1.0 Introduction

1.1 In October 2010, the Primary Care Trusts (PCTs) NHS Bassetlaw and NHS Doncaster, commissioned an external review of maternity and gynaecology services provided by Doncaster & Bassetlaw Hospitals NHS Foundation Trust. This was undertaken by Mr Martin De Bono, Consultant Obstetrician, Calderdale and Huddersfield NHS Foundation Trust. A report on paediatric services was commissioned at the same time from Dr Adrian Brooke.

1.2 Mr De Bono concluded that while current services for women and their babies are safe, there are a number of factors that, if left unaddressed, will compromise the Trust’s ability to sustain safe services in the future.

1.3 Mr De Bono’s report was received by this Trust and shared widely.

1.3.1 An internal group was established, chaired by Mr Mohamed Alloub, Clinical Director, Women's and Maternity Services, and Consultant Obstetrician and Gynaecologist.

1.3.2 The group was tasked with assessing the contents and producing an evaluation report. This report sets out this assessment and has the support of the group.

1.3.3 This report should be read in conjunction with the paediatric report, which was produced by a second internal group.

1.3.4 A further piece of work has now begun to assess the financial and estates issues from all options in both reports.

1.4 Mr De Bono’s report is attached at Appendix 1.

2.0 Background

Over recent years, there have been a number of external and internal drivers that impact on the way in which we deliver maternity services.

2.1 “Safer Childbirth”\(^1\) states that “raising the level of consultant presence on the labour ward is a significant measure to improve safety and patient care, and reduces the need for interventions required to deliver babies”.

The document sets out standards of maternity care and clearly stipulates that the labour ward consultant presence required for units with more than 2,500 births per year should be 60 hours per week by 2009 and recommends this should rise to 98 hours per week by 2014, acknowledging the operational difficulties this might impose.

\(^1\) “Safer childbirth - minimum standards for the organisation and delivery of care in labour”, Royal College of Obstetricians, Royal College of Midwives, Royal College of Anaesthetists, Royal College of Paediatrics, Royal Colleges (Oct 2007)
The standard for units under 2,500 births, such as Bassetlaw Hospital (BH), is not set and it recommends this should be negotiated locally with commissioners.

2.2 The Clinical Negligence Scheme for Trusts\(^2\) outlined further key standards that maternity services must achieve to maintain staff skills and competency to practice both during normal births and emergency situations. Exposure to sufficient volumes, range, and levels of case complexity to maintain and develop clinical skills across the workforce is essential to achieving these.

2.3 The European Working Time Directive (EWTD)\(^3\) has fundamentally changed the way in which junior doctors are trained and work. This challenges the provision of on-call services, particularly at night, for both obstetric and neonatal junior doctor rotas.

There is also a downward national trend in the number of training posts in obstetrics and there is a need to provide exposure for trainees to sufficient volumes of patients and level of complexity to maintain and develop their clinical skills in order to fulfil the Deanery requirements.

2.4 The interdependencies between maternity and paediatrics cannot be overemphasised, with obstetric units dependent on having a neonatal service to support it 24/7 in order to function safely.

Paediatrics is experiencing similar workforce pressures to obstetrics with a reduction in training numbers and an increasing sub-specialisation in neonatology. This has a direct impact on its ability to provide the correct level of medical support at middle grade level to sustain out-of-hours cover at small units such as BH. In addition, Dr Brooke advises in his report “the low volumes of children admitted to the inpatient unit at BH introduce a risk that the paediatricians’ skills will, over time, become eroded especially in relation to dealing with acutely-ill children”. Combined with the difficulties that this Trust is currently experiencing in attracting middle grades to substantive posts, Dr Brooke challenges the future sustainability of paediatrics at BH and therefore, the service must be considered in conjunction with the review of obstetric services.

2.5 A number of supporting services, such as anaesthetics, play a key role in the safe delivery of maternity services. Obstetric anaesthesia is now considered a sub-specialty in its own right and generalists are becoming uncommon.

