray M Renfrew	John O'Dowd Helen Bryers Jane Norman Pat Hoddinott	Helen Cheyne Jenny Bennison Pamela Johnson Jean Cowie Evelyn Frame Iona Duckett Jenny Bennison
9	Narrative review of economic issues in maternal and neonatal care	M Renfrew C Donaldson R Woods		
10	Data Benchmarking	R Woods J Frank J Norman	M Renfrew	
11	Outcomes Matrix	M Renfrew A Gavine	T Humphrey	
12	Evidence Informed Commentary	M Renfrew J Frank		

APPENDIX H

EFFICIENT EVIDENCE REVIEWS: CONCLUSIONS

Definitions of Models of Care

No uniform definition of either maternity models of care or neonatal models of care was identified by this efficient evidence review. Crucially, in maternity models of care the primary focus is on who is delivering the care and making decisions (i.e. midwife, obstetrician) and/or the location of the care.

Whereas, in neonatal models of care, the focus is on whether or not the family were involved in the care and/or decision-making, and standards of how to involve parents in this process have detailed by both BFI UK (UNICEF, 2012) and Staniszewska et al. (2012). However, as the maternity models of care focus more on service configuration and do not meet the definition of a model of care (as defined by Davidson et al., 2006), further consideration of how to operationalise a maternity model of care is necessary.

In the introduction to this report, a way forward was suggested to enable analysis of our rapid reviews, and the transparent presentation of material to the Sub-Groups.

Improving care, services and outcomes for women and babies from Vulnerable Population Groups

The lack of good quality evidence on interventions/actions for vulnerable groups in general was a consistent theme across the systematic reviews and was also identified by the NICE guideline on complex social factors and pregnancy (National Collaborating Centre for Women's and Children's Health, 2010) and is highlighted in the evidence summary by Woodman and Scott (2012).

However, key themes did emerge across the included reviews and primary studies for women in different vulnerable groups and should be considered in the model of care. Specifically, the importance of continuity of care in enabling women to develop trusting relationships. This can be facilitated through having a universal model of care, in which all women receive usual midwifery care and vulnerable women with additional needs receive additional care tailored to their individual needs, however, their care will still be co-ordinated by one primary midwife.

Such an approach is akin to the proportionate universalism approach proposed by Marmot (2010). Marmot argues that focusing solely on the most disadvantaged members of society will not tackle health inequalities. Instead, a universal model is needed, however, the scale and intensity of services delivered is proportionate with the level of disadvantage. Delivery of such a service, would require effective multi-agency working as outlined in GIRFEC (Steading, 2009).

Building a successful relationship was also consistently found to be dependent upon having non-judgemental staff who were empathetic and knowledgeable of the women's individual needs. Positive staff attitudes and knowledge could be improved by culturally sensitive training and education.

The ten Health Scotland's Principles (identified in the rapid review by Scott and Woodman [2010]) also provide guidance as to how all staff should treat women from vulnerable groups. Specifically: do good; do not harm; fairness; sustainability; respect; empowerment; social responsibility; participation; openness; and accountability.

Improving care, services and outcomes for women and babies from Vulnerable Population Groups

– *continued*

Another aspect that was found to be key was the need for effective communication, this refers not only to good interpersonal skills but also providing assistance for women with low literacy or for whom English is not a first language. There was some emerging evidence to support the use of culturally relevant lay workers, both for women with language difficulties and also to provide support more generally for women from other vulnerable groups. However, such an approach would require careful development and evaluation in different contexts before conclusions can be drawn regarding its ability to improve outcomes.

To conclude, there is clearly, therefore, no panacea for improving outcomes and experiences of care for vulnerable women and their babies. However, as the barriers to care were generally consistent across different vulnerable groups and indeed many of the vulnerable groups overlap, there is a need for highly accessible (i.e. multiple barriers addressed), respectful and technically high quality services for all women, with the ability to layer on/integrate additional care for specific conditions.

