

# **Options Appraisal: Reconfiguration of Obstetric and Maternity Services in Cumbria**

On 18-20 November 2014



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# 1. REASON FOR REQUEST

This review has been commissioned by NHS Cumbria Clinical Commissioning Group and NHS Lancashire North Clinical Commissioning Group in order to provide an options appraisal for the reconfiguration of Obstetric and Maternity services based on information provided by the CCGs, Hospital Trusts and on interviews undertaken during the visit. It is important to appreciate that some of the work of this review was performed at a similar time to the Kirkup Independent investigation into events that occurred at University Hospitals of Morecambe Bay NHS Foundation Trust involving maternity services between 2004 and 2013. However, the commissioning of this work and the terms of reference were different. No members of the assessment team were privy to the findings or conclusions of the Kirkup report which was published on 3 March 2015.

# 2. NAMES OF REVIEW TEAM MEMBERS

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# 3. TERMS OF REFERENCE

The aim of the independent review is:

- To identify clinically sustainable and safe service options for the delivery of obstetrics and gynaecology services for the women of Cumbria.
- To define the clinical interdependencies particularly in relation to obstetrics and midwifery, anaesthetic and high dependency care, surgical support, imaging and neonatal and paediatric services required to provide a network of women's care.
- To present recommendations that over time will improve the provision of sustainable services that would be acceptable to the local population and for women in particular.
- To present an options appraisal (including risks) in attracting and sustaining a workforce which is sensitive to the particular social and geographical challenges presented in this remote area of England.
- To make recommendations based on the findings of the review.

# 4. BACKGROUND INFORMATION

## Population Health, Economics and Inequalities<sup>1</sup>

4.1 Cumbria is a county containing half a million people, with 5 000 deliveries a year and a geographical area of 2 600 square miles. It is unusual in its size and rurality and for these reasons provides many challenges for health care delivery. The health of people in Cumbria is varied compared with the England average. Overall, deprivation is lower than average, however there are some high levels of rural and urban deprivation, with areas of the county falling into the 10% most deprived nationally. Deprivation is particularly severe in the urban areas of Barrow and West Cumbria. 15.4% of children in the county live in poverty, which is below the national average of 21.3%. However, in one ward in Copeland the percentage of children living in poverty rises to 49.2%. Although deprivation is most prevalent in Cumbria's urban areas there are also hidden pockets of deprivation in some of the county's most rural communities.

4.2 Cumbria's overall performance in a range of health and wellbeing indicators disguises significantinequalities in health outcomes. There is a 19.5 year gap between the wards with the highest and lowestlife expectancies in the county, with life expectancy in some areas 8.4 years below the national average.Health outcomes in Cumbria are poorest in Copeland, Carlisle and Barrow whereas Eden and South Lakeshave high levels of health and wellbeing. With the exception of Eden, all districts have problems around

<sup>&</sup>lt;sup>1</sup> http://www.cumbriaobservatory.org.uk/elibrary/Content/Internet/536/675/4356/41996121025.pdf

alcohol misuse. Poor mental health is also an issue for the county with incidences of neuroses, self-harm and suicide higher than those nationally.

4.3 Within Cumbria the majority of the population live around the 'edge' of the county and, despite being a largely rural county, many live in sizable communities, geographically isolated from each other.

4.4 Barrow has a population of around 70 000 and Whitehaven and Workington have around 25 000 each. However, Barrow has a more diffuse rural community. Barrow has a population of around 70 000 and Whitehaven and Workington around 25 000 each; although this area has a more diffuse rural community. Carlisle has a population of around 75 000. Carlisle, Whitehaven and Barrow are isolated from any major medical school or tertiary medical centre, although Carlisle has good transport links - north to Scotland and, south to Lancaster via the M6.To the east of Cumbria are Newcastle and Sunderland. To the north, Scotland provides a totally different organisation of health care. To the south of the county, Lancaster, which is in North Lancashire has a population of around 114 000 and is an important hub for South Cumbria's medical provision.<sup>1</sup> Lancaster has easier access to tertiary centres in Preston and Manchester through the M6 corridor and has a new medical school, based at the University of Lancaster.

4.5 The major occupations and employers in the county of Cumbria include tourism, the NHS, agriculture, Sellafield Ltd (nuclear reprocessing) at Whitehaven and BAE systems (British multinational defence, security, shipbuilding and aerospace company) at Barrow. Unemployment in Cumbria is higher than the UK average but is falling at a faster rate. There are potential expansion employment opportunities within BAE and Sellafield, but the exact timing is unclear. Local industry needs high quality medical provision to attract the highest calibre recruits.

4.6 Within the county of Cumbria the road and transport links are poor and transfer between communities is an ongoing challenge. Transport links are only very rapid down the north-south corridor that is the M6. Despite the geographical magnificence of the county, Cumbria feels isolated from large conurbations and this is said to be one of the major attractions for those who choose to live there.



4.7 Cumbria is primarily served by the following NHS Trusts:

**Cumbria Partnership NHS Foundation Trust** provides community services (e.g. district nursing), some specialist physical health services (e.g. neurology and diabetes) and community and inpatient mental health and learning disability services. The Trust works across Cumbria, and also provides a limited number of specific services to the north Lancashire area.

North Cumbria University Hospitals NHS Trust provides a range of secondary care services, and some tertiary services, from Cumberland Infirmary in Carlisle (CIC) and West Cumberland General Hospital (WCH) in Whitehaven. The Trust primarily serves the Allerdale, Copeland, Carlisle and Eden localities of Cumbria, as well as providing a small volume of patient activity to Scottish residents. Northumbria Healthcare NHS Foundation Trust is in the process of acquiring North Cumbria University Hospitals NHS Trust and this is expected to take place once this Trust is taken out of special measures.

**University Hospitals of Morecambe Bay NHS Foundation Trust** provides a range of secondary care services, and some tertiary services, from Furness General Hospital (FGH) in Barrow and Royal Lancaster Infirmary (RLI) in Lancaster and a more limited range of services from Westmorland General Hospital in Kendal. The Trust primarily serves the Furness and South Lakes localities of Cumbria, as well as the population of NHS Lancashire North CCG.

**North West Ambulance Service** provides patient transport and emergency ambulances to the population of Cumbria, as well as the wider geographical area of Lancashire, Cheshire, Merseyside and Greater Manchester.

4.8 **Commissioning** for the people of Cumbria is carried out by **Cumbria CCG**, which is the main commissioner for CIC and WCH and for FGH and RLI for patients registered with a Cumbria or Bentham GP.

4.9 **The Northern Deanery**, based in Newcastle places O&G, paediatric, anaesthetic and surgical trainees in CIC. **The North West Deanery** in Manchester includes FGH and RLI within its portfolio.

4.10 South Cumbria services are linked through the **Greater Manchester, Lancashire and South Cumbria Strategic Clinical Network** and Clinical Senates. In North Cumbria the **Maternity and Child Health Network** is one of the main networks within the Northern England Strategic Clinical Network based in Newcastle and is made up of two key strands-Maternity and Child Health-governed by separate clinical advisory groups. Similarly, neonatal care and retrieval services are split across the county, the **North-West Operational**  Delivery Network has three areas, Cheshire & Mersey, Lancashire & South Cumbria and Greater Manchester whilst the Northern Neonatal Network has one area that covers all of North Cumbria, Newcastle, and Teesside. Additionally there are networks for adult intensive care, the North East Critical Care Network for WCH and CIC and the North West Critical Care Network for FGH and RLI.

4.11 Patients from Cumbria access a range of NHS services outside the county, particularly for elective and complex procedures, including some interventions which are not otherwise available in Cumbria. HealthWatch Cumbria works with Cumbria Local Authority to harness patient/user input and to manage the communications, consultations and evidence around health service design, delivery and improvement. This wide range of organisations and networks, all with an interest in service provision at the four sites under review understandably makes whole-county strategic planning and service design extremely complex.



# 5. MATERNITY DATA FOR CUMBRIA

5.1 Of the total population approximately 84 000 are women aged between 15 and 44, with a higher proportion in this age profile living in Carlisle and Barrow than elsewhere. In 2012 there were 4 966 births in the county. The birthrate in the county appears static although the total fertility rate is slightly above the national average (Cumbria 2.03 versus England and Wales 2.00).

5.2 Most births are locally managed in the four Consultant Led Units (CLU), two Midwifery Led Units (MLUs) or at home, although 1.5% need specialist tertiary services outside Cumbria due to complications of mother or baby requiring in-utero transfer.

#### **Maternity outcomes**

5.3 The birthrate to teenage mothers in 2010 was 8% which is higher than that in England and Wales (6%). Overall, the number of births to women over 40 has decreased. The number of babies born with birth weight less than 2500 grams in 2010 was 6.8% in Cumbria and 7.3% in England and Wales. The perinatal mortality rate for Cumbria from 2008 – 10 was 5.6 per 1 000 total births compared to 7.5 per 1 000 for England and Wales. Perinatal mortality fluctuations will be very sensitive to the low number of births and therefore may not be a very precise indicator of quality of care and clustering of adverse outcomes can skew interpretation. Child mortality (death of children aged 17 and under) however, shows the reverse at 18.7 per 1 000 in Cumbria and 13.7 per 1 000 in England and Wales in 2013. This reflects the public health challenges of social deprivation, smoking, obesity and unemployment which are significant for the women of Cumbria and their children.

5.4 The normal birthrate in Cumbria for 2012 was approximately 60%, the caesarean section rate for the county was 29.8%, higher than national average of 24.9%. In 2012, there were 69 home births, accounting for 1.4% of all births in the region.

# **5.1. MATERNITY DATA FOR NORTH LANCASHIRE**

5.5 The total population covered by Lancashire North CCG is about 160 000 of whom 31 478 are women of childbearing age. This population lives in and around Lancaster, Morecambe, Carnforth and Garstang and other surrounding villages. Like Cumbria, deprivation is a very significant feature for some of the population in North Lancashire. Within Lancashire North CCG, the proportion of the population living in the most disadvantaged areas (18%) is slightly less than the national average. However, parts of Morecambe,

Heysham and central Lancaster are classified as being amongst the fifth most disadvantaged areas in England and over 29 000 residents within NHS Lancashire North CCG live in these areas.

5.6 The birth rate is 11.3 per 1 000 (2012), a fall of 0.1% from the previous year.

#### **Maternity outcomes**

5.7 A small number of deliveries (6.7%) were to women under 18 years of age and 10.8% to women over 40. Five percent of all live and stillborn infants weighed less than 2 500 grams. The perinatal mortality rate was slightly higher than for Cumbria at 8.7 per 1 000 total births.

5.8 The normal delivery rate was around 61%, the caesarean section rate about 25% and the instrumental delivery rate 13%. Twenty-three home deliveries were undertaken during 2012 – 13.

The quality indicators collected by Hospital Episode Statistics and risk adjusted by the RCOG are included later in this report. (Table 11)

# 6. MATERNITY SERVICES - STANDARDS AND CO-DEPENDENCIES

# 6.1 Configuration of maternity services within the UK

6.1.1 Like other health services, maternity service design is driven by a number of factors. These factors include safety, cost, accessibility, and ability to attract and retain staff. More, importantly services must consider patient choice, convenience and proximity for women and families.

6.1.2 Consultant Led Maternity Units (CLUs) currently account for 87% of births in the UK, but require significant colocation of other specialisms including midwifery, neonatology, anaesthesia, surgery, imaging and mental health services to manage all aspects of childbirth including severe complications. Unlike some of our continental neighbours CLUs in England and Wales are often large, sometimes due to amalgamation of smaller units serving large conurbations. Currently only 13 units in the UK deliver fewer than 1500 babies per year (Table A).

**Table A:** Consultants and recognised trainees workforce in CLUs in the UK, delivering less than 1 500 babiesper year (2013 RCOG Census Data)<sup>2</sup>

Trust	Hospital	Total Deliveries in 2013	Number consultants in post	Number consultants involved in obstetrics on-call	Is there a Junior Grade rota?	Is there a Middle Grade rota?	Is there a Senior Middle Grade rota?	Hours per week cons. are physically present on the LW
Hywel Dda Health Board	Bronglais General Hospital	600	3	3	No	Yes	No	12
NHS Grampian	Dr Gray's Hospital	1027	4	4	Yes	No	No	40
NHS Borders	Borders General Hospital	1107	6	6	Yes	Yes	No	28
Hywel Dda Health Board	Withybush Hospital	1148	5	5	Yes	Yes	No	40
South Tees Hospitals NHS Foundation Trust	Friarage Hospital	1156	4	4	Yes	Yes	No	40
NHS Dumfries & Galloway	Dumfries and Galloway Royal Infirmary	1233	5	5	Yes	Yes	Yes	10
Western Health and Social Care Trust	South West Acute Hospital	1240	4	4	Yes	Yes	No	40
NHS Isle of Wight	St Mary's Hospital	1295	4	4	Yes	Yes	No	40
Uni. Hospitals of Morecambe Bay NHS Foundation Trust	Furness General Hospital	1300	5	5	Yes	Yes	No	52
North Cumbria University Hospitals NHS Trust	West Cumberland Hospital	1313	5	5	Yes	Yes	No	40
Northern Health and Social Care Trust	Causeway Hospital	1440	4	4	Yes	Yes	No	22
South Tyneside NHS Foundation Trust	South Tyneside District Hospital	1479	5	5	Yes	Yes	No	40
Yeovil District Hospital NHS Foundation Trust	Yeovil District Hospital	1500	5	5	Yes	Yes	No	40

6.1.3 Midwifery Led Units (MLUs) provide an alternative model of childbirth for women deemed to have low-risk pregnancies. MLUs are run by midwives without the medical facilities of a hospital and can be next to a main hospital CLU (alongside or co-located) with a separate labour ward. These units are able to provide seamless transfer of mother and baby should complications such as analgesic need or delayed progression of labour occur. Freestanding MLUs are those that are compete separate from hospital. Because most women can give birth without needing medical interventions, with appropriate risk assessment by midwives during pregnancy and early labour these units can be a good choice as an alternative to hospital birth.

<sup>&</sup>lt;sup>2</sup> <u>RCOG Census Report 2013, Published Feb 2015</u>

6.1.4 Home births are attended by at least one and usually two midwives and currently make up about 2.4% of UK births. The average home birth rate in Cumbria was 1% in 2012, ranging from 0.5% in Carlisle to 1.7% in South Lakeland. This rate is significantly lower than the 2.1% seen in 2006 and 2008 and greater than the decline seen in other areas in the North of England.<sup>3</sup>

6.1.5 The professional organisations responsible for promoting standards and leadership in maternity and neonatal care have developed evidence-based standards for staffing and safety for CLUs, MLUs and neonatal services to improve care and outcomes. Where these standards have not been met, particularly relating to the provision of round-the-clock medical cover, services have considered relocation or reconfiguration in the anticipation that outcomes will improve. This has provoked concern and anxiety amongst the public who may not be fully informed or consulted on the rationale, standards or statistics supporting service redesign.

6.1.6 Part of this drive to reconfigure CLUs has been driven by efficiency and safety factors in an attempt to create a critical level of activity, focused around a workforce with an appropriate skill mix. Patient safety is improved by rehearsing responses to unforeseen complications (multidisciplinary skills and drills training) and encountering them frequently. There is an association between frequent exposure to complex cases and more favourable outcomes for patients across all aspects of medical care. It is important that clinical staff are regularly exposed to these complex cases in order to maintain their skills and competencies. This is demonstrable in many aspects of current clinical practice including stroke medicine, oncology and very specialised surgery (e.g. paediatric cardiac surgery).<sup>4</sup>

6.1.7 Women should be able to choose a range of pathways for maternity care but currently only 11% of deliveries occur in MLUs despite evidence that for many women this is a safe option for delivery.

6.1.8 Free-standing midwifery units are located away from CLUs. In the event of transfer, transport infrastructure will be required for either mother or baby, or both. The frequency of transfer between units depends on the patient profile but is between 10-40%<sup>5</sup> and the reasons mirror those for alongside midwifery units.

<sup>&</sup>lt;sup>3</sup> <u>http://www.birthchoiceuk.com/Professionals/index.html</u>

<sup>&</sup>lt;sup>4</sup> RCOG Literature Review- Please see appendix six

<sup>&</sup>lt;sup>5</sup> <u>https://www.npeu.ox.ac.uk/birthplace</u>

6.1.9 Current analysis indicates that 30% of women would be safe to give birth in an MLU without needing a CLU. Midwives adhere to rigorous evidence-based triage protocols when advising women about location of birth and also when needing to transfer women antenatally or in labour. There are usually clear unified guidelines for care and quality standards for transfers between MLUs and CLUs. The differences are in style, the degree of medical intervention and the emphasis on normality in MLUs.

6.1.10 Recent evidence and policy have challenged the need for 87% of mothers to give birth in CLUs. However, some complications are more common if births occur in such units. Low risk mothers who meet the selection criteria for an MLU should be encouraged to give birth in such a unit, if the woman agrees. However, there is no dispute about the need for women triaged to be 'at risk' to give birth in CLUs. In contrast to those served by large hospitals, little real attention has been focused on the needs of those in more remote and geographically challenged areas, whose needs are the same but have major issues with access.

## 6.2 Standards of excellence, workforce issues and service provisions

6.2.1 The following sections refer to standards of excellence, workforce issues and service provisions against which objective assessment of service provision and quality can be made. Some aspects of this methodology are relatively new but are the best tools available for assessing quality. More details about the standards used are set out in appendix ten.