At BH, anaesthetic cover out-of-hours supports a range of specialties across the whole hospital site, including obstetrics. In addition, at DRI elective caesarean sections are sometimes delayed due to other clinical priorities competing for theatre space and staff time during emergency activity. A recent analysis indicates this occurred in 32% of cases. The epidural service may also be affected.

2.6 The needs of the local population are changing. Many women now want a greater choice in how and where their babies will be born, some preferring to have midwifery-led services, plus there are a growing number of vulnerable women who require flexible models of maternity care.

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\(^2\) NHS Litigation Authority (CNST)
\(^3\) The Working Time (amendment) Regulation, EWTD (2003)
2.7 While the Trust merged managerially into one organisation in 2001, there has been little integration across the obstetric medical teams at BH and DRI, apart from gynaecological oncology. Whilst it is the intention of the new clinical management structure to address this, the service is currently run as two separate medical teams with their own rotas and cover arrangements.

This has led to increasing difficulty in maintaining two obstetric medical rotas to support the units at Doncaster Royal Infirmary (DRI) and BH. DRI is also subject to the “Safer Childbirth” standards for increased labour ward consultant presence.

3.0 Mr De Bono’s report

3.1 Mr De Bono set out 4 options for change. These were:

- **Option 1** consultant-led obstetric unit at both DRI and BH
- **Option 2** consultant-led unit and a midwifery-led unit at DRI only
- **Option 3** a single consultant-led unit at DRI and a midwifery-led unit at BH
- **Option 4** a single consultant-led unit at DRI and a midwifery-led unit at both DRI and BH

3.2 Mr De Bono’s report outlined the key factors, which, in the author’s opinion, posed the greatest threat to sustaining the current service model into the future.

These were stated as:

- “the lack of integration of the consultant workforce across the two sites, leading to problems providing the required prospective labour ward presence and appropriate level of supervision of junior doctors”
- “the Deanery’s concerns about the low volumes of patients seen at BH, which impacts on the training experience, and the current arrangement whereby out-of-hours cover is provided by a joint junior doctor rota between obstetrics and paediatrics”
- “the age profile of the consultant workforce at BH is high and may lead to difficulties in succession planning if the current lack of workforce integration continues”.

4.0 Approach taken

4.1 A time-limited task group was established, chaired by the Clinical Director for Women’s and Maternity Clinical Services Unit (CSU) and supported by a number of consultant obstetricians, paediatricians, senior midwives, and the Transforming and Integrating Clinical Service (TICs) team. The group was tasked with:

- assessing the benefits/risks of each option in respect of clinical sustainability, workforce, finance, estate
- outlining the dependencies in respect of other clinical services and workforce
- identifying issues relating to long term sustainability
• assessing demand/activity changes and demonstrate the impact on workforce, finance and estate.

For terms of reference see Appendix 2.

4.2 The group has met weekly throughout February. While the task group focussed on maternity services, it was acknowledged that ‘read across’ with the paediatric task group was necessary due to clinical interdependencies. The outcomes of the paediatric group will have a significant impact on the ability to sustain obstetric services at BH if 24/7 paediatric support is withdrawn.

4.3 The internal group agreed to add a fifth option: “consultant-led obstetric unit at both DRI and BH and a midwifery-led unit (MLU) at DRI”.

4.4 Assessing the benefits/risks of each option

4.4.1 A benefits/risks assessment was undertaken for each option and a summary of each can be found below. The full report is in Appendix 3.

- **Option 1** This is the current position and does not address the current significant problems in complying with the RCOG (The Royal College of Obstetricians and Gynaecologists) and CNST standards for labour ward presence or resolve the issues with junior doctor training

- **Option 2** transfers all intrapartum care to DRI and removes choice for Bassetlaw women. It would not be acceptable to the Bassetlaw commissioners, who gave a commitment that “babies will continue to be born in Bassetlaw”