Models of Maternity Care for Critically Unwell Women

This efficient evidence review identified a paucity of evidence in maternal critical care configuration and provision, with only eight guidelines (the specifics of care provision not being underpinned by a strong evidence), one meta-ethnography and one qualitative primary study, four case studies and the two MBRRACE-UK reports as having any information pertinent to maternal critical care provision.

Nevertheless, from the available information we can still go some way to addressing the aims of this review. Specifically, in terms of determining the optimal model of care for maternal critical care provision which is acceptable for women, both critical care and maternity/obstetric needs must be considered, and normal midwifery care should be continued. This could in part be facilitated by training midwives in critical care skills and training critical care nurses in midwifery skills. In addition, women and babies should be kept together whenever possible to enable the establishment of attachment process and breastfeeding.

Due to the diverse nature of Scotland's geography and uneven distribution of population, different models could be used for different locations. For instance model one (a dedicated level 2 unit staffed by appropriately trained midwives with input from anaesthetists and obstetricians) may be suitable for an area with a high volume of women requiring such services, whereas the other approaches may be more appropriate in areas with a smaller amount of women requiring such services. The case studies do provide some illustration as to how model one could be delivered, however, it must be stressed that there is no well-conducted evidence to support this yet.

Organisation of Services for Childbearing Women and Babies across the Continuum

Highly processed evidence was identified in the form of Cochrane systematic reviews (n=12), the reviews and syntheses conducted as part of the development of the Lancet Series on Midwifery framework for quality maternal and newborn care (n=3), the reviews conducted as part of the English maternity services review (n=3) and NICE guidelines (n=3), as well as an additional three systematic reviews and evidence from highly relevant primary studies (n=7).

The highly processed reviews themselves were of a high quality, however, the included studies were of variable quality.

The evidence could be broadly sorted into the following categories: models of antenatal care; models of assessment during labour; models of intrapartum care (including transfers); models of postnatal care (including in-hospital and community care); models of breastfeeding care; and communication and relationships between women and maternity health care providers.

The reviews conducted for the development of the framework for quality maternal and newborn care identified some overarching principles that should be considered before the conclusions of each category are considered.

First, there is an important inter-relationship between effective practices and how care is delivered. More specifically, quality care should not dichotomise safety and choice. Instead, the service should ensure safety by implementing effective practices, tailoring care to their needs, and treating all women and babies with respect and enabling them to make informed decisions.

Secondly, there should be a universal model of care that runs across the whole continuum, whereby all women and babies receive normal midwifery care and those with additional needs receive the specific additional necessary care in conjunction with midwifery care.

Thirdly, the care provided should aim to optimise normal processes and avoid unnecessary intervention. Finally, care should be provided by an interdisciplinary team with the appropriate skill mix to care for a woman's individual needs, integrated across all settings.

Models of Care for Infants requiring Neonatal Services and their Parents

The review identified 30 systematic reviews, which were broadly divided into the following categories: parents' views and experiences of neonatal care units (n=11); methods for improving family-centred care (n=10); service configuration (n=5), transitional/discharge care (n=3) and workforce configuration (n=1). In addition, thirteen primary studies not included in the systematic reviews and which examined service (n=9) and workforce configuration (n=4), were also identified and included in the review. Guidelines from British Association of Perinatal Medicine (BAPM) and the Department of Health, and a NICE quality framework were also identified as part of the review.

Some key themes did recur across the reviews of parents' views and experiences. Specifically, we can stipulate that families need to have the opportunity to have as much contact with their baby as possible and as far as possible be involved in providing care including breastfeeding and kangaroo care and also decision-making processes.

A family-centred model of care such as this one, enables parents to take on a parental identity and provide a sense of normality, at a very stressful time.

Models of Care for Infants requiring Neonatal Services and their Parents – *continued*

In terms of interventions/actions for improving family-centred care, a range of reviews of diverse interventions were identified. Two of these were high quality Cochrane reviews on the use of kangaroo care in stable infants which reported a wide range of benefits in terms of infant and mother outcomes. A well-conducted HTA review found strong evidence that short periods of kangaroo care (up to 1hr) increased the duration of breastfeeding up to one month post discharge.