#### **Midwifery services**

6.2.2 The close working relationship between midwives and obstetricians, together with the support from other health professionals, is unique to the UK and emphasises the strength of our maternity services. The workforce requirements for midwifery care as defined in *Safer Childbirth<sup>6</sup>* are reproduced in Table **1**. It allows for:

- the development of differing modes of care
- choice of place of birth
- seamless escalation of care when required (and returning to the original carer when the risk has resolved).

<sup>&</sup>lt;sup>6</sup> Safer Childbirth- Minimum Standards for the Organisation and Delivery of Care in Labour. RCOG 2007 Standards of Maternity care RCOG- 2008

Table 1: Midwifery	staffing in vari	ed birth setting	is based on ca	ase mix categ	jories to provid	e the standard
of one-to-one care i	in labour (adap	ed from Ball, 2	006)#/			

Setting	Birthrate Plus case mix category	Definition of category	Midwife-to- woman standard ratio	MCA to midwife ratio
Home	1&1	Low risk: midwifery care; 37–42 weeks of gestation, normal birth, no intervention, no epidural, good birth weight and Apgar	1 WTE midwife to 1 woman	1 MCA for team of 6 midwives
Birth centre	1&1	Low risk: midwifery care; 37–42 weeks of gestation, normal birth, no intervention, no epidural, good birth weight and Apgar	1 WTE midwife to 1 woman	1 MCA for team of 6 midwives
Obstetric unit based on case mix categories, not dependent on size or setting	1&1	Low risk: midwifery care; 37–42 weeks of gestation, normal birth, no intervention, no epidural, good birth weight and Apgar	1 WTE midwife to 1 woman	1 MCA for 6 midwives each shift to cover diverse duties (non- midwifery)
		Moderate degree of intervention: induction, fetal monitoring, instrumental birth, third degree tear, preterm birth	1.2 WTE midwives to 1 woman	1 MCA for 4 midwives each shift to cover diverse duties (non- midwifery)
	IV	Higher risk/higher choice or need; normal birth with epidural for pain relief, elective caesarean sections, post-birth complications	1.3 WTE midwives to 1 woman	1 MCA for 4 midwives each shift to cover diverse duties (non- midwifery)
	V	Highest risk including emergencies; emergency caesarean sections, medical or obstetric complications, multiple births, stillbirths, severe pregnancy-induced hypertension	1.4 WTE midwives to 1 woman	1 MCA for 4 midwives each shift to cover diverse duties (non- midwifery)

MCA = midwifery care assistant; WTE = whole-time equivalent

6.2.3 In any setting, the role of the midwife remains central as the main supporter and care giver to women in labour, but in the CLU there needs to be immediate access to senior medical obstetric staff. In smaller units (between 2500 and 4000 births per year), 24-hour presence may not be cost-effective and *Safer Childbirth* suggested a 60 hour per week presence as a minimum standard.<sup>6</sup> Other circumstances such as geography and location of units must be carefully considered. The recommendations are included in **Table 2.** 

Category	Definition	Consul	Consultant presence (year of adoption)					
	(births/year)	60-hour	98-hour	168-hour	trainees (n)			
A	< 2500	Units to	Units to continually review staffing to ensure					
		a	idequate based on local need	ls				
В	2500-4000	2009	22	1021	2			
C1	4000-5000	2008	2009	-	3			
C2	5000-6000	Immediate	2008	2010				
C3	>6000	Immediate	Immediate if possible	2008				

Table 2: Proposed obstetric staffing targets, 2007–2010 (adapted from The Future Role of the Consultant)<sup>24</sup>

6.2.4 As stated in 'Safer Childbirth' the RCOG believes that a 24-hour, 7 day a week consultant-led service for women requiring obstetric care improves patient safety and enhances womens' experiences.<sup>6</sup> This results from enhanced clinical leadership and decision making with the added advantage of providing better supervision and mentoring of trainee doctors and increased support for midwifery colleagues. Similarly, women have stated that they prefer to be treated by specialists at any time of the day should they require this level of care. The RCOG recommends that there should be a lead consultant obstetrician on the delivery suite.<sup>7</sup>

#### **Anaesthetic services**

6.2.5 Anaesthetists are an integral part of the maternity team and a lead obstetric anaesthetist is an essential requirement in the provision of safe services. In addition, an anaesthetist of appropriate seniority and experience, with appropriate operating department practitioner (ODP) support, should be on duty in an obstetric unit 24 hours a day. It is recommended that consultant sessions on labour ward are related to numbers of deliveries (one session per 500 births) but this is no longer adequate because of changes in workload and workforce. The following is now expected:

• Each CLU must have a lead consultant obstetric anaesthetist

<sup>&</sup>lt;sup>7</sup> Reconfiguration of Women's Services in the UK (RCOG-Good Practice No. 15). 2013

• A duty anaesthetist for the CLU 24 hours per day

6.2.6 Pain relief should be made available to women who want it and CLUs must be able to provide regional anaesthesia on request at all times.<sup>6</sup> There should be timely referral to anaesthetists for women choosing epidural analgesia. The anaesthetic team's response time is crucial during emergencies and appropriate planning is needed to manage the response to elective procedures and to detect post-operative complications. It is recommended that anaesthetists covering maternity care are not also managing other responsibilities in the Trust.

#### **Neonatal services**

6.2.7 Ensuring safe care for newborns is essential when designing maternity services, and a CLU would not usually operate without the immediate availability (within 30 minutes) of an appropriately skilled clinician with neonatal expertise, a consultant paediatrician or neonatologist available within 30 minutes, and a special care unit staffed by neonatal trained nurses, an appropriately skilled paediatrician with neonatal expertise and a special care unit staffed by neonatal trained nurses.<sup>8</sup> There is an example of a model in Wansbeck, Ashington of a Special Care Unit (SCU, formerly Level 1) fully and permanently staffed by Advanced Neonatal Nurse Practitioners, but such a model would require careful risk assessment and enhanced competencies to ensure that newborn emergencies can be safely managed.

6.2.8 In 2010, The British Association for Paediatric Medicine (BAPM)<sup>9</sup> defined three types of neonatal unit replacing the previous definitions and setting out the staffing, competencies, equipment and levels of care to be provided. Special Care Units provide consultant-led on-call cover shared with a paediatric service and are the minimum requirement to support a CLU, caring for well babies from around 34 weeks gestation. Local Neonatal Units (LNU, formerly Level 2) usually take well babies from 28 weeks gestation, require at least one specialist neonatologist in the team and again usually provide shared consultant cover alongside a paediatric service. Neonatal Intensive Care Units (NICU, or Level 3) are not in place in the county with the nearest units being Preston in the south and Newcastle/Sunderland in the north. The inextricable link between paediatric activity in these small units to justify retention of a consultant team– without that a maternity CLU would not be possible.

<sup>&</sup>lt;sup>8</sup> Reference NHSLA CNST Maternity standards page 133 Standard 5 criterion 2

The maternity service has approved documentation for newborn life support, which as a minimum must include....

e. process for 24 hour availability in obstetric units (on site within 30 minutes), of a consultant paediatrician (or equivalent staff and associate specialist grade) trained and assessed as competent in newborn life support skills and

g. a process for monitoring compliance with all of the above requirements, review of results and subsequent monitoring of action plans

<sup>&</sup>lt;sup>9</sup> Service standards for hospitals providing neonatal care 3rd edition (BAPM August 2010)

#### **Other specialties**

6.2.9 The swift availability of surgical support, imaging, interventional radiology and psychiatric services is important for the obstetric management of higher risk births and the management of unanticipated complications.

#### **Provision of clinical services**

6.2.10 It is feasible for a CLU to provide the full range of outpatient and inpatient services but some units will be better staffed, equipped and experienced to manage more complex births than others. Core features of quality service provision include the presence of an Early Pregnancy Assessment Unit, a day assessment facility, a dedicated theatre for emergency caesarean section (CS) and access to comprehensive pain relief through epidural anaesthesia. The availability of competent staff is mandatory.

## Review of clinical indicators of quality

6.2.11 The use of clinical indicators of quality is beginning to provide robust, comparative information, thus facilitating intra-unit comparisons. Historically, within maternity practice maternal and perinatal death rates were used. Fortunately the numbers are now too small to allow meaningful comment other than through the national three yearly review process.

- Risk adjusted Hospital Episode Statistical data,<sup>10</sup> has been published by the RCOG for 2012 and allows comparison of some well-defined outcomes.
- CQC inspection reports are a method of standardising assessments and enabling standard setting, although they are changing some criteria.
- The maternity dashboard, although often individualised to each unit, collects clinical and managerial data, which allows a snapshot of the issues in a unit on a month by month basis.
- Self-audit of compliance with RCOG Standards 'Safer Childbirth' 2008 working party report
- Clinical Negligence Scheme for Trust (CNST) ranking is an additional external assessment of service provision.

 $<sup>^{10}\</sup> https://www.rcog.org.uk/globalassets/documents/guidelines/research--audit/patterns-of-maternity-care-in-english-nhs-hospitals-2011-12\_0.pdf$ 

6.2.12 Evidence to support the incorporation and implementation of NICE and Royal College guidelines is almost impossible to evaluate within a clinical service including CLUs and MLUs, although often the presence and use of unified labour ward guidelines, incorporating evidence based recommendations, may act as a surrogate marker.

# 6.3 Current configuration of Maternity services

6.3.1 There are four CLUs in Cumbria (Please refer to Table 3).

- The Royal Lancaster Infirmary (RLI) delivers approximately 1 994 women per year of whom 506 are resident within Cumbria. The remaining births are to women who come under the care of the North Lancashire CCG. The level 2 Local Neonatal Unit is based at Royal Lancaster Infirmary with the level 3 NICU located in at The Royal Preston Hospital some 20 miles down the M6 and readily accessible by road.
- Furness General Hospital (FGH) is part of the Morecambe Bay Trust with the Royal Lancaster Infirmary. It delivers about 1 000 women per year and is 47 miles from RLI at Barrow. A very poor road connects the two hospitals. This hospital has Level one unit for neonatal care.
- 3. Further north on the west coast, the **West Cumberland Hospital (WCH)** at Whitehaven delivers approximately 1 290 women per year. WCH is 42 miles from Furness General Hospital and 39 miles from the Cumberland Infirmary at Carlisle. In both directions the speed of transfer is slow due to poor roads and significant volume of traffic. The hospital has a level one unit for neonatal care.
- 4. The Cumberland Infirmary (CIC) at Carlisle delivers approximately 1 640 women per year and is 75 miles to the north of Lancaster. The hospital has level one unit for neonatal care. The units at Carlisle and Whitehaven look to Newcastle for tertiary and level 3 neonatal care facilities.

# Table 3: Current Configuration of Maternity Services

Hospital	CLU/MLU	Number of Births (2013)	Gynae beds	Maternity beds	Neonatal Unit	Labour Ward	Early Pregnancy Assessment Unit	Day Assessment Unit	Managed by
Royal Lancaster Infirmary	CLU	1994	10	24	Local neonatal unit, 8 high dependency 2 intensive care cots Above 28 weeks	Yes	Yes (On Gynae Ward)	Yes	UMBFT
Furness General Hospital	CLU	1000	8	22	Special care unit 5 cots, above 32 weeks	Yes	Yes	Yes	UMBFT
Westmorland Hospital	Freestanding MLU	197	N/A	9	No	Yes	No	No	UMBFT
West Cumberland Hospital	CLU	1290	8 (16 in total shared with Surgery)	13	Special care unit 10 cots	Yes	Yes (9-5 Monday to Friday)	Yes (9-5 Monday to Friday)	NCUHT
Cumberland Infirmary	CLU	1640	8 (shared with Surgery)	10	Special care unit 12 cots	Yes	Yes (9-5 Monday to Friday)	Yes (9-5 Monday to Friday)	NCUHT
Penrith Birthing Centre	Community Hospital (MLU)	40	N/A	1	N/A	Yes	No	No	NCUHT

UHMBT- University Hospital of Morecambe Bay Foundation Trust NCUHT- North Cumbria University Hospital Trust

## 6.3.2 There are two midwifery led units

1. Westmorland General Hospital in Kendal changed from a CLU to a freestanding midwifery unit and delivers between 165-204 women per year. It transfers to the Royal Lancaster Infirmary with a 21 mile separation. The number of births is falling and the structure of the midwifery provision is changing from a 24 hour presence service to a midwife on-call service at night, in the light of workforce difficulties.

2. The Penrith Birthing Unit delivers 22-30 women per year and transfers to Carlisle, 23 miles away.

No facilities for alongside MLUs exist within Cumbria and North Lancashire. Penrith hospital is a midwifery led community facility and Westmorland General Hospital has a freestanding midwifery unit. Realistically, the choice for women in place of birth is very limited to home birth, freestanding MLU or CLU. The delivery numbers for each unit for the last five years are presented in Table B below:

		Financial Year						
Provider	Hospital	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15 (Apr - Dec Only)	
NORTH CUMBRIA	Cumberland Infirmary	1,817	1,769	1,793	1,721	1,672	1,284	
UNIVSERSITY	West Cumberland Hospital	1,353	1,382	1,390	1,371	1,273	956	
HOSPITALS NHS	Penrith	73	47	30	22	24	25	
UNIVERSITY	Furness Hospital	1,081	1,059	1,104	1,017	1,030	726	
HOSPITALS OF	Westmorland General Hospital	255	222	204	186	165	133	
MORECAMBE BAY	AMBE BAY Royal Lancaster Infirmary - Cumbria		424	452	499	549	406	
NHS TRUST	Royal Lancaster Infirmary - Lancashire	N/A	N/A	1,569	1,523	1,419		
FOUNDATION	Royal Lancaster Infirmary - Total	N/A	N/A	2,021	2,022	1,968		

**Table B:** Live births by hospital site for NCUHT and UHMB for all women registered with a Cumbria practice.(RLI total Births refer to all live births irrespective of registered CCG)

#### 6.4 Summary and drivers for report:

6.4.1 With a catchment area of half a million people, 5 000 deliveries per year, and a geographical area of2600 square miles, the challenges of providing high quality maternity healthcare in Cumbria and NorthLancashire are:

- 1. Providing easy patient access to services
- 2. Excellent patient safety
- 3. Recruiting and retaining a high calibre workforce
- 4. Geographical isolation and viability of secondary care units.

6.4.2 Such concepts are applicable across the whole spectrum of healthcare, but become even more focused in providing acute core services like maternity and child health over such a large geographical area. The provision of safe maternity services to this community are a living example of the challenges and complexities of rural and remote medical care for a community. The central challenge of this work has been an issue for years and subject to many internal and external enquiries and the lack of a solution may partly be a reflection of this complexity. Most recently the 'Better Care Together' work stream involving maternity and paediatrics has centred around University Hospitals of Morecambe Bay NHS Foundation Trust in South Cumbria and North Lancashire and 'Together for a Healthier Future' in north Cumbria focusing on North Cumbria University Hospitals NHS Trust.

6.4.3 The challenges facing Cumbria require a bold, long-term strategic plan, designed, communicated and followed through by a strategic organisation large enough and with sufficient resource and longevity to complete the task over several years. Given the changes in culture, attitude and approach to provision required from patients, public and staff across the whole range of healthcare provision, such a long-term model requires understanding and buy-in from a range of organisations, including political groups over a period of several years. This is probably why previous attempts have failed to achieve long term change. Changing health policies and regular organisational restructures have failed to produce structures and leadership that can define and drive through the tough decisions and community engagement needed to provide high quality care for women and their families as close to home as possible. The transition in the last 25 years from Regional Health Authorities through Strategic Health Authorities in two sizes, to Local Area Teams, Clinical Networks, Senates and CCGs, alongside Trusts and Foundation Trusts merging and reconfiguring has meant that many attempts to tackle the issues in Cumbria have been swept away by reorganisation, leaving the community anaesthetised to engagement and lacking trust in the rationale and recommendations of each subsequent review.

6.4.4 In the meantime there is increasing evidence about how services should be designed to maximise safety whilst being realistic about the availability of skilled staff and the feasibility of managing very small units with expert staff close by. There is clear guidance from Medical Royal Colleges and NICE which define levels of care to provide an acceptably safe service for pregnancy and childbirth, postnatal and neonatal care, and these standards are used by CQC when reviewing local services. <sup>11, 12</sup>

6.4.5 Reconfiguration of maternity services poses different problems for different populations. In urban populations, centralisation of acute services may be appropriate, but in rural communities such arrangements can pose major challenges for the dispersed populations. In addition, much of the professional advice about service specification, staffing requirements and skill mix for CLUs is aimed at larger units, operating within large conurbations. Guidelines always put the needs of patients in these different locations first and foremost. Childbirth is a normal process, subject sometimes to unforeseen complications, but is a service that should be provided close to home for the majority of the community. Indeed, it is a process requiring very standard clinical interventions for some women. Infrequently, very serious complications will arise for the mother and/or baby, necessitating a range of acute services including high dependency care, surgery, imaging and significant obstetric/neonatal experience and skills. For those with significant complexities, either of a maternal, fetal or newborn nature, subspecialist care in tertiary centres will be required, as is provided now. The evolution from a consultant-led service based on high risk, to a midwifery-based pattern of care centred on normality needs to be the pattern for the future configuration of service for many women, founded on the most contemporary evidence. It is imperative to develop services that allow women and their babies' access to good quality and safe care while genuinely embracing choice.