- **Option 3** transfers all obstetric-led care to DRI but proposes the development of a midwifery-led unit (MLU) at Bassetlaw. This enables the RCOG standards for labour ward presence to be met at DRI and potentially provides an improved training experience for junior doctors. However, it creates further capacity issues for the delivery suite at DRI and removes some choice for Bassetlaw women. It also introduces significant issues of transferring women safely while in labour from BH to DRI with a likely transfer time of an hour. The number of women, who meet the criteria for an MLU, is potentially small and thus raises issues of the unit’s viability. This is analysed later in this report. This option removed the need for a SCBU (Special Care Baby Unit) at Bassetlaw

- **Option 4** carries the same transfer risks and reduction in choice for Bassetlaw women as option 3 but offers further choice to Doncaster women with the development of an MLU on the DRI site as well as at BH. This would alleviate capacity issues on the delivery suite. This was the model recommended by Mr De Bono

- **Option 5** proposes the same model as the current service plus the development of an MLU at DRI to provide choice to Doncaster women and those who may wish to travel from Bassetlaw, and relieves the capacity issues on the delivery suite. It does not, however, address any of the medical workforce issues and compliance with safety standards.
4.5 Mr De Bono offered his preferred solution as “centralise all obstetric-led care at DRI and develop midwifery-led units (MLUs) at both BH and DRI”. His rationale was:

- “co-location of consultant cover to a single site will allow a significant increase in dedicated time to achieve the “safer standards” labour ward expected presence, which is overdue at DRI”
- “elective and emergency case lists can be operated upon separately, reducing the likelihood of delays or cancellations. This is predicated upon the setting up of elective caesarean section lists at DRI; this is already in place at BH”
- “MLUs at Doncaster and Bassetlaw could attract women from other local communities and offer an additional choice to Doncaster women”
- “an MLU at Doncaster would alleviate the significant pressures on the labour ward and offset the increased activity, which may transfer from Bassetlaw”
- “further development of paediatric/neonatal expertise would be possible if neonatal services were centralised at Doncaster”.

Mr De Bono’s report was received by the PCTs and presented to clinicians and key stakeholders in January 2011.

4.6 The internal group did not agree with issues in Mr De Bono’s report about the quality of training and supervision of junior staff as the Trust has not been formally notified by the Deanery that it has concerns regarding this. However, the Trust is aware that BH does not provide the volumes of patients which causes issues for junior staff. In addition, there is currently no shortage of obstetricians, therefore Mr De Bono’s comments regarding the age profile of the team are not felt to be relevant.

4.7 Workforce modelling

4.7.1 Medical workforce

A proposed sustainable medical workforce model has been developed for each option (see Appendix 4) based on the *formula and standards for maternity care* and *medical workforce solutions*, which addresses the need for 60hr labour ward consultant presence now and 98hr in the future. Investment in the consultant numbers is required, however more imaginative use of the middle tier can deliver a more flexible workforce which provides enhanced training opportunities for juniors.

4.7.2 Midwifery workforce

A potential sustainable midwifery workforce model has been developed for each option (see Appendix 5) based on the RCM guidelines and the birth rate plus methodology. This will require further discussion and some challenge to ensure the workforce is used flexibly whilst meeting required standards and ratios of midwives to women. There are minimum staffing levels required for MLUs to function safely.

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4 "Formula and examples of standards for maternity care, report of a working party", Royal College of Obstetrics & Gynaecology (June 2008)
5 Medical Workforce Solutions, RCOG Good Practice (vol 10)
6 Royal College of Midwives guidelines (2011) (RCM)
However, integration of the team would enable the workforce to be used flexibly. The newly-published “staffing in maternity units” provides further reinforcement on the ratios of midwives to mothers required and also on maximising the midwifery clinical contribution for low risk cases.

To support centralised obstetric-led care at DRI, the midwifery workforce would need to be used flexibly across both sites to accommodate the Bassetlaw high-risk women who would potentially book at DRI. An MLU at DRI (option 5) may require additional numbers of midwives as part of an integrated workforce providing support to both units as activity levels demanded.