BFI accreditation of the maternity unit was also associated with an increase in number of infants receiving any breastmilk – new guidelines for BFI accreditation for neonatal units are now available and may be beneficial – evaluation is needed.

Five systematic reviews examined configuration of services, specifically, regionalisation of care and neonatal transport. These reviews had a significant number of limitations in terms of included studies (e.g. date of publication, poor quality, lack of studies) so pertinent primary literature was sought instead. Together, these studies suggest that regionalization of neonatal services can increase the number of very preterm infants and VLBW infants being delivered in high activity neonatal intensive care units, and this may result in a decreased mortality rate for the most vulnerable infants. However, whilst centralisation of intensive care services may provide the optimal outcomes for very preterm, VLBW and very sick infants a different model of service provision would potentially be more appropriate for preterm infants who are more mature (>32 weeks) or higher birth weight (>1500g) and otherwise stable. Any service configuration that requires babies to move a distance from their home should pro-actively consider how to support parents to remain in close contact with their infants and also facilitate a return to more localised care as soon as possible to ensure parental involvement can be optimised.

Only one review examining workforce configuration was identified and this reported that low nurse-patient ratio was associated with higher mortality. Due to the lack of systematic review level evidence, primary literature was sought instead and four studies were identified. Again these studies have limitations, particularly as they are observational. However, they do suggest that under-staffing and over-crowding are associated with poorer outcomes for infants requiring care.

Finally only one systematic review, which included one study on early supported discharge was identified. Whilst this showed positive results, it highlights a dearth of evidence in this area and a need for further research to examine the safety, efficacy, acceptability, and resource implications of early supported discharge.

Improving Interprofessional Working

This review first sought to identify key issues in inter-professional working through examination of the Morecombe Bay Investigation (Kirkup, 2015) and the MBRRACE-UK reports (Draper et al., 2015, Knight et al., 2014, Knight et al., 2015), as well as examining the views of women and their families through the NHSScotland Maternity Survey (Cheyne et al., 2015) and the POPPY study (POPPY Steering Group, 2009).

The Morecombe Bay Investigation, identified poor inter-professional working relationships between different groups of staff as being a major contributing factor. The MBRRACE-UK reports identified issues in lack of leadership for women with multiple care needs, poor information sharing (i.e. through medical records) leading to women receiving inconsistent information and staff being unaware of who is, and should be, involved in care. In addition, communication difficulties at the interface of different services (between primary and secondary care and also between different secondary care services) were also noted. This is particularly important in the context of risk escalation and de-escalation, whereby staff should feel supported in receiving advice from a senior colleague or a colleague in another discipline, about whether additional care for the woman is required.

Both the review of NHSScotland Maternity Services (Cheyne et al., 2015) and the POPPY Study identified that women were given inconsistent information from different staff, highlighting the need for consistent record keeping.

Secondly, this rapid review aimed to identify evidence (in the form of systematic reviews or primary studies) on interventions/ actions/ strategies to improve inter-professional working and also barriers and facilitators to inter-professional working. One of the first conclusions of this review is lack of evidence in inter-professional working in maternity care services, in particular, working with other NHS services (e.g. social work, criminal justice system). Nevertheless, five non-systematic reviews, one systematic review and 25 primary studies were identified and can be used to help distil core principles.

Three systematic reviews and ten primary studies examined the interventions/actions/strategies for improving inter-professional working. Inter-professional Education (IPE) was the most commonly utilised strategy by six separate studies and detailed in one systematic review. IPE either took the form of pre- or post-qualifying education sessions or multidisciplinary emergency skills training.