6.4.6 Within the county of Cumbria the fear of losing maternity services through reconfiguration has reached fever pitch, exemplified by a road side effigy campaign which is distressing for the community, health care professionals and visitors. Against this background, and despite the direct involvement of CQC and Monitor and the Keogh Report due to quality issues in two of the hospitals, there has been a lack of strategic medical leadership in defining the safest service for the women and their babies of Cumbria.

6.4.7 It is our responsibility through this report to present an options appraisal to define the safest strategy which meets the needs of the local population using evidence based standards and professional judgement, setting out the practical implications for commissioners and providers of health care.

<sup>&</sup>lt;sup>11</sup> See appendix 10- Service Standards from Royal Colleges

<sup>&</sup>lt;sup>12</sup> Intrapartum care: care of healthy women and their babies during childbirth (NICE CG190)-2014

Ultimately, it is the responsibility of the local commissioners and provider units to assess the options and implement the option that they believe will best meet their patients' needs.

# 7. PROCESS OF THE REVIEW

7.1 The team was selected through the RCOG Invited Review Process and with notifications of conflicts of interests. Documentation from both CCGs were sent to the assessment team before the visit and the lead assessor also undertook a one day pre-visit to Cumbria to understand the complexities of the review. The terms of reference and the relevant staff selected for interview, were based upon the pre visit.

7.2 The assessment team suggested staff that they wished to interview face-to-face at each of the sites.The interviews were chaired by the lead assessor with all assessors present for the majority but not all interviews. Some specialist interviews were conducted by the appropriate specialists.Those that were unable to attend a face-to-face interview, were available by teleconference. A list of those interviews can be found in appendix one.

7.3 A literature review was also undertaken looking at the recent evidence on the size of maternity unit and outcomes, distance to the nearest maternity unit and safety and population behaviour regarding freestanding MLUs.

7.4 The options appraisal was formulated on the basis of the objective information and quality data that was provided, interviews with stakeholders including staff and services users and the professional expertise and analysis of the assessors. The presentation of this data was based on the evaluation criteria for potential service models developed by the 'Healthier Together' collaboration.

# 8. FINDINGS AND ANALYSIS

# 8.1 Workforce and Staffing

## Midwifery (Please refer to table 4)

8.1.1 The midwifery structure is defined by a Head of Midwifery at each of the two Trusts and a Consultant Midwife in Public Health in the north of the county. The definitions for the midwifery workforce are straightforward and directly related to activity. One to one care in labour is the norm and expected. The staffing levels generally for midwifery are compliant with Birthrate Plus<sup>®13</sup> which is the 'industry standard' midwifery modelling tool, although there were very different experiences and attitudes to employing locally trained midwives between RLI and WCH in particular.

8.1.2 The recent investigations and uncertainties of the Kirkup Review into the governance of maternity and paediatric services at University Hospital of Morecambe Bay NHS Foundation Trust dating back to 2004-2013 are still a major cause of uncertainty for service provision and staff at FGH in particular. Currently three midwives are undergoing NMC Fitness to Practise enquiries and five are still awaiting decisions. Such pressure continues to influence professional behaviour, although support structures are now in place. The pressure felt by staff related to 2004-2013 is very raw, and unpleasant incidents occur to staff in the community, such as being verbally harassed and physically harmed in the local supermarket. The current long-term sickness rate for several midwives, related to this and police investigations, is not sustainable. Recruitment to midwifery and to some medical roles has been challenging.

8.1.3 The assessors, cognisant of the fact that a maternity review had taken place in the last two years, still believe that insufficient thought has been given to the structure and domains to be covered by the leaders in midwifery. A consultant midwife in normality would be helpful in trying to modernise the service, improve empowerment and perceptions of women about normal birth and potentially reduce the high caesarean section rates.

#### Obstetrics

8.1.4 Staffing comparisons have been made with the recommendations of *Safer Childbirth* and *Reconfiguration of Women's Services in the UK*.<sup>6, 7</sup> Forty hour consultant labour ward presence was provided in all units and compliant medical presence and availability was provided. Some recommendations are more flexible than others and *Safer Childbirth* does allow for flexible rotas in its

<sup>&</sup>lt;sup>13</sup> http://www.birthrateplus.co.uk

definition of hours of consultant presence on the labour ward for small units.<sup>6</sup> The obstetric cover for the four units seemed to meet quality standards but only through a significant employment of locums.

8.1.5 Despite the low delivery numbers, the structures for obstetric medical staffing within the four units have been designed on the basis of traditional hierarchical patterns of staff with a reliance on trainees and non-consultant grades to provide first on-call, out of hours cover, with non-resident consultant cover immediately available if and when required. There are some rotas, for example RLI, where a consultant is on site out of hours but those rotas are infrequent. The assessors were provided with evidence of excessive use of locums and the expenditure on locums was perceived to be higher than expected. If anything, the assessors were surprised by the number of doctors on-call for obstetrics and gynaecology at any one time for the low number of deliveries.

8.1.6 The allocation of trainees to individual hospitals is determined by the Postgraduate Dean, with most senior trainees based in CIC and RLI. Recruitment to the non-consultant specialist appointments at FGH and WCH is a major challenge and long-term locums are a much used resource. Recruitment at consultant level has not been an issue recently and high quality candidates have been appointed in obstetrics and gynaecology to three of the hospitals in this area, but it remains uncertain that such a favourable situation will continue.

8.1.7 Sustainability of the medical obstetric workforce, using the current staffing models has been an unresolved challenge due to recruitment problems, uncertain futures for hospitals, imposition of special measures, external reviews and the European Working Time Directive (EWTD) impacting on small units. Patient safety is improved with a stable workforce familiar with a hospital's clinical guidelines and working practices. In this case, the necessity of supplementing cover through locum medical staff has further increased risk, reduced morale and is therefore not a sustainable model for service provision in the long term.

8.1.8 The definition of medical staffing requirements and skill mix by NICE, Medical Royal Colleges and other professional and advisory bodies are based on goals for clinical standards and usually modelled on large units.<sup>11, 12</sup>

8.1.9 *Tomorrow's Specialist*<sup>14</sup> states that: For small units a staffing structure has to be defined which ensures patient safety. Some units, particularly rural, isolated hospitals with small numbers of births, will need innovative models of care, as there is unlikely to be sufficient clinical activity for an entirely specialist

<sup>&</sup>lt;sup>14</sup> RCOG Tomorrow's Specialist -Working Party Report September 2012

workforce and they are less likely to have specialist registrars in sufficient numbers for full out-of-hours cover. Only by developing networks that are responsive to geographical and regional variation and that provide the totality of women's health needs, will quality and safety be improved.

8.1.10 The assessors were struck by the relative isolation of working in many of the four CLUs and believe that a formal structure needs to be organised based on a 'hub and spoke' model. This restructure analysis should improve patient care, improve professional satisfaction and variety and develop team working.

Unit	Consultant	Middle grade	Trainees	Rota/First on call	Midwives
Furness	4 cons	6.16 staff grades and	5	7 doctor full shift:	1:27 Birthrate Plus <sup>®</sup>
General	3 associate	SHO		2 GP ST	31.3 WTE
Hospital	specialists			2 F2	15.69 Other in the trust
				3 specialty doctors	
Royal	7.62 cons		10.3 training	4 GP ST	1:27 Birthrate Plus <sup>®</sup>
Lancaster	0.3 associate		contract plus two	2 F2	63.33 WTE in CDS, Ward 17, ANC.
Hospital	specialist		others	1 O&G ST1	19.12 WTE in community and MW
					practice educator
West	5 cons (on	7 specialty doctors		Locums cover on call day and	1:11 Midwifery Supervisors
Cumberland	call 1:5)	posts –all vacant (LT		night	1:28 Birthrate Plus <sup>®</sup>
Hospital		locums)			MW in North 126.19 FTE
Cumberland	6 cons (on	6 tier doctors –full rota	7 specialty	Night 1:8	1:28 Birthrate Plus <sup>®</sup>
Infirmary	call 1:5)		trainees. One		See above
Carlisle			speciality doctor		
			grade		

# Table 4: Obstetrics and Gynaecology and Midwifery workforce

#### **Surgery and Anaesthetics**

8.1.11 For all services, staff recruitment and retention has been a huge problem and at its most serious in anaesthetics at WCH and CIC. Different recruitment initiatives have failed to attract personnel of the right calibre. This has had a serious impact on patient safety across both WCH and CIC and there are ongoing Serious Incident investigations into 'Never Events' including some which are not directly maternity related. The removal of emergency consultant surgical cover out of hours at WCH has been a recent decision, on patient safety grounds, to focus out of hours surgical services at CIC. The lack of immediate surgical expertise is an infrequent but potential problem to the maternity and gynaecological patients. At all other sites surgical cover was available through the standard surgical on-call arrangements.

8.1.12 Historically, there have been major gaps identified in the provision of anaesthetic services for women in labour in both Trusts in Cumbria, reducing choice and potentially raising risks for women. Table 5 indicates that the workforce issues for anaesthetic provision are not being met and often the anaesthetist on-call is also cross-covering intensive care provision. The absence of an established patient choice driven epidural service does not meet current standards in all four units. An epidural service does not exist at CIC and at some sites the provision of the epidural service is unpredictable and determined by other pressures and responsibilities on the anaesthetic staff. There have been breaches in the timing for category 1 and 2 caesarean sections<sup>15</sup> in the only unit which collects this data. Indeed, 25% of category one caesarean sections were not carried out in 30 minutes between January and November 2014 in that unit. There may be multiple reasons behind such delays, but immediate anaesthetic presence is one possible explanation.

8.1.13 The ability to appoint permanent anaesthetic staff is an extremely important consideration in providing a safe and sustainable service to the CLUs at all sites. The model of a third on call rota at FGH and WCH does mitigate the risk of anaesthetist not being immediately available for the obstetric unit. However, without further appointments, it is of concern as to whether this can be sustained over the medium to long term.

8.1.14 All units fail to comply with the national standards for anaesthetic provision.<sup>8.</sup> Whilst this is not unusual in a lot of CLUs around the country, all units must work towards achieving these standards. In the meantime, processes and practices must be in place to mitigate against these failures to achieve the standards, and regular reviews of outcomes be done to compare with national outcomes. Other risks to maternal and fetal outcomes need to be kept in mind such as the travelling time to the nearest CLU.

<sup>&</sup>lt;sup>15</sup> Categories of CS – <u>http://www.nice.org.uk/guidance/cg132/chapter/guidance</u> - **Grade 1** – where conditions are life- threatening to the mother or baby **Grade 2** –where there is a threat to the maternal or fetal condition. But not immediately life-threatening.

# Table 5: Anaesthetic cover

(Please see Appendix Eleven for Anaesthetic Staffing cover at NCUHT (as of March 2015)

Unit	Consultant	Middle grade	Trainees	Rota/on call
Furness General Hospital	9 consultants, 6 associate specialists and one specialty doctor.	1 in 7 Rota to cover ITU	No trainees	1 in 7 consultant rota (non-resident) Also cover ITU Separate 1 in 12 senior third on call rota (non-resident)
Royal Lancaster Hospital	17	8 Rota 1 in 7	6 Rota 1 in 7	Rota 1 in 17 (Separate ITU rota)
West Cumberland Hospital	6	6.5 Rota 1 in 6, also cover ITU	No trainees	1 in 9 consultant rota (non-resident) also covers ITU. Third on call rota 1 in 9 (non-resident)
Cumberland Infirmary Carlisle	19 Rota 1 in 9 (separate ITU Rota)	Variable	7 Rota 1 in 7. Some are middle grade, but if not middle grade on call, consultant is resident. Cover ITU/OBS/General	Rota 1 in 10 (Separate ITU Rota) Cover

#### Paediatrics and neonatal care

8.1.16 The paediatric medical and nurse staffing arrangements at the four sites have been compared in Table 6 with the recommended levels set out in the *Facing the Future*<sup>16</sup> standards for very small units, and also the *Quality and Safety Standards for small and remote units*<sup>17</sup>, both published by RCPCH, together with BAPM's *Service standards for hospitals providing neonatal care*<sup>9</sup> which are monitored through the neonatal networks covering the two 'ends' of Cumbria.

8.1.17 It should be noted that the provision of a medically staffed special care baby unit is dependent upon the retention of a viable paediatric service. There have been a number of parallel reviews within both networks and Trusts in recent years. These have considered reconfiguring paediatric staffing arrangements through the establishment of a paediatric assessment unit to support emergency attendances rather than fully staffed inpatient wards. These reviews will obviously impact neonatal provision, but for the purposes of this review it was assumed that a full paediatric service will remain.

8.1.18 The model in FGH, running a two-tier service appears compliant with current standards and has not faced significant recruitment difficulties, although the rota is dependent upon consultants providing first on-call cover. It is debatable as to whether it is a sustainable and appropriate use of a very valuable resource. There are also concerns over whether the model is clinically sustainable in the long term without rotation to a busier unit where the medical team can maintain their emergency skills. The CIC also runs a two-tier service but recruitment is difficult, possibly due to the uncertainty of the current arrangements, and there are limited links with the paediatric team at WCH.

8.1.19 It is not appropriate in this maternity options appraisal to explore in detail the arrangements for paediatric provision. Although the formal standards state that immediate availability of a paediatrician is a requirement for an obstetric unit, there are examples of nurse-led SCUs and other models which have satisfied themselves and their commissioners that a safe level of care is provided through additional training and enhanced competencies of clinical staff.

<sup>&</sup>lt;sup>16</sup> Facing the Future RCPCH 2011

<sup>&</sup>lt;sup>17</sup> Quality and Safety Standards for Small and Remote Units RCPCH 2011

# Table 6: Paediatric Cover

Unit	Number of cots	Consultant*	Middle grade	Trainees	Rota	Neonatal nurses**
Furness	5 SC	9 (7 working	none	5	1:7	13.25* WTE
General	>100	resident on-call)				(should be
Hospital	admissions	to recruit to 10				12.2)
(SCU)	/ year					
Royal	8 SC/HD	9 by April 2015	5 plus 2	8	1:7 now	24.23 WTE
Lancaster	2 IC	plus 3 with no	community		and 1:8	should be
Hospital		on-call	7 3x ST4/5		by April	29WTE)
(LNU)			1xST3		2015	
West	10	4.8 plus 1/	3 but 1 vacant,	5 (2xF2,	1:5.25	Band 3 2 WTE
Cumberland		week	1NP. Covers	ST1,		HCA
Hospital		community on-	busy times	2xGPVTS)		Band 5 6.2 WTE
(SCU)		call	-			Band 6 4 WTE
						Band 7 1.8 WTE
						No ANPs
Cumberland	12	5.5 (1 vacant)	1 p/t, in hours	6	1:6	Band 3 3
Infirmary		**	only, funding			WTEHCA
Carlisle			for 2xNP, 1 in			Band 5 2.6 WTE
(SCU)			post			Band 6 3.0 WTE
(000)			1			Band 7 5.81 WTE

\* Workforce planning report says need to recruit another 5.1 advanced nurse practitioners to support gaps in the medical rota

\*\*At CIC the rota is consultant led with the midwifery staff doing initial resuscitation and they call the consultant in, the juniors have nothing to do with SCBU or labour ward. The consultants do no routine resident working and it is possible they will be around 20 mins away for a baby being resuscitated by midwives. This has apparently not been an issue over 2 years.

# WORKFORCE STAFFING

# Table 7. Compliance with Workforce recommendations

Unit	Obstetric Consultant labour ward presence	Paediatric compliance Divide day/night	Midwifery compliance	Anaesthetics compliance Divide Day/night	Access to high dependency and surgery
Furness General Hospital	40 hours associate specialist O&G- 3WTE, cons Gynae-4 WTE, FY2 O&G 2WTE	9 (7 working resident on-call) to recruit to 10.	1:27	<ul> <li>9 consultants, 6 associate specialists</li> <li>and one specialty doctor.</li> <li>1 in 15 non-resident on call senior</li> <li>anaesthetist cover</li> </ul>	Anaesthetics 1 in 7 resident on call for obstetric emergencies and ICU (5pm-9am)
Royal Lancaster Infirmary	40 Hours associate specialist Gynae 0.3, cons O&G 7.62 WTE, FY2 O&G 2.0, Specialty Doctor 1.0 WTE	9 by April 2015 plus 3 with no on-call	1:27	<ul> <li>25 and 2 associate specialists</li> <li>1 in 16 Non-resident general covering general and obs emergencies.</li> <li>2 trainee resident on call out of hours (one covers maternity)</li> </ul>	Anaesthetics- 1 in 7 non-resident ICU on call rota
Westmorland Hospital	NA	NA	1:11 Band 6 -11WTE Band 7 - 5.8WTE	NA	NA
West Cumberland Hospital	40 hours 5 cons	4.8 plus 1/ week community on-call. (Difficult as relies on paediatric service requirements)	126.19 WTE for North Cumbria	2 elective LSCS dedicated anaesthetists 1 additional Consultant obstetric session.	Remaining 7 sessions covered by speciality doctor also covering ICU/transfers with a consultant
Cumberland Infirmary, Carlisle	40 hours 5 cons	5.5 (1 vacant).	See above	3 elective LSCS lists with a Consultant anaesthetist. Remaining 7 sessions experienced trainee or Consultant dedicated to obstetrics. (Second consultant for CEPOD list working alongside).	Separate ICU rotas

#### Opinion

8.1.20 The current standards for safe medical staff cover make it impossible to deliver services using the traditional models of emergency cover. Modelling must involve changes in all hospital units to achieve appropriate care that meets acceptable standards and the needs of women and their families.