4.8 Capacity/Demand modelling

An initial activity/demand modelling exercise for each option was undertaken and the financial impact identified (see Appendix 6). A number of assumptions were made and are outlined below. However, these will be tested in the work underway to assess the financial and estates issues of all the options arising from both the paediatric and obstetric reports:

- analysis of women who booked at BH over the past 5 years, showed that only 45% were registered with a Bassetlaw GP; the remainder were resident in the surrounding area. If the obstetric unit at BH were closed, then given the relative close proximity of other units in Mansfield and Rotherham etc, it is anticipated that there could be a fall in demand of up to 55% as these women may choose to book elsewhere, rather than travel to DRI
- the Bassetlaw home delivery rate has remained constant over the past 5 years at around 2% of all births and was used as a guide to indicate numbers of women who may choose to use a MLU
- in addition, by using evidence from elsewhere, further analysis was undertaken of women deemed ‘low-risk’ who may choose a delivery within an MLU but need to transfer to an obstetric unit during labour. While data suggests that 350 women per year are likely to attend the MLU at BH, up to 28% may need to be transferred during labour to DRI. It is difficult to quantify the exact number, as there are a significant number of variables in the evidence. The rationale for this conclusion is explored later in this paper
- birth rates provided by the public health departments from both PCTs show Doncaster rates have been increasing steadily since 2000 and track the national trend. Bassetlaw rates dipped in 2009/10 but have recovered and are also following the national trend (see Appendix 7). These figures will be factored into the detailed financial analysis currently being undertaken.

4.9 Impact on other services

The clinical interdependencies are crucial to sustaining obstetric services, particularly the relationship with paediatrics and anaesthetics. These specialties are also vulnerable due to the impact of EWTD and changes to medical training, which compromise their ability to support current maternity service models at both BH and DRI in the medium term.

7 “Staffing in Maternity Units”, Kings Fund (Feb 2011)
4.9.1 An external review of paediatric services was undertaken alongside the obstetric review and it is accepted by commissioners that the current paediatric inpatient service model at BH is “safe but not sustainable in their current form into the future” (Dr A Brooke Dec 2010), due to:

- medical workforce issues similar to those in obstetrics and the changing needs of children and families, who require a community-focused service with less need for acute inpatient stays
- “low volumes of children going through the inpatient services resulting, over time, in staff becoming deskillled” (Dr Brooke)
- “the vulnerability of the junior doctor posts in being deemed unsuitable for training due to low volumes of patients” (Dr Brooke), thus making 24/7 cover for both obstetric and paediatric services unsustainable longer term
- a national shortage of paediatric training posts means there are insufficient middle-grade doctors to sustain a SCBU out-of-hours at BH.

4.9.2 All these factors will impact on obstetric services and could compromise the ability to deliver a number of the options, particularly 1 & 5, which require neonatal support for each consultant-led unit.

However, innovative options may yet be proposed by the paediatric task group, which would provide the necessary support to sustain consultant-led obstetric services on both sites. These are yet to be fully explored.

4.9.3 Anaesthetic services are also necessary and there is currently a potential risk to the out-of-hours service at BH. Anaesthetists may not be able to provide appropriate obstetric support where only two anaesthetists are available to cover the whole hospital.

Centralisation of obstetric services would place further demand on the anaesthetic department at DRI to provide a full range of support to sustain the increased flow of patients from Bassetlaw. A review of the anaesthetic services in relation to obstetrics and paediatrics, would need to be undertaken.

4.10 Safeguarding

Safeguarding issues have been considered as part of the options appraisal, taking advice from the Trust’s lead nurse. The Trust have robust systems in place for working across a number of local authorities and commissioning organisations. However, this will need reviewing to ensure they are still effective if patient pathways changed as a result of the review of obstetric services.

4.11 Transport

Centralisation of obstetric care at DRI will increase the numbers of 'blue light' ambulance services from BH, placing additional demand on current inter-hospital transfers. There will also be a rise in demand from women who choose to go elsewhere rather than book with this Trust. Ambulance service expectations need exploring regarding their protocols for taking emergency cases to the nearest obstetric unit, ie not necessarily to the one booked into when cross-border issues arise.
There are potential issues for sick neonates who require stabilisation before they can be transferred to DRI. The period of time required could be detrimental to the clinical outcomes for the baby.