The evidence around multidisciplinary skills training showed some promise, however as there is no measurement of how this translates into actual outcomes for women and babies, further evaluation on this level is therefore necessary. The evidence around IPE pre- and post-qualifying is very limited in terms of the quality of the studies, however, generally the studies demonstrated positive effects on team working abilities. In particular, qualitative evidence around these studies indicated that this training gave participants a better understanding of their colleagues' roles. This is important as it was identified as a barrier to good inter-professional working. However, again there is no evidence as to how this translates into clinical outcomes.

Due to the lack of good evidence on actions to improve inter-professional working, it is worth considering what staff perceive the barriers and facilitators to inter-professional working to be. Fifteen separate studies which were generally well conducted examined this across a range of countries.

Specifically, there needs to be opportunities for health professionals from different disciplines to regularly meet and discuss their clients together. In addition to providing collaborative care, this will also give health professionals a chance to understand each other's roles and competencies, get to know one another and develop trust. This will enable collaborative working when the women is receiving care from multiple providers and should potentially improve referral and risk escalation and de-escalation processes. This can potentially be further facilitated by regular contact in the workplace (including informal settings) and also through IPE, including throughout undergraduate learning.

Standardised approaches to improve communication, both in terms of records of women (whether women held or not) and babies (particularly at the interface of primary care and hospital care) and also when handing care over or in emergency situations (e.g. SBAR tool), could help make inter-professional working easier and reduce mistakes that may potentially lead to adverse outcomes.

Place of Birth

There is strong, high quality evidence to support the promotion of real choice to women about the location of their maternity care: through the antenatal, intrapartum and postnatal period.

High quality large scale observational studies of place of birth have demonstrated that midwifery care settings including home birth, freestanding midwifery units and alongside midwifery units, are a safe option for the majority of healthy women with uncomplicated pregnancies.

There appears to be a significant difference between the proportion of women that indicate in surveys that they would like to give birth at home or in midwifery units, compared to the very low proportion of women who currently give birth in these settings across Scotland.

Systems should be developed to support the provision of real choice in relation to place of care and birth, including evidence-based accessible information and decision aids for women, families and health professionals, appropriate physical settings to act as 'community hubs', the relocation of maternity professionals to reflect the shift from hospital centred to community centred care and the implementation of team systems that support the provision of community-based maternity care including intrapartum care.

Continuity Models of Care

There is strong high quality evidence to support the implementation of a model of maternity care that provides continuity of carer through the childbirth journey. Midwife-led continuity models of care have been found to have a range of benefits in relation to birth outcomes with no identified adverse outcomes. Where women require team care due to risk factors or complications, it is of benefit for them to also receive continuity of carer that enables them to build relationships with the health professionals providing their care. The desire for greater levels of continuity of carer comes across strongly in all surveys and consultations with maternity service users.

APPENDIX I

FURTHER RESEARCH: RECOMMENDATIONS

Recommendations for research priorities and data collection and analysis related to the Review.

Research priorities identified from efficient evidence reviews:

Neonatal care

Evaluation is needed of:

- the effect of kangaroo skin-to-skin care in extremely low birth weight infants in the early days of life (e.g. physiological stability, neurodevelopment and growth) and their parents.
- the new guidelines for Unicef BFI accreditation for neonatal units on infant and family outcomes with an economic analysis of implementing/delivering the Unicef BFI programme.
- different models of care delivery (e.g. early supported discharge and transitional care) on infants and their parents and economic analyses of implementing/delivering the models.
- different workforce configurations (e.g. determining the knowledge and skills required for a particular role/service need and aligning this with the personnel best able to meet that requirement) on infant and family outcomes and associated service delivery costs.

Care across the continuum

- Development and evaluation of group antenatal care to assess its acceptability and effectiveness in a Scottish setting.
- Evaluation of effectiveness, cost-effectiveness, and acceptability of antenatal and postnatal care when provided in the community (either at home or in a community hub/health centre) or in a hospital; including examination of factors such as duration of stay and optimum frequency, duration, intensity and timing of visits.
- The use of telephone/newer technologies to support postnatal care would require further development and evaluation in a Scottish setting.