8.1.21 For maternity provision it is recommended that appointments to both Trusts are made across the whole Trust so that working for the Trust implies working at both CLUs. It is anticipated that all obstetric and gynaecology consultants will share responsibilities across both hospitals with different working patterns at either end of the 'Bay' and the concept of a 'hub and spoke' arrangements needs development. This is a challenging and bold proposal, requiring a culture and attitude change amongst the consultant body, so would need to be carefully explored for feasibility before decisions are made.

#### Example

With an average of only 3-4 deliveries per day at FGH there should be less need for middle grade staff servicing the on-call rota and patterns of 24-hour consultant presence should be developed. These consultants, including those presently employed at RLI, should be based at RLI as the bigger unit, and rotated to FGH to cover both elective day time duties and the on-call service commitment as resident (days/nights and weekends) on a rotational basis. The frequency of such an attachment will depend on the numbers of consultants appointed. Appropriate on-call accommodation facilities would be required.

At RLI the obstetric and gynaecology medical staff should maintain the present three tier on-call which, with additional consultants, would be less frequent and less strenuous than at present to compensate for the resident on-call commitment at FGH. This would ensure ongoing engagement and involvement of all consultants in both units and a fair share of the on-call commitments. It would also mean that there could be ongoing mental stimulation and involvement in educational activities such as MDT, audits, PNM, postgraduate and medical school teaching, etc., on one site with a meaningful core number of personnel. This will be vital for revalidation and CPD. Such a move would create a unified department and a varied job plan for consultants. However, it is anticipated that such a move would be a challenge to many established consultants. This must apply to all consultants and therefore will require skilful diplomacy, but there should be no opt-out. Placing the load on the most recent appointees would create departmental divisions.

Trainees should continue to attend FGH for elective training, including outpatient and surgical experience. For FY1/2 and ST1/2 doctors an attachment to this Trust would provide valuable experience. In this example, FGH would be the spoke and RLI the hub with The Royal Preston Hospital as the major tertiary centre (see 8.1.22). Similar structures could be employed for anaesthetics and paediatrics, who already have funding to recruit ten consultant appointments at FGH.
It would seem prudent to explore a similar model for CIC and WCH with CIC being the hub and WCH the spoke and the tertiary links being with Newcastle.

8.1.22 The amalgamation of staffing structures proposed to resolve the obstetric concerns will go some way towards addressing updating, skills preservation and CPD requirements, but liaison with larger tertiary units should be explored for maintenance of skills; Newcastle for CIC and WCH and either Preston or Manchester for FGH and RLI.

8.1.23 Such an arrangement would enable consultants to work in very busy units for a defined time to update competencies and would require clinical engagement and not observation only. This should become an essential ingredient in CPD and revalidation and would support the minimum standards outlined in *Safer Childbirth<sup>6</sup>* and be funded appropriately by the commissioners. It is anticipated that this model would improve team working and communication across the networks.

8.1.24 Although the model is initially proposed for obstetric workforce, similar issues are occurring within the paediatric and anaesthetic service. In the longer term, a similar solution may be required if it can be sustained for maternity.

## **8.2 SAFETY AND QUALITY**

8.2.1 This report uses a selection of published metrics in an attempt to corroborate the available quality data. The data reviewed and produced by the CLUs and other organisation is presented in table form but more fully in the appendix. Some of these metrics include:

- The maternity dashboard provides evidence of managerial and clinical quality and safety, collected monthly. And through the RAG system one can rapidly assess issues related to quality.
- CQC assess against their own *Essential Standards for Quality and Safety* (2010)<sup>8</sup> and the outcomes from their recent reviews are listed, although the criteria for assessment are changing. Each unit has been reviewed in 2014.
- Friends and Family test.
- CQC 2013/14 survey of women's experiences of maternity services.
- Maternity Indicators based on Hospital Episode Statistics (1 April 2011- 31 March 2012). This is collated by the RCOG and subjected to defined processes to allow for inter-hospital benchmarking. (See appendix 4)
- Feedback from trainees and GMC data.
- In addition, information unique to each unit obtained through interview is presented throughout the report.

#### Maternity Dashboard (Table 8)

8.2.2 The two Trusts had their own individual dashboard; the data collected was different and direct comparisons cannot be made. However, the collection of this data together with the presentation is an indicator of quality for all four CLUs. The presentation of two different maternity dashboards within one county makes direct comparison more difficult and a consistent metric would be helpful. Observation of the dashboard RAG system does indicate problems across the CLUs in many areas of clinical practice including LSCS rates, PPH rates, 3<sup>rd</sup> & 4<sup>th</sup> degree tear rates, and unexpected admission of a term baby to NICU which are indicated as red. There may be very obvious explanations for this but the constant red flagging should be accompanied by an analysis of the reasons and an action plan for improvement which was not available to the review team. Where recorded, the patient complaint levels were very low.

Of particular note are the following:

- The caesarean section rate is very high, in particular at FGH. The unexpected admission of the baby to a neonatal service was very high at WCH and CIC
- The lack of availability of epidural analgesia at one CLU is very obvious.
- The dashboard concept does not allow us to explore the reasoning behind these metrics.

CLU	LSCS rate (%)	ITU admission(ran ge by month- n)	Unexpected admission of new born to Neonatal unit (range by month)	Post-Partum Haemorrhage Greater than 1500ml(range by month-n)	3 <sup>rd</sup> & 4th degree tear (range by month-n)	Epidural rate (%)	Assisted vaginal delivery rate (%)
FGH (deliveries 77- 106 per month	Alert rate 27. Mean rate 33 Range 30-36 Target 26	N/A	N/A	Alert Rate 2 Mean Rate 0.2. Range 0-1	Alert rate 5. Mean Rate 0.8 Range 0-2	Alert Rate 25. Mean rate 13 Range 4-21 Target 20	Alert Rate 20. Mean Rate 6.8 Range 0-18 Target 15
RLI (deliveries 152-183 per month)	Alert Rate 27 Mean Rate 27 Range 25-31 Target 26	N/A	N/A	Alert Rate 2 Mean rate 0.8 Range 0-2	N/A	Alert Rate 25 Mean Rate 28 Range 26-31 Target 20	Alert Rate 20 Mean Rate 10 Range 0-20 Target 15
WCH (deliveries 78- 116 per month	Alert Rate 27 Mean Rate 27 Range 21-34 Target 26	Mean rate 2 Target 6 in 6 months. Range 0-2	Alert Rate 2 Mean rate 3. Range 2-7	Alert rate 3 Mean Rate 5 Range 1-9	Alert Rate 4.5 Mean rate 2.6 Range 0-7	Mean Rate 16 Range 3-12	Alert rate 20 Mean Rate 8 Range 8-13
CIC (deliveries 138-177 per month)	Alert Rate 27 Mean rate 26 Range 21-31	0	Alert Rate 2 Mean rate 9 Range 9-10	Alert rate 3 Mean rate 2 Range 3-4	Alert rate 4.5 Mean Rate 4.5 Range 2-6	Not collected	Alert Rate 20 Mean rate 8 Range 4-12

## Interview feedback from staff and the community—Friends and Family Test

8.2.3 There was abundant verbal evidence to support the use of patient pathways, evidence based guidelines and incident reporting during interview. The perception from the public was that the current service provision was safe. Indeed the public are prepared to sacrifice elements of quality for proximity of service (Table 9). The recent feedback from this metric was strongest for FGH in particular and less satisfactory for RLI.

## **Table 9: Friends and Family Test**

	Would you	Would you recommend the	Would you recommend the
	recommend the ante-	labour ward and birthing	post-natal care? (YES)
	natal care(YES)	experience?(YES)	
RLI	52%	71%	49%
FGH	100%	93%	82%
WCH	89%	81%	81%
CIC	89%	73%	73%

## **CNST Grading**

8.2.4 The level of CNST grading was consistent across the county, with all units being assigned level one.

## CQC patient survey questions for maternity care

8.2.5 Both the NCUHT and UHMBT CQC survey from 2013 demonstrated equivalent or better scores than other Trusts with good scores in care during pregnancy and labour but less good for support in the puerperium (Please see table 10). In comparison to data from 2010 there was a fall for UHMBT in aspects of mobility in labour, length of stay and kindness and understanding after birth. Overall the feedback for the CQC data monitored by the Picker Institute was very satisfactory.

 Table 10: Survey of women's experiences of maternity services

	Score (out of 1	.0)
CQC Patient survey questions for maternity care	NCUHT (163)	UHMBT (145)
Labour and birth		
Being given appropriate advice and support	8.7	8.2
For being able to move around and choose the most comfortable position during labour	8.3	7.6
For having skin to skin contact with the baby shortly after the birth	9	8.7
Partner being involved as much as they wanted	9.5	9
Staff during labour and birth		
For staff introducing themselves	9.3	8.7
For not being left alone by midwives or doctors at a time when it worried them	8.3	8.1
For raising a concern and having it been taken seriously	8.1	8
For having the call button responded to quickly	8.7	8.3
For feeling they were spoken to in a way they could understand during labour and birth	9.2	8.9
For being involved enough in decisions about their care during labour and birth	8.8	8.2
For being treated with respect and dignity	9.3	8.7
For having confidence and trust in the staff caring for them during labour and birth	8.8	8.3
Care in hospital and after birth		
For feeling their stay in hospital after the birth was the right amount of time	7.8	6.8
For feeling they were given the information and explanations they needed after the birth	7.9	7.4
For feeling they were treated with kindness and understanding by staff after the birth	8.1	7.6
For how clean the hospital room or ward was	8.3	8.4
For how clean the toilets and bathrooms were	8.1	7.8

Table 11: Maternity indicators based on Hospital Episode Statistics (1 April 2011- 31 March 2012) (Please see appendix 4 for specific unit data)

Indicators	LSCS before 39 weeks with no clinical indication		National Mean		Elective CS Rate		National Mean		Third and Fourth Degree Perineal Tears in assisted vaginal deliveries		National mean	
	Ρ	М	Ρ	Μ	Ρ	Μ	Ρ	Μ	Ρ	Μ	Ρ	Μ
Furness	51.8%		30.3%		5.8%	16.3%	2.8%	12.1%	8.8%	2.0%	6.9%	2.5%
General												
Hospital												
Royal	39.3%		30.3%		2.4%	14.2%	2.8%	12.1%	9.5%	0.7%	6.9%	2.5%
Lancaster												
Infirmary												
North	19.7%		30.3%		3.4%	15.6%	2.8%	12.1%	5.6%	1.8%	6.9%	2.5%
Cumbria												
Acute												
Hospitals												

P- Primiparous Women

M-Multiparous Women

## Maternity indicators based on Hospital Episode Statistics (1 April 2011- 31 March 2012)

8.2.6 RCOG analysis following risk adjustment of HES data collected from all Trusts for 2011/12 does allow some indirect evidence of implementation of guidelines. With this data, it is possible to compare various outcomes with the national mean scores. Observation of Table 11 demonstrates three variables which show trends and are in agreement with the dashboard data, although it must be stressed that the dates of collection are different. In the case of WCH and CIC the data was analysed as for a unified Trust. Of particular note are the following:

- Performing over 50% of elective caesarean sections before 39 weeks at FGH is very high and merits explanation.
- The incidence of performing elective caesarean section before 39 weeks in in NCUHT is below the national mean.
- The incidence of 3rd and 4th degree tears is very high for primiparous women in UHMBT

#### CQC reports for 2014

8.2.7 CQC reviews had been conducted through all units during 2014 and the anxieties around issues of safety and medical staffing were are confirmed (Please see Table 12 and also Appendix Five).

The detailed reports are available for public scrutiny but Table 12 shows differences in the individual metrics between the Trusts. There is a clear statement that all CLUs need to improve. Of particular note the following should be emphasised, which have not been covered before:

- At UHMBT greater emphasis should be placed on gathering information on performance, incident reporting, workforce and applying lessons learnt.
- There needs to be a clear strategy with emphasis on better cohesion between the two units.
- At WCH the 'requires improvement' rating for safety is significant and issues included the lack of dedicated medical cover and failure to act on identified risks.
- The issue of safety was again highlighted at CIC and reflects that identified risks had not been acted upon.
- At CIC, the absence of an epidural service and the lack of capacity of medical leadership were highlighted.

Unit	Safe	Effective	Caring	Responsive	Well- led	Overall assessment
FGH	Good	Good	Good	Requires	Requires	Requires
June 2014				improvement	improvement	improvement
RLI	Good	Good	Good	Requires	Requires	Requires
June 2014				improvement	improvement	improvement
WCH	Requires	Requires	Good	Requires	Good	Requires
May 2014	improvement	improvement		improvement		improvement
CIC	Requires	Requires	Good	Requires	Requires	Requires
May 2014	improvement	improvement		improvement	improvement	Improvement

# Table 12: The reports from CQC

#### Feedback from post graduate medical Trainees - General Medical Council trainees survey 2014

8.2.8 The GMC trainees' feedback should be a serious cause for concern. Both Trusts were negative outliers and such observations, although representing few trainees, may be a proxy of training experience and overall clinical service, since the quality of training often mirrors the quality of clinical care. Trainees can act as very reliable 'eyes and ears' of an organisation and at each CLU they were able to provide data. In addition, the GMC survey from obstetrics and gynaecology trainees is presented to give additional information. Of particular importance were the following observations obtained from interview:

- Trainees at FGH were very warm and encouraging stating that the care was good, there was a good learning environment with good one to one care and supportive midwives.
- The feedback from non-consultant staff working in the other three units was favourable, with good gynaecological surgical training being available at WCH.
- In contrast, trainees in other units perceived FGH as a unit practising a 'different type of medicine,' due to different protocols of care and management.

#### **Table 13 : GMC Trainees Survey**January 2015 (using 2014 data)

	Overall Satisfaction		Clinical Supervision			Adequate Experience			Workload			
	Cooro	National	Rank	Score	National	Rank	Score	National	Rank	Scoro	National	Rank
	Score	Score	(of 153)		Score	(of 153)	Score	Score	(of 153)	Score	Score	(of 153)
North Cumbria University Hospitals NHS Trust	70.4	79.51	134	89	89.73	99	66	77.91	145	53.75	43.44	34
University Hospitals of Morecambe Bay NHS Foundation Trust	52	79.51	152	80	89.73	150	54	77.91	151	52.5	43.44	40

	Educa	Educational Supervision			Feedback			Regional Teaching		
	Score	National Score	Rank (of 153)	Score	National Score	Rank (of 153)	Score	National Score	Rank (of 151)	
North Cumbria University Hospitals NHS Trust	95	91.74	54	80	77.8	74	57.85	64.33	133	
University Hospitals of Morecambe Bay NHS Foundation Trust	75	91.74	152	77.5	77.8	90	65.4	64.33	69	

*North Cumbria University Hospitals NHS Trust* was noted as a negative outlier in the 'Induction' and 'Access to Educational Resources' indicators. *University Hospitals of Morecambe Bay NHS Foundation Trust* was noted as a negative outlier in the 'Overall Satisfaction' and 'Adequate Experience' indicators.

Notes - The scores noted above run from 0-100, with 100 meaning all positive responses.

Of more significance than the raw scores is the comparison of the relevant units with the national score for that indicator.

It is worth noting that both units consist of 3-5 trainees - these small numbers mean each respondent will have a large effect on the score for the

unit.

Table 14: Summary a	nalysis of metrics of	safety, acceptability a	and compliance with	standards and guidelines
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Unit	CQC Assessment	Maternity dashboard	Evidence of Clinical Guidelines at each Trust	Friends and family test	Comparator with RCOG guidelines (Timing of Elective LSCS)	40 Hours Consultant Presence on Labour ward	CNST Grading
Furness General Hospital	Requires improvement. LSCS rate. Incident reporting. More analysis of performance. Closer working with RLI.	High LSCS rate Epidural rate about 12%	Yes	Very good scores but low returns, 100% recommend for antenatal care, postnatal care 82%	Over 50% of elective LSCS performed before 39 weeks	yes	one
Royal Lancaster Infirmary	Requires improvement but safe service	Clear evidence of epidurals in about 30%	Yes	Recommend antenatal care- 52%, postnatal care 49%	39.3% elective LSCS before 39 weeks	yes	one
West Moreland Hospital	Good	Transfer rate in labour- 34%		Very good although numbers very small.	N/A	N/A	one
West Cumberland Hospital	Requires improvement Very significant safety remarks - failure of staffing levels - failure to follow NICE guidance. High LSCS rate	High LSCS rates	Yes	Larger number of responses with good feedback. Recommend antenatal care- 89%, postnatal care 81%	Pooled data between two hospitals 19% Elective LSCS before 39 weeks.	yes	one
Cumberland Infirmary, Carlisle	Requires improvement with serious safety questions Lack of epidural service High incident reporting High LSCS rate	Normal LSCS rates	Yes	Recommend antenatal care- 89%, postnatal care 73%.	As above	yes	one

#### Leadership

8.2.9 The assessors were impressed by aspects of leadership in different areas. In particular the midwifery leadership at FGH was innovative and to be commended given the complexity of on-going difficulties. In addition, the Clinical Director at UHMBT had implemented some innovative changes to the paediatric consultant staffing at FGH. In contrast, the lack of strategic vision among the medical leaders across the county was apparent. At WCH and CIC the lack of strong leadership among the medical workforce may be related to the constant pressures and inability to recruit.