There are significant issues regarding the public’s perception of stand-alone MLUs and the implied clinical risks associated with transferring women in labour over distances. These issues are explored in more detail below.

5.0 Learning from others’ experience

5.1 The Trust’s position is not unique and many commissioners and providers are facing similar challenges, working together to develop sustainable alternative models of maternity care.

5.2 Midwifery-led units

5.2.1 Mr De Bono’s report cites a number of MLUs nationally and provides some evidence that, if supported by the local community and appropriately resourced, an MLU can offer a viable alternative to obstetric-led services where clinically appropriate.

5.2.3 An analysis of the evidence for the safety of MLU’s is in Appendix 8. However, a critical factor in the long-term sustainability of an MLU as a credible option is actual numbers of women who both fulfil the criteria, ie are deemed ‘low risk’ and are willing to use them.

5.2.4 Evidence drawn from a number of random controlled trials\(^8\) suggests between 16%-22% of women admitted to MLUs are transferred during labour. A further audit of community maternity units in Scotland\(^9\) suggests the average rate was 25%. This is supported by a random survey of standalone MLUs,\(^10\) which showed a wide variation from 8% to 30% depending on distance travelled to an obstetric unit. The task group therefore concluded a conservative figure of 28% based on this evidence, plus advice from Mr De Bono.

The analysis undertaken of the Bassetlaw population, current patient flows, and evidence from other units, suggest that a Bassetlaw MLU would possibly only attract at most 350 women per year. If 28% were then transferred to DRI in labour, this would result in only 279 deliveries in the unit per year. As the unit became established and the midwifery team more confident, it is estimated that the transfer rate would reduce to around 21%, however the long-term viability of the unit remains an issue.

5.2.5 The distance between DRI and BH is 19 miles and the transfer time is likely to be around 60 minutes (the external report quotes travel time, which is only the ambulance journey time, not the time it takes from the MLU to the obstetric unit). The commissioners have already been challenged by the public and the Bassetlaw Maternity Services Liaison Committee (MSLC) on the perceived safety issues associated with transferring women in labour.

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\(^9\) “Audit of care provided and outcomes achieved by Community Maternity Units in Scotland 2005”, Scottish Programme for Clinical Effectiveness in Public Health (Feb 2007)

5.2.6 An article published in the Health Service Journal in March 2011,\textsuperscript{11} states that standalone MLUs are under threat from high costs and falling numbers of deliveries due to being underused and unsustainable. A number of units have been closed for long periods during the year due to staffing problems and, while many commissioners recognised the increased choice it gave to women, they expressed concern that smaller units do not offer value for money.

An article also appearing the same week in the national midwifery journal MIDIRS,\textsuperscript{12} comments on the HSJ piece and postulates a climate of risk aversion in society as also being a factor on the underutilisation of MLUs.

An article in the British Medical Journal\textsuperscript{13} provides opposing views from a professor of midwifery and a professor of obstetrics & gynaecology as to the safety of midwifery-led maternity units. Both agree that there is a lack of real evidence on the safety or otherwise of MLUs.

5.2.7 This is supported by a review undertaken by NICE,\textsuperscript{14} which acknowledges the limitations of the evidence base “the evidence concerning outcomes is not as good as it should be for such an important health issue. There is a lack of reliable data concerning intra partum mortality in all places of birth”.

5.3 Examples of service reconfigurations

5.3.1 There are marked similarities between the challenges faced by the Trust’s obstetric and paediatric services and those faced by the Oxford Radcliffe Hospitals NHS Trust (ORH) and Horton General Hospital in Banbury. Both hospitals are 23 miles apart so also had significant patient transport issues.