Care for vulnerable women

- No studies on maternity services for homeless women and sex workers were identified. There was a lack of good quality evidence around care for women from specific vulnerable groups including women with substance and alcohol misuse problems, women from ethnic minorities, women with disabilities and women in the criminal justice system. There is therefore a need to include these populations of women in research on maternity services both in terms of collecting evidence on their views and experiences and development of interventions.
- There is a need for high quality studies conducted in a Scottish setting to evaluate the use of promising approaches to care for vulnerable and disadvantaged women. These approaches could include the use of mobile clinics, link workers in GP surgeries, culturally sensitive community-based lay women support, group antenatal care, broad-multifaceted preterm birth and stillbirth prevention programmes, comprehensive multidisciplinary antenatal and postnatal care with outreach services, comprehensive general antenatal clinical care providing an enhanced range of services, nutritional education, incentives for antenatal and postnatal care use and maternity care co-ordination services.

Maternity care for critically unwell women

- Delivering high quality critical care for women and babies will require models which explicitly take account of the geographical challenges across Scotland. This approach will require the development of models of safe, multidisciplinary and interdisciplinary working. The emergent models must be evaluated to ensure safety and equality of outcomes and experiences.

Interprofessional working

- There was a general lack of evidence on inter-professional working in maternity services, in particular working with other services (e.g. social work, criminal justice system).
- Good quality studies on inter-professional education both at an undergraduate and post-qualifying level are required and in particular should consider the impact on outcomes for women and babies.

- Further development and evaluation for workplace strategies (particularly in remote and rural settings) for improving inter-professional working-based upon the barriers and facilitators identified in this rapid review is required

Place of birth

- Development of 'community hubs' will need development and piloting before wider implementation and evaluation
- To both realise the positive outcomes from increasing use of midwifery-led units for women envisaging a straightforward birth and to meet women's needs, further evidence on the decision-making process around place of birth in Scotland is required. Assessment during pregnancy and after the birth will be needed to fully explore women's views. For example:
 - What information do women receive and what do they need?
 - What sources are most popular and effective?

Continuity of care

- Economic analysis of midwife-led continuity of care is needed.

Data collection and analysis

Scotland is fortunate to have long-established robust national datasets on many aspects of maternal and neonatal health, for example statutory recording of live and still births and deaths and routine health service data on women admitted to obstetric care. More recently established UK-wide enhanced surveillance of maternal and perinatal deaths and various national audits, quality improvement programmes, and surveys are also important.

Despite these strong foundations, room for improvement exists. Over the course of the Review, it has been clear that the available data are not always capable of answering key questions of interest to policy and service development. Specific priorities for enhancement of currently available routine data on maternal and neonatal health are therefore suggested below:

Enhance the existing national record of obstetric inpatient care (SMR02) to:

- Accurately record specialty (midwifery or obstetrics) and transfers between specialties to enable women receiving different models of care to be distinguished
- Improve recording of pre-existing and pregnancy related maternal morbidities
- Include returns following attended home deliveries

Capture new information on provision of maternal critical care through development of the SMR02 record and/or extension of Scotland's national critical care audit.

Consider options for capturing more 'real time' data on provision of community-based maternity care, for example booking and other antenatal contacts.

Harness the opportunities afforded by all neonatal units across Scotland moving to using the same clinical information system and Scotland joining the National Neonatal Audit Programme to improve the range and quality of national information available on babies receiving neonatal care.

Capture new information on the results of the universally offered newborn physical examination.

Implement a robust, sustainable national congenital anomaly register to allow monitoring of population risk, quality assurance of antenatal screening, and service planning for affected children.

Consolidate Scotland's ability to accurately link records relating to mothers and their children to enable long term monitoring of outcomes across generations. Currently this is constrained as National Records for Scotland is prohibited from sharing specific variables recorded within birth records (in particular maternal date of birth) that are an important prerequisite for efficient and accurate data linkage.



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