#### Opinion

8.2.10 Observation of the extensive quality data analysed by the review team summarized in Table 14 indicates the required scope and extent of improvement to all elements of the service for all providers to make the service as safe as possible for the women of Cumbria. However, the current perceptions from the women of Cumbria (Friends and Family Test) are favourable, although this has not always been the case. It is vital that the leadership from CCG Board level and from the Trust Board level take stock of the quality metrics with quarterly reporting and implementation plans. Such a process may be helped by identifying a member of each Board to have responsibility for overseeing Women's and Children's Services. The quality of the service which is so influenced by the workforce must improve. Quality must be the primary driver for all managers, clinicians and other staff involved in provision of maternity services.

#### **8.3 PATIENT AND PUBLIC NEEDS**

8.3.1 In addition to feedback from healthcare professionals, campaign groups, the local authority and local HealthWatch were interviewed during the visit and evidence was available from patient and public engagement conducted by NHS Cumbria and North Lancashire CCGs. During the three day visit we heard direct evidence from women using maternity services and members of the Maternity Services Liaison Committee (MSLC) in West Cumberland Hospital.

A number of emerging themes were evident:

#### Support for midwifery-led care

8.3.2 Midwifery-led units appeal to many women who appreciate the personal, one-to-one care and continuity that midwifery-led care provides. Most of all, women and families want care to be safe and the reassurance of the CLU nearby was important and gave confidence to women. The strong message was that freestanding MLUs may not be used by sufficient numbers of women to make them viable. If current consultant-led units were replaced with a strategically placed freestanding MLU (perhaps in Cockermouth) this would still not be the choice for many women.

8.3.3 Current usage of the Westmorland Hospital has dropped from 255 to 165 deliveries per annum despite attempts to increase numbers. The unit has strong vocal support from women living in the Kendal area and those who have used the unit. There is occasional use from women living more remotely from Kendal.

#### Safety—travel versus quality

8.3.4 The overwhelming, and sometimes surprising, message we heard was that 'near was safe'. Women wouldn't countenance change and indicated that they would put up with potentially sub-optimal local care rather than 'risk' travelling to a more distant CLU. Often those women's *"expectations were low"* and they would be *"happy to compromise on quality to keep the Barrow unit near"*. One GP said that families would *"rather have a silver service in Barrow than a gold service in a more distant location"*. Although the message is not consistent, it is perceived to be a greater risk for mother and child when distances are great. We realise that most of the research work relates to transfer of women in labour, rather than actual closeness to services<sup>17</sup>, and it was not clear to the assessors on what basis these perceptions and opinions were based.

#### Choice

8.3.5 A full range of choices for women in Cumbria does not exist currently. For many women, although they would have preferred it, home birth is not seen as an option when they live in isolated, remote communities and situations may change during labour requiring access to a CLU.

8.3.6 Midwives reported that many women living in Lancaster see women in Kendal able to access a freestanding MLU and want equity in choice of home birth or MLU. The findings from the literature review have shown that women rated their birth experience and satisfaction with care in a freestanding MLU significantly more positively than women who gave birth in a CLU. However, evidence from qualitative interviews confirmed that they would prefer the reassurance that a CLU is nearby. Their choice is further reduced when they experience cancellation of home birth requests due to lack of availability of midwives.

8.3.7 Women told us that they were being *"pushed towards hospitals"* when they wanted a *"closer to home"* service or home birth with more community based midwives providing one to one care. There was a firm negative response in answer to the direct question "do you provide genuine choice for women in Carlisle?" The lack of availability of epidurals at CIC has continued for nearly 14 years. However there is now an epidural implementation plan which will commence shortly.

#### The impact of deprivation and meeting needs

8.3.8 There are pockets of deprivation in Carlisle, Barrow, Lancaster, and areas near to Whitehaven and parts of the Western Lakes such as Copeland. Evidence was heard about deprived communities living around the coast, long-term unemployment, unhealthy populations, high rates of child poverty, women with high BMI and risky lifestyles that affect access to care and present risks to women and babies.

#### Access and risk

8.3.9 A central component to quality for a population is access to services. North West Ambulance Service (NWAS) provided excellent insight into the current and future risks of moving large numbers of women to distant CLUs given the geographical configuration of the county. Maternity related issues are probably responsible for about 0.5% of the current workload. The assessors were informed by the CCG that NWAS is currently operating beyond capacity at present with not enough ambulances available in Cumbria to cover all emergencies.

8.3.10 The 'hope' that NWAS can react to future increased demand is unrealistic when the current model is unsustainable, and any reconfiguration of service in which transfers of large numbers of patients is involved would create huge additional tensions in service provision. The current skills and competencies of the paramedic staff are limited when it comes to women experiencing complex conditions, travelling in ambulances for a longer period on distant journeys. Any transfers in which the woman was not accompanied by a midwife or other clinical escort would require further training for paramedic staff. This does not only relate to women in labour but for those experiencing early pregnancy problems.

8.3.11 Risk will also be transferred to primary care which is experiencing difficulties in recruitment and retention in GP practices as well as the remaining midwifery services.

8.3.12 The CCG already recognises the importance of the ambulance service and has supplemented the service financially. The data produced by Price Waterhouse Coopers based on the concept of Commissioner Requested Services (CRS), defined services provided by an organisation for which there are no suitable alternative providers, show that these services should be provided even when a Trust is in financial difficulty and suggests a model which is applicable to both ends of the county. They suggested that CLUs at RLI and FGH are likely to be CRS, due to a likely transfer time of above 45 minutes. They modelled maternity on a 45 minute transfer time although the basis for this threshold is not clear. Access difficulties are also compounded by social disadvantage for many women in Cumbria of not having the use of private transport (See Appendix 6).

#### Changing services in anticipation of decisions

8.3.13 There is a strong sense from the wider public that the decision has already been made to 'downgrade' West Cumberland's maternity unit. This was amplified by campaign groups and echoed by the statutory patient and public engagement body, (local HealthWatch) relaying public perceptions that people are losing faith in current services. The senior management team for Northumbria have developed options based on their own experience and have been influenced by other factors including the overall strategy of the merged Trusts, and the assessment team had concerns that this does not fit with the wider consultation on the whole Cumbria solution.

Women from the West Cumbria MSLC gave us a list of key elements that make up a whole systems approach designed around women's needs:

- *"Know your midwife"* one to one and continuity of care
- Safe deliveries
- Choice
- High quality care
- Accessible care
- Retain services in areas of most need ("here in West Cumbria")
- Alongside MLU

## Women's perception of a freestanding MLU<sup>18</sup>

8.3.14 There is experience from other reconfigurations of services that patient behaviour in accessing services does not always meet the expectations of planners, with people choosing a different service or unit than designated. With longer distances to travel, women may choose to delay calling an ambulance as they do not want to travel, resulting in either an unplanned home birth or higher risk delivery which increases the pressure on already stretched services.

## Opinion

8.3.15 A whole systems approach is needed, offering pathways of care and choices for women that meet their needs and desires across the two distinct geographical areas and diverse populations. Choices must include access to and support for home birth and availability of midwifery-led and consultant-led care. Irrespective of place of birth, women reported their need for support, information and high-quality care

<sup>&</sup>lt;sup>18</sup> RCOG Literature Search on size of maternity unit and outcomes (please see appendix 6) RCOG literature Search on distance to maternity unit and safety (please see appendix 6) RCOG literature Search on population behaviour (please see appendix 6)

through the pregnancy, birth and postnatal experience. Dissatisfaction with postnatal care reflected experiences across the country. However, in this geographically remote area with small isolated communities, more emphasis should be placed on community based midwifery and the development of primary care services.

8.4.16 Women and families must be involved in service design. Patient and public engagement activity has taken place in the lead up to consultation and the feedback has been useful in understanding how women use services and what they value. The CCG should use this feedback to support the design of the future configuration and model of care. More direct involvement is still needed to shape the model and address the way women want to use services in the future. The enthusiasm and commitment of many of the women and groups met should be harnessed, for example the members of the newly formed MSLC in West Cumbria. It is important to provide them with clear, evidence-based data and time to discuss its meaning and implications. Making the decision on the model of care and options is not the final task for the CCG. Women and families need to be part of the design for implementation. There is also a significant task to regain the trust of the public across the area regarding the quality and safety of services and to build confidence of staff. Specific engagement and communications approaches need to be built to address this.

#### Additional observations obtained through interview, unique to each provider unit:

Although the assessors tried to structure interviews and collection of data, additional information was forthcoming and is presented in Appendix 7. This combines opinions, usually triangulated, with impressions shared by the assessors, which may have influenced conclusions and recommendations.

#### 8.4 RCOG LITERATURE REVIEW:<sup>18</sup>

The RCOG undertook a literature review and full references can be found in Appendix 6

#### Size of maternity unit and outcomes

8.4.1 Most studies were in the USA or Scandinavia, and definitions of large and small units varied. Hospitals with lower annual numbers of deliveries are associated with:

#### Adverse effects

- increased rates of operative delivery
- higher rates of peri-operative mortality in women with obstetric haemorrhage at caesarean delivery
- higher rates of postpartum haemorrhage

#### Neutral effects

- no difference in rates of chorioamnionitis, endometritis, or wound infection
- no difference in rates of episiotomy
- no difference in risk of uterine rupture

## Beneficial effects

• lower rates of postpartum anaemia

8.4.2 Conflicting data has been reported on the effect of size of unit on rates of severe perineal tears, maternal complications, labour induction, caesarean section and neonatal mortality.

## Distance to nearest maternity unit and safety<sup>18</sup>

8.4.3 Studies were conducted mainly in Europe, and measured either distance or travel time from home to the nearest maternity unit.

8.4.4 Two studies found no overall association between travel time/distance on overall mortality (neonatal mortality and stillbirth), but one found an increased risk of neonatal death. Another found that women living closer to a maternity unit had a higher risk of neonatal mortality, attributed to the location of the unit in deprived areas. Other studies have also shown that increasing distance is associated with increased neonatal mortality, no increase in stillbirth risk, a positive but non-significant gradient between travel time and perinatal mortality.

8.4.5 In complicated pregnancies, women delivering before 32 weeks were less likely to deliver in a level 3 unit if they lived further away, and severe fetal malformations were less likely to be diagnosed prenatally in women living further from a level 3 unit, although neonatal mortality was not associated with distance.

## Population behaviour regarding standalone midwife-led units<sup>18</sup>

8.4.6 Very little information is published about women's responses to the opening of a freestanding midwifery led unit (MLU) or conversion of a CLU to an MLU. The following publications mostly relate to the UK/Ireland.

Before using an MLU:

- Women who were booked, had already delivered or were suitable to deliver at an alongside MLU, and 62.8% would choose to deliver at a freestanding MLU.
- Amongst a remote and rural population, women preferred consultant-led care to midwife-led care. Their preferences for different models of care was associated with the care model they had experienced and their risk status during pregnancy and labour.
- Women have been found not to fully comprehend the opportunities of MLUs, and to be strongly dependent upon obstetricians as main care providers.

## Studies of women who had received care in a freestanding MLU found that:

- They rated their birth experience and satisfaction with care significantly more positively than women who gave birth in a CLU.
- They report a thoroughly positive experience.
- Whilst satisfied with the MLU, they would prefer the consultant-led maternity hospital to be reestablished in the town.
- Women eligible to use a freestanding MLU and who booked there antenatally are significantly more likely to rate their care as good or very good overall than corresponding women who also satisfied these criteria but booked initially at a hospital.

# 9. OPTIONS APPRAISAL

9.1 The panel has drawn up six options for consideration taking into account the needs of the local communities together with the challenges of health care provision as stated clearly in the terms of reference.

#### Local challenges

9.2 Providing quality health services within Cumbria is challenging because of a number of issues including mountainous geography, poor highway and road infrastructure, social isolation, significant deprivation and strong lifelong loyalties to local hospitals. It is difficult to appreciate quite how difficult the road structure is without personal experience.

9.3 Social deprivation has more impact on maternity outcomes than almost any other variable, so a balance must be struck between closing existing services on safety grounds and providing safer services but with the additional risks of long transfers and delays to women receiving those services. Evidence based modelling, an understanding of patient flows and maternity behaviours, and objective analysis of risk (including experiential risk and the impact of anxiety) is required to properly evaluate the options. There was not the capacity, data or skills within the assessment team to carry this out.

9.4 The current provision of services includes four CLUs and two freestanding MLUs. The viability of the two current MLUs in Penrith and Kendal is questionable due to small numbers of women currently using these facilities, but the assessors have presumed that these units will continue to function at least in the short term and therefore have not included them in the options appraisal. However, their sustainability should be reviewed with time, if behaviours and women's attitudes to risk change as a result of the recommended investment in primary and antenatal care and the up-skilling of the midwifery workforce. The recent

reports from the *Birthplace study*<sup>5</sup> and the *King's Fund report*<sup>19</sup> emphasise the importance of considering a range of options, including home birth, MLUs (both alongside and freestanding) and CLU. The assessors approached the options appraisal first and foremost with the needs of the women and their communities in mind but always returned to concepts of the provision of safety and sustainability.

9.5 The options appraisal also considers the training needs for midwives and doctors. A new medical school based at the University of Lancaster offers fresh opportunities for clinical experience and possible subsequent appointment to career opportunities in Cumbria. As the behaviour of trainees is often that they will stay permanently in their area of undergraduate and postgraduate training.

9.6 The training of midwives within Cumbria is based at the University of Cumbria in Carlisle and the subsequent employment rate of these midwives was variable across the county. It is vital that these two organisations work together and are involved at an early stage of planning as they may produce the future midwifery and medical workforce in Cumbria.

# **10. OPTIONS**

#### 10.1 Option 1

Maintaining four CLUs as currently configured. Restructuring medical working practices. Immediate development of alongside MLUs at CIC and RLI Long-term to evaluate the development of an alongside MLU in FGH and WCH Please refer to Appendix 8 for risks and benefits

10.1.1 It was very clear to the assessors that women, the commissioners and the majority of health care staff wish to maintain local maternity CLUs in four sites. This option can only be supported on safety and sustainability grounds if steps are taken to reform the approach to staffing, improve antenatal, intrapartum and postnatal care, address anaesthetic issues and agree sufficient paediatric cover for a special care neonatal unit. This option will require increased investment and active medical recruitment which will be particularly difficult for both rusts to agree without additional commissioner funding as it is attempting to reach financial stability and move out of special measures.

10.1.2 The assessors felt that the provision of a co-located MLU at FGH must be duly considered, in time, in particular to increase midwifery led care and to give the midwives the opportunity to work closely with

 $<sup>^{19}</sup>$  The reconfiguration of clinical services-What is the evidence? The Kings Fund 2014

local women to restore their faith in the midwives and to ensure that the local community would support a MLU. A similar process should occur at WCH if appropriate with time.

10.1.3 The assessors would wish to support the majority view to maintain local services for this community but only if the following requirements can be met:

a) The choice of place of birth and pattern of intrapartum care could be expanded by planning to develop alongside MLUs at CIC and RLI. This would not increase the numbers of deliveries, but ideally there should be some structural separation of the two labour ward facilities (Please see appendix 9 for differences of CLU and MLU). There are physical capacity issues at CIC and RLI so investment in new builds may be substantial.

b) The working practices and job plans of obstetrics and gynaecology staff working in maternity services must be redesigned to provide cross-cover rotation between both units in each Trust but with very different styles of emergency provision in either unit. Consultants in obstetrics and gynaecology should provide 24-hour presence, possibly with a non-specialist trainee at FGH and WCH and a standard three tier non-resident on-call rota at CIC and RLI. A 'hub and spoke' approach to clinical care in maternity should be modelled and tested for feasibility, involving the current consultant body and trainees, to ensure such posts can be sustainably filled. The models of sustainable anaesthetic and paediatric teams must also be tested for feasibility.

c) There must be clear, agreed and resourced patient pathways that have capability and capacity to transfer very high risk patients (such as multiple pregnancy, or placenta praevia) likely to require surgery or additional support, from FGH and WCH to RLI and CIC for onward care.

d) There must be arrangements in place for secondment of consultants providing maternity care on a regular basis as part of revalidation for in-service training at a large tertiary centre in order to maintain appropriate clinical skills.

e) Workforce quality standards and compliance are delivered, monitored and supported in line with *Safer Childbirth*<sup>4</sup>. A gap analysis must be undertaken with regular audits against these standards.

f) Programmes are put in place to up-skill community practitioners (GPs and midwives) in initiatives to reduce the need for consultant delivered care, increase normality and reassure women about safety.

g) There should be defined targets to increase home births and use of the MLU.

h) A project team including an external senior manager, external obstetrician, head of midwifery and patient representatives should be appointed by the CCG and be accountable to them to develop a detailed feasibility report on the cost, viability and risks of proceeding with Option 1 in the long term, including the amount of additional commissioned funding required and whether the model can be supported. If this cannot be demonstrated as a business case, including local views and social deprivation as important weighting factors, then Option 2 should be considered.

The alongside MLU is common to all the options presented and should improve choice and style of service.