The ORH NHS Trust proposed centralisation of obstetric-led services at Oxford and development of a MLU at Horton General Hospital in Banbury, coupled with centralising inpatient paediatric services and removing the SCBU. In 2008, the Secretary of State for Health appointed an Independent Reconfiguration Panel (IRP) for Oxford. It expressed concern that “changes to paediatric, maternity, special care and gynaecology services at Horton Hospital are being driven by future medical staffing constraints, not by providing a better service for local people”. It concluded that “it (the IRP) did not consider that they (the Trust) would provide an accessible or improved service to the people of north Oxfordshire and surrounding areas”.

As a result, a decision was made to sustain consultant-led maternity and paediatric services in Banbury and significant joint investment has been agreed between the PCT and the Trust to facilitate this.

The new paediatric and anaesthetic services will be fully implemented in Bawtry in April 2011, however, some recruitment issues remain in obstetric services.

\textsuperscript{11} “Midwife led units threatened by falling birth rates”, Health Service Journal (11 March 2011)
\textsuperscript{12} Midwives Information and Resource Service (MIDIRS)
\textsuperscript{13} “Do we have enough evidence to judge midwife led units safe”, British Medical Journal (Sept 2007 vol 335)
\textsuperscript{14} National Institute for Clinical Evidence (NICE)
5.3.2 In 2006, the North West SHA embarked on an ambitious plan to improve services for children, young people, and families across Greater Manchester called “making it better”\textsuperscript{15}.

The programme further developed the work of four managed clinical networks established in 2002 and was prompted by an awareness that EWTD regulations and shortages of skilled consultants, midwives, and paediatric practitioners would have a significant impact on their ability to deliver safe, sustainable services in the future. An analysis of obstetric and paediatric units highlighted low occupancy rates and low skills in some of those units and teams.

They achieved critical mass by concentrating activity onto fewer sites and increased staffing levels and expertise. Where the decision was made to develop MLUs, they were co-located with obstetric units ideally with a minimum of 3000 births per year. However, it was acknowledged there was no evidence base to identify the optimum maternity unit size.

A number of services have now been redesigned with maternity services at Trafford General Hospital transferred to Wythenshaw in January 2011, Bury maternity and inpatient children’s services will transfer to Royal Bolton and Manchester General Hospitals in April 2012.

A review of implementation plans to assess that new models were ‘fit for purpose’ was undertaken in Aug 2010 and reported that the clinical models are still robust and compliant with national policy and best practice.

6.0 Conclusion

6.1 At present, there is insufficient robust evidence to support the development of a standalone MLU at BH. “The evidence concerning outcomes is not as good as it should be for such an important health issue” (NICE). However, an MLU at DRI would offer increased choice for Doncaster women and address capacity issues on the delivery suite.

6.2 Local services and offering choice are important factors in considering the provision of maternity services. This has been demonstrated clearly through public, media, and elected member feedback.

6.3 The initial modelling has raised a number of questions about affordability. Further work to consider this is now progressing to assess the financial and estates issues of all the options from both reports.

6.4 Whichever option is decided upon, changes to the existing medical workforce are required, including the integration of teams across both sites and further strengthening of relationships with the Deanery to sustain and increase the number of training posts.

6.5 The interdependencies between paediatrics and obstetric is acknowledged, and any conclusions drawn by both task groups need to be tested together.

\textsuperscript{15} “Making it better”, satisfying the clinical evidence test, North West SHA (August 2010 vol 1)
6.6 The Trust may increase the range of gynaecology services offered locally to women as the consultant numbers increase, giving the team an opportunity to develop sub-specialties, and also attract more business to the Trust.

6.7 It became clear that analysing the capacity demand and activity of paediatrics in isolation of maternity was not helpful. This report therefore has not concluded this work. A further report is now being produced to draw together the conclusions of both paediatric and obstetric services.

7.0 Next steps

7.1 The purpose of this review is to analyse the risks and benefits, advising the Trust on the impact of each service model. The task group was not charged with recommending a preferred option.

7.2 This report will be considered internally and presented to Trust’s Management Board before being shared with NHS Bassetlaw and NHS Doncaster.

7.3 This report will be published.

Mr Mohamed Alloub
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April 2011