Delivery of this option will succeed only if the staffing and quality issues are met. A feasibility review must be conducted by the project team in one year to establish if this is possible. Failure to deliver on the above means proceeding with Option 2a or 2b.

#### 10.2 Option 2a

Develop Two CLUs at RLI and CIC Develop Two MLUs at RLI and CIC Closure of CLUs at WCH and FGH

10.2.1 This is the second favoured option and would be the default position if option 1 is not viable. This option is more likely to provide safe levels of medical cover for women and their babies, but must be balanced against the increased travel times, cost and anxiety for those living in the west of the county to access maternity care. Antenatal care will be provided locally, including high-risk consultant clinics, to minimise travelling except for the birth. Homebirth for low-risk subsequent pregnancies should be encouraged with skilled and confident midwives. The cost and benefits to the Trusts of centralising medical staffing and reducing interventions through improved antenatal care must be balanced against the additional cost and operational pressure on the ambulance service and the need to expand the physical capacity of the CLU (and possibly neonatal unit). This option will require significant public and targeted engagement for the population to understand the reasons for reconfiguration and restore their confidence in midwifery-led childbirth.

#### 10.3 Option 2b

Develop Two CLUs at RLI and CIC Develop Two MLUs at RLI and CIC Convert CLUs at FGH and WCH

10.3.1 Although compared with Option 2a this option increases the availability of skilled local midwifery care, there appeared to be little appetite for a freestanding MLU amongst women or staff. Numbers using the two existing MLUs are static or falling. In the north of the county, the location of a freestanding unit could be at Cockermouth rather than WCH but this would increase capital costs. This option would need significant investment in midwifery training and leadership.

10.3.2 The local perception is that converting a CLU to a MLU will mean a reduction in safety, even though with good antenatal care, informed women and triage there is no evidence to support this perception. We would expect around 300-400 women per year to use the unit, mitigating the need to travel to RLI or CIC and enabling them to remain within their community. This model would still require significant investment in transport infrastructure and expansion of the CLU and neonatal units, at RLI and CIC as well as strong midwifery leadership to encourage midwifery-led care.

The assessors believe that with both options 2a and 2b the maintenance of community-based maternity services at FGH and WCH would be helpful to women. The provision and further development at FGH and WCH of an Early Pregnancy Assessment Unit, scanning, antenatal clinics and day assessment facilities should be evaluated. The new communication methodologies should facilitate this so that community-based staff can obtain immediate advice from the CLU for more complex decisions.

#### 10.4 Option 3

Maintaining Three CLUs at CIC, RLI and WCH Developing alongside MLU at RLI and CIC Closure of FGH and relocation of services to RLI

10.4.1 The assessors understand that much strong and impressive leadership has been invested in maintaining a CLU at FGH. The culture of this hospital, despite the potential ramifications of the Kirkup Report, is strongly committed to resolving some of the challenges. In addition, Barrow is a large

conurbation with significant disadvantage. However, it would seem to the assessors that closing this CLU would not be appropriate.

10.4.2 Although WCH and FGH have slightly different challenges, if there is to be a rationalisation of units then reducing from four to two is more likely to realise the target goals of safety and workforce and will not be seen in the community as a compromise hit for one community.

## 10.5 Option 4

Maintaining Three CLUs at CIC, RLI and FGH Developing alongside MLU at RLI and CIC Closure of WCH and relocation to CIC

10.5.1 The assessors perceived through interviews with staff and patient groups that the decision to close WCH had already been made. The workforce challenges at WCH are significant but closure will create significant disruption for patients. If Option 1 proves to be undeliverable then this option would resolve workforce issues just for WCH. Although FGH and WCH have different internal issues, the challenges of closure for women are the same and closing one may be construed as a serious blow to one community, and not the definitive answer to the fundamental challenge of workforce issues.

10.5.2 Although the assessors appreciate the different internal challenges to both FGH and WCH they believe that closure of one CLU without the other would be a regrettable mistake which will not address all the workforce issues and be seen by the public as a skewing of service provision. If small units are not sustainable as in Option 1 then a degree of centralisation of CLUs must occur which is seen to be equal across Cumbria.

## 10.6 Option 5

#### Centralisation of all services to one unit.

10.6.1 The assessors felt prior to their visit that a unitary provider was likely to be the preferred option, due to the benefits that a 5000 delivery unit would confer on women and their babies. However, the geographically complex configuration in this county renders such an option undeliverable. It is the opinion of the assessors that this option cannot be realistically developed further.

# **11. CONCLUSIONS**

- The community of Cumbria strongly support the continuation of the current provision of maternity care by maintaining four CLUs, with an emphasis on ease of access.
- The deprivation in some areas of Cumbria and North Lancashire reinforces the need to provide services that are convenient to this population, but such services must meet current clinical safety requirements.
- The current working practices of doctors within the four CLUs are not sustainable given the crisis in recruitment and retention and therefore will pose a threat to patient safety if not resolved.
- New and variable ways of working are required so that consultants working across both units in each Trust provide obstetric, paediatric and anaesthetic medical cover that complies with evidence-based standards.
- The workforce safety and quality data, while demonstrating the need to improve in many areas, has highlighted that provision of adequate medical cover in obstetrics, anaesthesia and paediatrics is a major challenge for future safe service provision. In particular, the current inadequate provision of anaesthetic services supporting maternity care is a serious risk to patients and deprives women of standard pain relief services when in labour.
- The recent challenge to maternity provision in this area has allowed development of fine leadership in some areas and a lack of leadership in others.
- Choice of birth arrangements for women is inadequate but can be improved by the gradual development of alongside MLUs.
- The options appraisal suggests that attempts should be made to build on the four CLU concept but through very different working practices for medical specialist staff.
- The geography of the county, the pockets of deprivation and the poor transport infra-structure together make decisions about service configuration very difficult.
- The need to inform and seek community and professional support in any new reconfiguration plans was apparent.

• A long term strategic plan for development of maternity services is required. This plan should increase the competencies of primary care, including community midwifery, to increase normal birth and develop new working arrangements for medical staff. This must include active community engagement and better understanding by the public and healthcare staff of the true safety and access data.

# **12. OVERARCHING PRINCIPLES AND RECOMMENDATIONS**

## 12.1 Whole systems approach

- The CCGs, with NHS England and the Maternity and Neonatal Networks must adopt a whole systems approach, offering women a choice of pathways of care that are safe, accessible and meet their needs and desires across the geographic and socioeconomic diversity of Cumbria's and North Lancashire's population. Women deserve support, information and high quality care through their pregnancy, birth and postnatally. These services must be able to attract and retain quality staff.
- Midwives need to drive the midwifery-led agenda, while supporting all services for women. Greater
  emphasis needs to be placed on normalisation of childbirth with the full spectrum of care including,
  CLUs, MLUs and home birth.

# 12.2 Patient safety

- The current traditional on-call medical modelling used in the four CLUs with hierarchical on-call, is not sustainable, due to problems with medical recruitment, requirements for locum cover and patient safety.
- The provision of safe care will require further team building and leadership between midwives, obstetricians, anaesthetists and paediatricians.
- Consultants and other grades of medical staff must have patient safety as their key priority and
  responsibility, with the collection of outcome data for appraisal and revalidation of their clinical
  competencies. A standardised maternity dashboard is needed across all units that can be reviewed and
  compared easily.
- Similarly, midwives, managers and allied health care professionals must place patient safety as their primary responsibility.

## 12.3 Leadership and cross-professional working

- The two hospital Trusts must demonstrate true integration of clinical and managerial staff and team working across their maternity services between their two units, UHMBT (FGH and RLI) in the south and NCUHT (WCH and CIC) in the north.
- Both Trusts need to invest in developing leadership across all aspects of the maternity service.
- All medical staff providing maternity-related services (obstetricians, anaesthetists and paediatricians) should have job plans that span both hospitals (FGH and RLI in the south and WCH and CIC in the north).
- In addition, through the maternity networks, there needs to be closer communication between the two provider Trusts with consistent maternity safety data collection.
- Maintaining core competencies for clinical staff working in small units should be managed by an
  attachment on a regular basis to a large maternity hospital that covers tertiary care. Such attachments
  should not be observational but should require 'hands-on' cover of the labour ward. This structure
  requires formal design through the maternity network and there will be human resource and
  contractual issues to resolve and must be supported by the CCGs.
- 24-hour consultant-delivered services at the 'spoke hospitals,' (FGH and WCH) should be explored to
  model new working practices to insure that emergency cover in obstetrics, paediatrics and anaesthesia,
  is safe and compliant with current recommendations. In contrast at the 'hub hospital' (RLI and CIC), the
  focus of training should be located with a traditional hierarchical on-call system and consultants acting
  in a non-resident emergency rota.
- There should be a review of the potential of risk-stratifying women for priority as to whether to care for high risk women in the 'spoke' or 'hub' hospital.
- The potential contribution of other health care professionals and general practitioners needs to be explored to provide support to specialists in the smaller units and to re-examine the need to provide more community-based services.

## 12.4 Options

- Removing or downgrading any of the four current consultant led services would create significant
  instability and anxiety within the community and should not be undertaken without one further and
  final attempt to provide safe and sustainable service.
- Alongside MLUs should be developed immediately at CIC and RLI to provide the spectrum of contemporary maternity care and improve choice for the community. Subsequent development of alongside MLUs at FGH and possibly WCH should be considered if Option 1 is achieved but only after a period of service consolidation.
- The preferred option, Option 1, recommends maintaining four CLUs and developing two new MLUs, but working in very different ways to try and improve long term safety through different configurations and working practices of staff.
- If Option 1 is not achieved and patient safety continues to be compromised through non-compliant staffing, then there will be no alternative than to consider reconfiguration of services through Option 2a.
- In Option 2a the CLUs at WCH and FGH should be re-accommodated at CIC and RLI, respectively to try and improve on quality and safety provision. Such a configuration would create significant travel and social disruption for the community but may be an easier option to resolve the staffing crisis.
- The development of two freestanding MLUs in place of two CLUs (Option 2b), while a reasonable option should only be explored further if the community make a firm commitment to support such a development.
- Both Options 2a and 2b should be worked up in parallel with Option 1, in case Option 1 is not viable.
- An outcome decision should be made following further evaluation work in one year, prioritising with Option 1 as the preferred option, Option 2a as second and Option 2b as third.
- Relocating one CLU to a larger hospital in isolation will significantly skew the provision of care across the county and create significant dissatisfaction so the ideal solution of a single unit for the county is impractical and not supported.

## **12.5 Recommendations**

- A project team must be established swiftly and be led by a senior manager, with an external advisory obstetrician, local HOM and patient representatives. This team needs direct access to both CCGs and it is suggested that they report to a nominated governing body member appointed by the two CCGs to lead this project. This group must report in a short time frame (one year) on the viability of Options 1, 2a and 2b.
- The implementation group needs to report on a monthly basis to the CCGs. Its brief needs to consider:
  - o staffing and activity projections for each unit
  - $\circ$  modelling of future demand for services and 10-year activity for Option 1
  - o assessment of deprivation and impact on transport issues
  - o antenatal and neonatal transport modelling
  - o midwifery services development modelling of normal births
  - o paediatric availability or alternative for SCU provision
- A major investment must be made in a communication strategy, including the community, political leaders, and professional stakeholders in all aspects of this work.
- Quality assurance must be on-going with unified maternity dashboards and other quality measures and reported to the Trust Boards and CCGs on a quarterly basis.

# **13.SIGNATURES:**

In formulating and signing this report we confirm that our conclusions and recommendations are based solely on the information provided to us, and on interviews that took place during the assessment visit described. We also certify that we have no prior knowledge of the individuals concerned, and have not worked previously with them. We have no relevant conflicts of interest to declare in respect of these matters.

A.D. Falcow

Dr Anthony Falconer

**Dr** Andrew Leather

Nicholas Wilson

Dr Nicholas Wilson

Mrs Sue Eardley

Rh Rusanc joyan

Dr Romesh Rasanayagam

Ms Joy Kirby

Signature

Ms Jaki Lambert



Mrs Cath Broderick

23 March 2015

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# **14. APPENDIX:**

## **One: Timetable of three day visit**

Interview Schedule:

Face to face Interviews took place over the three days at all hospital locations. The assessment team were

able to experience the rurality and distances between each site. Please note the following were invited to

#### attend interviews, but not everyone was able to attend and others may have attended that are not

listed.

## <u>DAY 1</u>

## Royal Lancaster Infirmary:

- Sascha Wells, Deputy Director of Midwifery
- David Burch, Clinical Lead for Obstetrics and Gynaecology
- Maternity Staff Catrina Hosler, Janis Holroyd
- Paediatrics Stephen Cade, Clinical Lead for Paediatrics RLI
- Anaesthetics Ian Parkinson, Consultant Anaesthetist
- Surgery Christine Bronder, Consultant Surgeon/ Colorectal Cancer Lead
- Janette Mill, Speciality Trainee, Level 1
- Catherine Langley, Speciality Trainee, Level 6
- GP Trainees Dr Sivakumar GPST2 O & G

### Westmorland General Hospital:

- Tina Turner, Divisional General Manager
- Sascha Wells, Deputy Director of Midwifery
- Sarah Anderson, Community Midwifery Manager & Midwifery Team
- Roz Peel, Gynaecology Matron

## Furness General Hospital:

- Owen Galt, Clinical Director
- Sharon Perkins, Maternity Risk Manager
- Paediatrics Kristyna Bohmova/Bhramar Saha, Consultant Paediatricians
- Anaesthetics Gill O'Connell, Associate Specialist/Associate Medical Director FGH
- Surgery Panna Patel, Colorectal Surgeon
- North West Ambulance Service
- Maternity Staff Kath Hampson, Julie Oakes
- Millom Health Action Campaign Group
- Maternity Matters (Patient Group)
- Dr Geoff Jolliffe, GP Lead-Furness Locality
- GP trainees Arfan Sheikh, GP Trainee
- Other trainees Rana Ali, Foundation Year Trainee

## West Cumberland Hospital:

- Mr Mohamed Matar, Clinical Director,
- Anne Musgrave, Head of Midwifery
- Helen Tzabar, Senior Nurse in Gynaecology
- Janet Crewdson, Clinical Midwifery Manager (WCH)
- Chris Bird, Clinical Midwifery Manager (CIC)

- Linda Bell, Maternity Risk/Governance Manager
- Nick McDonaugh, Business Unit Deputy Director
- Gail Naylor, Director of Nursing & Midwifery
- Anaesthetics: Dr Amita Gupta & Dr Fiona Graham
- Paediatrics: Dr Sarah Pennington & Dr Jason Gane
- Surgery: Mr Mike Williams
- ITU: Dr Jeremy Rushmer
- Dr Nabita Rai (trainee O&G)
- Mr Ademola Ajibola (trainee O&G)
- Maternity Services Liaison Committee
- Dr Raluca Rotar, GP Trainee
- Dr Juliet Rhodes, GP Lead Copeland
- Dr Niall McGreevy, GP Lead Allerdale
- Dr Simon Desert, GP Cockermouth
- Dr Celia Heasman, GP Egremont
- Dr Heather Naylor, GP (Distington)
- Dr Helen Horton, GP (Distington)
- Carol Davies, NWAS Sector Manager
- NWAS Staff
- Haissam Moukarram, Consultant O&G
- Dinesh Moga, Consultant O&G
- Andrene Hamilton, Consultant O&G
- Oudai Ali, Consultant O&G
- Louise Cartmell, Midwife
- Lee Gardner, Midwife
- Elaine Heron, Midwife
- Marie Telford, Midwife
- Save Our Hospital Services representatives (Campaign Group)

#### <u>DAY 2</u>

#### **Cumberland Infirmary, Carlisle**

- Gail Naylor, Director of Nursing & Midwifery
- Mr Malcolm Cook, Non-Executive Director
- Dr Debbie Freake, Director of Strategy
- Anaesthetics: Dr Ann James
- Paediatrics: Dr Glyn Jones
- Surgery: Mr Ernest Jehangir
- ITU: Dr Jon Sturman
- Dr Michelle Creed (trainee O&G)
- Dr Louise Carew (trainee O&G)
- Dr Jo Senior (trainee O&G)
- Dr Gareth Waring (trainee O&G)
- Dr Davin Mohadeb (trainee O&G)
- Darrin Southward (Supervisor of Midwives)
- Jane McRitchie (Supervisor of Midwives)
- Elizabeth Hodgson (Supervisor of Midwives)
- Sharon Green (Supervisor of Midwives)
- Denise Lightfoot (Supervisor of Midwives)
- Dr Rose Singleton, GP Trainee
- Dr Sanju Joy, GP Trainee

- Dr Richard Massey, GP Trainee
- Dr Alan Edwards, Deputy GP Lead Carlisle
- Chris Bird, Clinical Midwifery Manager (CIC)
- Paul Whitehead, Clinical Director, Paediatrics
- Ruth O'Dowd- Clinical Director, Anaesthetics
- Nick Strong, BU Director, Surgery
- Deborah Hather, Lead Clinical Midwife
- Liz Leighton, Clinical Risk Midwife
- Andrea Ewing, Lead Midwife
- Darrin Southward, Midwife
- Sue Gowling, Midwife
- Anna McSkeane, Midwife
- VelauthapillaiRavimohan, Consultant O&G
- Nick Hallam, Consultant O&G
- Ajith Wijesiriwardana, Consultant O&G
- Nalini Munjuluri, Consultant O&G
- Sheila Pearson, Consultant O&G

## <u>DAY 3</u>

#### North Cumbria University Hospitals NHS Trust

- Ann Farrar, Chief Executive
- Jeremy Rushmer, Medical Director

#### University Hospitals of Morecambe Bay NHS Foundation Trust (teleconference)

- Jackie Daniel, Chief Executive
- Sue Smith Executive Nurse

#### North West Ambulance Service (teleconference)

- Derek Cartwright, Director of Operations
- Salman Desai, Head of Service Development

#### Healthwatch

• David Blacklock, Chief Executive

#### Health & Overview Scrutiny Committee

- Councillor Rod Wilson, Chair
- Councillor Geoff Garrity, Vice Chair

#### **NHS Lancashire North CCG**

- Andrew Bennett, Chief Officer
- Julia Westaway, Commissioning Manager (via telephone)

#### **NHS Cumbria CCG**

- Dr David Rogers Medical director
- Dr Mandy Boardman- Lead GP Children and Families

- Eleanor Hodgson- Director of Children and Families
- Peter Rooney- Director of Planning and Performance

## Northern Maternity Network (teleconference)

- Dr Stephen Sturgis
- Lynda Dearden

## Telephone calls with:

- Dr Karnad Krishnaprasad, Consultant Anaesthetist University Hospitals of Morecambe Bay Foundation Trust
- Dr Quentin Kingsley, Consultant Anaesthetist, North Cumbria University Hospital NHS Trust

## Maternity Indicators based on Hospital Episode Statistics for Furness General Hospital (1 April 2011 – 31 March 2012)

Indicator	Subset of population	Furness General Hospital rate *	National mean	Mean of top 10% o units *	Mean of bottom 10% of units *
Induction of Jahour rato	P, S, T, C	#N/A	27.5%	38.1%	16.9%
	M, S, T, C	#N/A	21.4%	29.9%	13.5%
Percentage of induced labours resulting	P, S, T, C	#N/A	30.2%	40.3%	20.4%
in emergency caesarean section	M, S, T, C	#N/A	13.2%	22.1%	5.8%
Percentage of spontaneous labours	P, S, T, C	#N/A	11.6%	17.2%	7.0%
resulting in emergency caesarean section	M, S, T, C	#N/A	6.2%	9.2%	2.9%
Elective concernan contion rate	P, S, T, C	5.8%	2.8%	5.0%	1.2%
Elective caesarean section rate	M, S, T, C	16.3%	12.1%	15.0%	7.2%
Percentage of elective caesareans performed before 39 weeks of gestation without clinical indication	S, T	51.8%	30.3%	52.5%	18.0%
	P, S, T, C	20.6%	24.2%	31.8%	16.4%
instrumental delivery rate	M, S, T, C	7.5%	7.5%	11.5%	3.8%
Percentage of instrumental deliveries carried out by vacuum extraction (vacuum : forceps delivery ratio)	S, T, C	57.1%	49.3%	72.1%	24.2%
Percentage of attempted instrumental deliveries resulting in emergency caesarean section	s, t, c	#N/A	3.1%	7.0%	1.1%
Third and fourth degree perineal tear	P, S, T, C	4.8%	4.0%	6.8%	2.0%
deliveries	M, S, T, C	0.3%	1.4%	2.4%	0.6%
Third and fourth degree perineal tear	P, S, T, C	8.8%	6.9%	11.0%	3.0%
rate amongst assisted vaginal deliveries	M, S, T, C	2.0%	2.5%	4.6%	0.4%
Emergency maternal readmission within	S, T, C, V	0.6%	0.8%	1.6%	0.3%
30 days of delivery	S, T, C, CS	1.3%	1.4%	3.4%	0.3%

Footnote: \* after risk adjustment for maternal demographic and clinical risk factors. All indicators are derived for appropriate subsets of all deliveries. P = primiparous women; M = multiparous women; S = singleton deliveries; T = term deliveries; C = cephalic presentation; V = vaginal deliveries; CS = caesarean section deliveries. N/A = not available due to data quality issues.

# Maternity Indicators based on Hospital Episode Statistics for North Cumbria Acute Hospitals <u>NHS Trust</u> (1 April 2011 – 31 March 2012)

Indicator	Subset of population	North Cumbria Acute Hospitals NHS Trust rate *	National mean	Mean of top 10% of units *	Mean of bottom 10% of units *
Induction of Jahour rato	P, S, T, C	28.7%	27.5%	38.1%	16.9%
	M, S, T, C	24.4%	21.4%	29.9%	13.5%
Percentage of induced labours resulting	P, S, T, C	31.8%	30.2%	40.3%	20.4%
in emergency caesarean section	M, S, T, C	8.6%	13.2%	22.1%	5.8%
Percentage of spontaneous labours	P, S, T, C	12.5%	11.6%	17.2%	7.0%
resulting in emergency caesarean section	M, S, T, C	6.5%	6.2%	9.2%	2.9%
Elective caesarean section rate	P, S, T, C	3.4%	2.8%	5.0%	1.2%
	M, S, T, C	15.6%	12.1%	15.0%	7.2%
Percentage of elective caesareans performed before 39 weeks of gestation without clinical indication	S, T	19.7%	30.3%	52.5%	18.0%
Instrumental delivery rate	P, S, T, C	21.6%	24.2%	31.8%	16.4%
instrumental delivery rate	M, S, T, C	4.9%	7.5%	11.5%	3.8%
Percentage of instrumental deliveries carried out by vacuum extraction (vacuum : forceps delivery ratio)	s, t, c	68.2%	49.3%	72.1%	24.2%
Percentage of attempted instrumental deliveries resulting in emergency caesarean section	S, T, C	2.0%	3.1%	7.0%	1.1%
Third and fourth degree perineal tear	P, S, T, C	5.1%	4.0%	6.8%	2.0%
deliveries	M, S, T, C	1.1%	1.4%	2.4%	0.6%
Third and fourth degree perineal tear	P, S, T, C	5.6%	6.9%	11.0%	3.0%
rate amongst assisted vaginal deliveries	M, S, T, C	1.8%	2.5%	4.6%	0.4%
Emergency maternal readmission within	S, T, C, V	0.8%	0.8%	1.6%	0.3%
30 days of delivery	s, T, C, Cs	1.0%	1.4%	3.4%	0.3%

Footnote: \* after risk adjustment for maternal demographic and clinical risk factors. All indicators are derived for appropriate subsets of all deliveries. P = primiparous women; M = multiparous women; S = singleton deliveries; T = term deliveries; C = cephalic presentation; V = vaginal deliveries; CS = caesarean section deliveries. N/A = not available due to data quality issues.

## <u>Maternity Indicators based on Hospital Episode Statistics for Royal Lancaster</u> <u>Infirmary</u> (1 April 2011 – 31 March 2012)

Indicator	Subset of population	Royal Lancaster Infirmary rate *	National mean	Mean of Mean or top 10% of bottom units * 10% of units *	n
Induction of Jahour rate	P, S, T, C	#N/A	27.5%	38.1% 16.9%	6
	M, S, T, C	#N/A	21.4%	29.9% 13.5%	6
Percentage of induced labours resulting	P, S, T, C	#N/A	30.2%	40.3% 20.4%	6
in emergency caesarean section	M, S, T, C	#N/A	13.2%	22.1% 5.8%	)
Percentage of spontaneous labours	P, S, T, C	#N/A	11.6%	17.2% 7.0%	)
resulting in emergency caesarean section	M, S, T, C	#N/A	6.2%	9.2% 2.9%	)
	P, S, T, C	2.4%	2.8%	5.0% 1.2%	)
Elective caesarean section rate	M, S, T, C	14.2%	12.1%	15.0% 7.2%	)
Percentage of elective caesareans performed before 39 weeks of gestation without clinical indication	S, T	39.3%	30.3%	52.5% 18.0%	6
	P, S, T, C	32.3%	24.2%	31.8% 16.4%	6
instrumental delivery rate	M, S, T, C	10.3%	7.5%	11.5% 3.8%	)
Percentage of instrumental deliveries carried out by vacuum extraction (vacuum : forceps delivery ratio)	s, t, c	38.3%	49.3%	72.1% 24.2%	6
Percentage of attempted instrumental deliveries resulting in emergency caesarean section	s, t, c	#N/A	3.1%	7.0% 1.1%	
Third and fourth degree perineal tear	P, S, T, C	7.1%	4.0%	6.8% 2.0%	)
deliveries	M, S, T, C	2.1%	1.4%	2.4% 0.6%	)
Third and fourth degree perineal tear	P, S, T, C	9.5%	6.9%	11.0% 3.0%	
rate amongst assisted vaginal deliveries	M, S, T, C	0.7%	2.5%	4.6% 0.4%	)
Emergency maternal readmission within	S, T, C, V	0.3%	0.8%	1.6% 0.3%	)
30 days of delivery	s, T, C, CS	1.7%	1.4%	3.4% 0.3%	

Footnote: \* after risk adjustment for maternal demographic and clinical risk factors. All indicators are derived for appropriate subsets of all deliveries. P = primiparous women; M = multiparous women; S = singleton deliveries; T = term deliveries; C = cephalic presentation; V = vaginal deliveries; CS = caesarean section deliveries. N/A = not available due to data quality issues.
### Three: Documents and data obtained:

- Draft Terms of Reference
- Maternity in Cumbria
- Strategic Plans in Cumbria and Lancashire North
- Better Care Together Summary (Lancashire North and South Cumbria)
- Together for a Healthier Future Summary (North Cumbria)
- Obstetrics and Gynaecology Data Pack
- Commissioner Requested Services Analysis
- Public and Patient Engagement
- Better Care Together (Morecambe Bay area) Engagement Presentation sections
- Together for a Healthier Future (North Cumbria area) Engagement Report
- Information from the NHS Trusts
- University Hospitals of Morecambe Bay NHS FT Maternity Brief
- North Cumbria University Hospitals NHS Trust Service Background
- Previous Reviews Dr. Maggie Blott 2006
- Obstetric and Midwifery Service Review (North Cumbria only)
- North Cumbria University Hospital NHS Trust Strategic High Risk Report Obstetrics and Gynaecology Services
- Recent Events to Inform our Decision Making
- Maternity New Life Executive Summary and Journal
- CQC reports from UHMBT and NCUHT
- Never Events
- Maternity Transfer data
- Cumbria Neonatal Transfers
- Serious Incident Report WCH
- NCUHT Draft Clinical Options Appraisal Report 2014
- Guide Wire Never Events Report 2014
- NCUHT External Review of Anaesthetic Service 2014
- NCUHT Report by FT McAuley (Consultant Anaesthetist) for two never events 2012-13
- NCUHT-Report to the Safety & Quality Committee 13/05/2014
- Previous neonatal and paediatric reviews.

# Four: Specific unit Data

#### West Cumberland Hospital: Data available from January-November 2014

- The birth numbers were green or orange every month during 2014.
- The induction of labour rate was 18-26% and consistently red.
- The LSCS rate was 25-34.5% with 25 category 1 and 107 category 2- there were 6 in category 1 breaching 30 min and 10 in category 2 breaching 45 min
- The ITU admission rate for mothers was 6, although there is no explanation for the reason
- The PPH rate of blood loss of greater than 1.5 litres was in the red every month other than two, from 1.0 to 9.9% this requires explanation, given their target was set at 3%
- Unexpected admission of a term baby to NNIC was between 2 to 6%, with a target of less than 2%
- Only three patient complaints are recorded
- The rate of third and fourth degree tears was in the green or orange for the majority of data analysis
- Breast feeding rates were low and constantly red

#### Cumberland Infirmary: Data available from January to November 2014

- The birth numbers were red for three months, with a threshold of 153 during 2014
- The induction of labour rate was 20-31% and consistently red (threshold different to WCH at 20%).
- The LSCS rate was 21 -36% and always red with 40 category 1 and 107 category 2- the were no records of timings or possible delays
- The ITU admission rate for mothers was 1, although there is no explanation for the reason
- The PPH rate of blood loss of greater than 1.5 litres was in the red all months except two from 2.3-3.6%. This requires explanation, given their target was set at 3%
- Unexpected admission of a term baby to NNIC unit was very high from unrecorded to 9%, with a target of less than 2%
- Only three patient complaints were recorded
- For five months the rate of third and fourth degree tears were red
- Breast feeding rates were good

#### Furness General Hospital: Submitted data from June to October2014

- The birth numbers were below goal in three months and above alert in one month
- The LSCS rate was between 30 and 36%, with an emergency LSCS rate of between 17-23%. No recording of category of CS
- The ITU admission rate for mothers was not recorded
- The PPH rate of blood loss of >1.5 litres was in the green every month and included only one woman
- Unexpected admission of a term baby to NNIC unit was not available
- There is no record of the complaints
- The rate of third and fourth degree tears was between 0 and two per month and green throughout

#### Royal Lancaster Infirmary- submitted data from June to October 2014

- The births per month were above goal in every month and above alert in one month
- The LSCS rate was between 25 and 31% with an emergency C/S rate of 9-14%
- The ITU admission rate was not recorded
- The PPH rate of greater than 1500 ml was between 0 and two per month
- Unexpected admission of term babies to NNIC not recorded
- 3rd and 4th degree tears not recorded

# Five: Summary of Key messages from CQC Reports from 2014 with emphasis on maternity provision

#### **Furness General Hospital:**

The hospital was rated against the RAG system and given green for safety, effectiveness, caring and cleanliness and amber for responsiveness and leadership. The feedback from patients and families about the quality of care was good and the needs of women were addressed. Both maternity and gynaecology were felt to be safe services although some improvements were needed. It was suggested that the hospital continue to monitor the safety and quality of the provision at the hospital using a wider range of information relating to performance, incident reporting, workforce and 'lessons learned'. There was a need to investigate the high caesarean section rate. The lack of cohesion between the two hospitals needed to be addressed to improve joint working.

#### **Royal Lancaster Infirmary:**

The hospital was rated against the RAG system and given green for safety, effectiveness, caring and cleanliness and amber for responsiveness and leadership. The feedback from patients and families about the quality of care was good and the needs of women were addressed. Both maternity and gynaecology were felt to be safe services although some improvements were needed. It was suggested that the hospital continue to monitor the safety and quality of the provision at the hospital using a wider range of information relating to performance, incident reporting, workforce and 'lessons learned'. There was a need to improve the maternity services to better meet the needs of women using the service. The current lack of a future strategy for maternity services combined with the work done to meet regulatory requirements gives the impression that the service is reactive.

#### West Cumberland Hospital:

The hospital was rated against the RAG system and given amber for safety, responsiveness, and effectiveness and green for caring and leadership with room for improvement overall. The feedback from patients and families about the quality of care was good and the needs of women were addressed. The service had identified its own risks and was monitoring its own performance against national and local maternity indicators. However, the CQC review found that the risks identified were still in place and sufficient actions to mitigate them had not yet been implemented. The obstetrics and gynaecology service accounted for 29% of all incidents reported across the Trust. There was a need to investigate the high caesarean section rate. They did not find evidence of a clear strategy or plan to reduce the number of caesarean sections.

There was a lack of dedicated medical staff cover, a dedicated second theatre, pressure on space and lack of compliance with key NICE guidance, which impacted on the service's ability to respond in a timely manner and deliver a safe and effective service. The service had the standard ratio of one midwife to 28 hospital births. There had been a review of midwifery services and the introduction of a midwifery governance lead had improved the approach to governance and monitoring of clinical practice. Although the specialist midwife roles had been welcomed, the clinical lead roles and business unit manager roles were not yet fully embedded. This meant that staff were not clear about roles and responsibilities. The midwifery staff felt well-led, but there was a lack of capacity in medical leadership and no evidence of an articulated strategic vision for the future of maternity and family planning.

#### **Cumberland Infirmary, Carlisle**

The hospital was rated against the RAG system and given amber for safety, effectiveness, responsiveness and leadership and green for caring. The feedback from patients and families about the quality of care was good and the needs of women were addressed. The service had identified its own risks and was monitoring its own performance against national and local maternity indicators. However, the CQC review found that the risks identified were still in place and sufficient actions to mitigate them had not yet been implemented. The obstetrics and gynaecology service accounted for 29% of all incidents reported across the Trust.

The service did not provide a key option for pain relief as identified in the NICE quality statement (QS60) which related to induction of labour. There was a need to investigate the high caesarean section rate and define an appropriate strategy to reduce this. There was a lack of dedicated medical staff cover, a dedicated second theatre, pressure on space and lack of compliance with key NICE guidance, which impacted on the service's ability to respond in a timely manner and deliver a safe and effective service. The service had the standard ratio of one midwife to 28 patient hospital births. It had undergone a review of midwifery service and the introduction of a midwifery governance lead had improved the approach to governance and monitoring of clinical practice. The specialist midwife roles had been welcomed but staff felt that the roles were not yet fully embedded and did not fully understand the roles of the clinical leads and the business manager. This had led to some confusion in regards to clear identification of roles and responsibilities. The midwifery staff felt well led. However there was a lack of capacity in medical leadership and no evidence of an articulated strategic vision for the future of maternity and family planning services at the Cumberland Infirmary, Carlisle.

#### **Six: RCOG Literature Reviews**

#### 1. Frequency of exposure to complex cases and Outcomes:

Authors: Clapp MA; Melamed A; Robinson JN; Shah N; Little SE.

Title: Obstetrician volume as a potentially modifiable risk factor for cesarean delivery.

Source: Obstetrics & Gynecology. 124(4):697-703, 2014 Oct.

Holdings: Some issues of this journal are held in RCOG Library

Abstract: OBJECTIVE: To examine the relationship between an obstetrician's delivery volume and a patient's risk for cesarean delivery. METHODS: This retrospective cohort study examined patient-level and obstetrician-level data between 2000 and 2012 at a large academic hospital. All laboring patients who delivered viable, liveborn, singleton newborns (N=58,328) were included. We measured the association of delivery volume and cesarean delivery using a multivariate logistic regression. We also assessed the association of volume by calculating adjusted cesarean delivery rates using the least squares means method. These analyses were performed on the subset of nulliparous patients with term, singleton, vertexpresenting fetuses. In addition, the association of obstetrician experience was compared against delivery volume. RESULTS: There was a twofold increase in the odds of cesarean delivery for patients whose obstetricians performed fewer than the median (60) number of deliveries per year (quartile 1: odds ratio 2.00, 95% confidence interval 1.68-2.38; quartile 2: odds ratio 2.73, 95% CI 2.40-3.11) as compared with quartile 4. The adjusted cesarean delivery rate decreased from 18.2% to 9.2% from the highest to lowest volume guartile (P<.001). Compared with the volume effects, an obstetrician's experience had a smaller effect on a patient's risk of cesarean delivery. CONCLUSION: Patients delivered by obstetricians with low delivery volume are at significantly increased risk for cesarean delivery after controlling for patient and obstetrician characteristics. In contrast, obstetrician experience had a less significant effect. These findings may prompt discussions regarding the role of volume in credentialing and practice models that direct patients to obstetricians with high delivery volume. LEVEL OF EVIDENCE: II.

Authors: Wright JD; Herzog TJ; Shah M; Bonanno C; Lewin SN; Cleary K; Simpson LL; Gaddipati S; Sun X; D'Alton ME; Devine P.
 Title: Regionalization of care for obstetric hemorrhage and its effect on maternal mortality.
 Source: Obstetrics & Gynecology. 115(6):1194-200, 2010 Jun.
 Holdings: Some issues of this journal are held in RCOG Library
 OBJECTIVE: To examine factors that influence the morbidity and mortality of peripartum

hysterectomy and analyze the effect of hospital volume on maternal mortality. METHODS: We examined women who underwent peripartum hysterectomy at the time of cesarean delivery in a quality and resource utilization database. Procedure-associated intraoperative, perioperative, and postoperative medical complications, length of stay, intensive care unit use, and maternal mortality were analyzed. Hospitals were stratified into tertiles based on procedure volume and complications and compared using adjusted generalized estimating equations. Results are reported as odds ratios. RESULTS: Maternal mortality among the 2,209 women who underwent peripartum hysterectomy was 1.2%. After adjusting for other clinical and demographic factors, perioperative mortality was 71% (odds ratio 0.29, 95% confidence interval 0.10-0.88) lower in women who underwent operation at high-volume hospitals compared with those treated at lowvolume facilities. Hospital volume had no effect on the rates of intraoperative injuries, medical complications, length of stay, or transfusion. In contrast, compared with women treated at low-volume centers, patients who underwent operation at high-volume hospitals had a lower incidence of perioperative surgical complications (odds ratio 0.66, 95% confidence interval 0.47-0.93) and a lower rate of intensive care unit usage (odds ratio 0.53, 95% confidence interval 0.34-0.83). CONCLUSION: Peripartum hysterectomy is associated with substantial morbidity and mortality. Maternal mortality is lower when the procedure is performed in high-volume hospital settings. LEVEL OF EVIDENCE: II.

Miller KJ, Couchie C, Ehman W, Graves L, Grzybowski S, Medves J. Rural maternity care. SOGC JOINT POSITION PAPER J Obstet Gynaecol Can. 2012 Oct;34(10):984-1000. http://sogc.org/wp-content/uploads/2013/01/gui282PP1210E\_000.pdf

Society of Obstetricians and Gynaecologists of Canada; College of Family Physicians of Canada; Society of Rural Physicians of Canada.

Number of births to maintain competence.

Can Fam Physician. 2002 Apr;48:751, 758.

http://sogc.org/wp-content/uploads/2013/01/113E-JPS-April2002.pdf

Improved maternal outcomes with longer physician experience, using years as a surrogate for number of procedures performed:

Epstein AJ, Srinivas SK, Nicholson S, Herrin J, Asch DA.

Association between physicians' experience after training and maternal obstetrical outcomes: cohort study.

BMJ. 2013 Mar 28;346:f1596. doi: 10.1136/bmj.f1596. Full text: <u>http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3610558/</u>

Volume and outcomes (not specific to Maternity and Obstetrics)

Amato L, Colais P, Davoli M, Ferroni E, Fusco D, Minozzi S, Moirano F, Sciattella P, Vecchi S, Ventura M, Perucci CA.

# [Volume and health outcomes: evidence from systematic reviews and from evaluation of Italian hospital data].

Epidemiol Prev. 2013 Mar-Jun;37(2-3 Suppl 2):1-100.

The article is in Italian, but there is a long abstract at <u>http://www.ncbi.nlm.nih.gov/pubmed/23851286</u> and extracts from this are:

Evidence of a positive association between volumes and intrahospital/ 30-day mortality was demonstrated for 26 clinical areas (includes neonatal intensive care). Due to a lack of evidence, it was not possible to draw firm conclusion for 10 clinical areas ...

Halm EA, Lee C, Chassin MR.

**Is volume related to outcome in health care?** A systematic review and methodologic critique of the literature.

Ann Intern Med. 2002 Sep 17;137(6):511-20. CONCLUSIONS:

High volume is associated with better outcomes across a wide range of procedures and conditions, but the magnitude of the association varies greatly.

# 2. Size of maternity unit and outcomes: Summary

Most studies were in USA or Scandinavia, and definitions of large and small units varied.

Hospitals with lower annual numbers of deliveries are associated with:

Adverse effects

- increased rates of operative delivery (5)
- higher rates of peri-operative mortality in women with obstetric haemorrhage at caesarean delivery(10)
- higher rates of postpartum haemorrhage (1)
- longer length of stay after maternal complications (1)
- higher overall approved rates for compensation claims for obstetric injuries (4)
- increased rates of birth asphyxia (6)
- higher rates of severe neonatal injuries (8)

- increased risk of perinatal death due to uterine rupture (15)
- higher rates of adverse neonatal outcomes in term breech births (12)

Neutral effects

- no difference in rates of chorioamnionitis, endometritis, or wound infection (1)
- no difference in rates of episiotomy (5)
- no difference in risk of uterine rupture (15)

**Beneficial effects** 

• lower rates of postpartum anaemia (14)

Conflicting data has been reported on the effect of size of unit on rates of:

- severe perineal tears (1,3,7)
- maternal complications (7,9)
- labour induction (2,5,11)
- caesarean section (2,5)
- neonatal mortality (13, 16-18)

Two studies note significant inter-hospital intervention or adverse outcome rates unrelated to hospital volume. (3,5)

#### References

- Snowden JM. Cheng YW. Emeis CL. et al. The impact of hospital obstetric volume on maternal outcomes in term, non-low-birthweight pregnancies. American Journal of Obstetrics and Gynecology. 25 September 2014 Online version ahead of print.
- Womack LS. Sappenfield WM. Clark CL. Hill WC. Yelverton RW. Curran JS. Detman LA. Bettegowda VR. Maternal and hospital characteristics of non-medically indicated deliveries prior to 39 weeks. Maternal & Child Health Journal. 18(8):1893-904, 2014 Oct.
- 3. Pyykonen A. Gissler M. Jakobsson M. Lehtonen L. Tapper AM. The rate of obstetric anal sphincter injuries in Finnish obstetric units as a patient safety indicator. European Journal of Obstetrics, Gynecology, & Reproductive Biology. 169(1):33-8, 2013 Jul.
- 4. Milland M. Christoffersen JK. Hedegaard M. The size of the labor wards: is bigger better when it comes to patient safety?. ActaObstetricia et GynecologicaScandinavica. 92(11):1271-6, 2013 Nov.
- 5. Coulm B. Le Ray C. Lelong N. Drewniak N. Zeitlin J. Blondel B. Obstetric interventions for low-risk pregnant women in France: do maternity unit characteristics make a difference?. Birth. 39(3):183-91, 2012 Sep.
- 6. Snowden JM. Cheng YW. Kontgis CP. Caughey AB. The association between hospital obstetric volume and perinatal outcomes in California. American Journal of Obstetrics & Gynecology. 207(6):478.e1-7, 2012 Dec.
- Kyser KL. Lu X. Santillan DA. Santillan MK. Hunter SK. Cahill AG. Cram P. The association between hospital obstetrical volume and maternal postpartum complications. American Journal of Obstetrics & Gynecology. 207(1):42.e1-17, 2012 Jul.
- Johansen LT. Oian P. Neonatal deaths and injuries. Tidsskrift for Den Norske Laegeforening. 131(24):2465-8, 2011 Dec 13.
- 9. Janakiraman V. Lazar J. Joynt KE. Jha AK. Hospital volume, provider volume, and complications after childbirth in U.S. hospitals. Obstetrics & Gynecology. 118(3):521-7, 2011 Sep.
- Wright JD. Herzog TJ. Shah M. Bonanno C. Lewin SN. Cleary K. Simpson LL. Gaddipati S. Sun X. D'Alton ME. Devine P. Regionalization of care for obstetric hemorrhage and its effect on maternal mortality. Obstetrics & Gynecology. 115(6):1194-200, 2010 Jun.
- 11. Lydon-Rochelle MT. Cardenas V. Nelson JC. Holt VL. Gardella C. Easterling TR. Induction of labor in the absence of standard medical indications: incidence and correlates. Medical Care. 45(6):505-12, 2007 Jun.

- 12. Hoehner C. Kelsey A. El-Beltagy N. Artal R. Leet T. Cesarean section in term breech presentations: do rates of adverse neonatal outcomes differ by hospital birth volume?. Journal of Perinatal Medicine. 34(3):196-202, 2006.
- 13. Tracy SK. Sullivan E. Dahlen H. Black D. Wang YA. Tracy MB. Does size matter? A population-based study of birth in lower volume maternity hospitals for low risk women. BJOG: An International Journal of Obstetrics & Gynaecology. 113(1):86-96, 2006 Jan.
- Simoes E. Kunz S. Bosing-Schwenkglenks M. Schmahl FW. [Maternal postpartum anaemia--tendencies and variability, considering different hospital categories--research on the basis of Perinatology in Baden-Wurttemberg]. [German] Zeitschrift fur Geburtshilfe und Neonatologie. 208(5):184-9, 2004 Oct.
- Smith GC. Pell JP. Pasupathy D. Dobbie R. Factors predisposing to perinatal death related to uterine rupture during attempted vaginal birth after caesarean section: retrospective cohort study. BMJ. 329(7462):375-77, 2004 Aug 14.
- Heller G. Schnell R. Richardson DK. Misselwitz B. Schmidt S. [Assessing the impact of delivery unit size on neonatal survival: estimation of potentially avoidable deaths in Hessen, Germany, 1990-2000]. [German] Deutsche MedizinischeWochenschrift. 128(13):657-62, 2003 Mar 28.
- 17. Heller G. Richardson DK. Schnell R. Misselwitz B. Kunzel W. Schmidt S. Are we regionalized enough? Earlyneonatal deaths in low-risk births by the size of delivery units in Hesse, Germany 1990-1999. International Journal of Epidemiology. 31(5):1061-8, 2002 Oct. http://ije.oxfordjournals.org/content/31/5/1061.full
- Moster D. Lie RT. Markestad T. Neonatal mortality rates in communities with small maternity units compared with those having larger maternity units. BJOG: An International Journal of Obstetrics & Gynaecology. 108(9):904-9, 2001 Sep.

# 3. Distance to nearest maternity unit and safety: Summary

Studies were conducted mainly in Europe, and measured either distance or travel time from home to nearest maternity unit.

Two studies found no overall association between travel time/distance on overall mortality (neonatal mortality and stillbirth), but one found an increased risk of neonatal death (1) and the other found that women living closer to a maternity unit had a higher risk of neonatal mortality (2), attributed to the location of the unit in deprived areas.

Other studies have also shown increasing distance is associated with:

- increased neonatal mortality (3,9),
- no increase in stillbirth risk (4)
- a positive but non-significant gradient between travel time and perinatal mortality (6)
- an increase in prenatal mortality in rural areas (8)
- increased risks of fetal heart rate anomalies, meconium-stained amniotic fluid, and pregnancy hospitalizations (6)
- increased risk of out-of-hospital births (6, 7)
- increased adverse neonatal outcomes (mortality, Apgar <4 and/or admission to a neonatal intensive care unit (8,9)
- increased induction rates in rural women who have to travel for care (10)
- increased maternal mortality (5)

In complicated pregnancies, women delivering before 32 weeks were less likely to deliver in a level III unit if they lived further away (11), and severe fetal malformations were less likely to be diagnosed prenatally in women living further from a level III centre, although neonatal mortality was not associated with distance (12).

# References

- Paranjothy S, Watkins WJ, Rolfe K, Adappa R, Gong Y, Dunstan F, Kotecha S. Perinatal outcomes and travel time from home to hospital: Welsh data from 1995 to 2009 ActaPaediatr. 2014 Dec;103(12):e522-7. doi: 10.1111/apa.12800. Epub 2014 Oct 7.
- Pilkington H, Blondel B, Drewniak N, Zeitlin J. Where does distance matter? Distance to the closest maternity unit and risk of foetal and neonatal mortality in France European Journal of Public Health. 24(6):904-909, December 2014.

http://eurpub.oxfordjournals.org/content/early/2014/01/01/eurpub.ckt207.full.pdf+html

- 3. Aoshima K. Kawaguchi H. Kawahara K. Neonatal mortality rate reduction by improving geographic accessibility to perinatal care centers in Japan. Journal of Medical & Dental Sciences. 58(2):29-40, 2011.
- Parker L. Dickinson HO. Morton-Jones T. Proximity to maternity services and stillbirth risk. Archives of Disease in Childhood Fetal & Neonatal Edition. 82(2):F167-8, 2000 Mar. <u>http://fn.bmj.com/content/82/2/F167.full.pdf+html</u>
- Engjom HM. Morken NH. Norheim OF. Klungsoyr K. Availability and access in modern obstetric care: a retrospective population-based study. BJOG: An International Journal of Obstetrics & Gynaecology. 121(3):290-9, 2014 Feb.
- Combier E. Charreire H. Le Vaillant M. Michaut F. Ferdynus C. Amat-Roze JM. Gouyon JB. Quantin C. Zeitlin J. Perinatal health inequalities and accessibility of maternity services in a rural French region: closing maternity units in Burgundy. Health & Place. 24:225-33, 2013 Nov.
- 7. Blondel B. Drewniak N. Pilkington H. Zeitlin J. Out-of-hospital births and the supply of maternity units in France. Health & Place. 17(5):1170-3, 2011 Sep.
- 8. Grzybowski S. Stoll K. Kornelsen J. Distance matters: a population based study examining access to maternity services for rural women. BMC Health Services Research. 11:147, 2011.
- Ravelli AC, Jager KJ, de Groot MH, Erwich JJ, Rijninks-van Driel GC, Tromp M, Eskes M, Abu-Hanna A, Mol BW. Travel time from home to hospital and adverse perinatal outcomes in women at term in the Netherlands BJOG. 2011 Mar;118(4):457-65. doi: 10.1111/j.1471-0528.2010.02816.x. Epub 2010 Dec 8. http://onlinelibrary.wiley.com/doi/10.1111/j.1471-0528.2010.02816.x/pdf
- Kornelsen J. Moola S. Grzybowski S. Does distance matter? Increased induction rates for rural women who have to travel for intrapartum care. Journal of Obstetrics & Gynaecology Canada: JOGC. 31(1):21-7, 2009 Jan.
- Pilkington H. Blondel B. Papiernik E. Cuttini M. Charreire H. Maier RF. Petrou S. Combier E. Kunzel W. Breart G. Zeitlin J. MOSAIC group. Distribution of maternity units and spatial access to specialised care for women delivering before 32 weeks of gestation in Europe. Health & Place. 16(3):531-8, 2010 May.
- 12. Pasquier JC. Morelle M. Bagouet S. et al. Effects of residential distance to hospitals with neonatal surgery care on prenatal management and outcome of pregnancies with severe fetal malformations. Ultrasound in Obstetrics and Gynecology. vol 29, no 3, March 2007, pp 271-275.

#### Population behaviour regarding standalone midwife-led units: Summary

Very little information is published about women's response to the opening of a standalone midwife-led unit (MLU) or conversion of a consultant-led unit to an MLU. The following publications mostly relate to the UK/Ireland.

# 4.Before using an MLU:

• Women who were booked, had already delivered or were suitable to deliver at an alongside MLU, 62.8% would choose to deliver at a standalone MLU (1).

- Amongst a remote and rural population, women preferred consultant-led care to midwife-led care. Their preferences for different models of care was associated with the care model they had experienced and their risk status during pregnancy and labour. (2)
- Women have been found not to fully comprehend the opportunities of MLUs, and to be strongly dependent upon obstetricians as main care providers. (3)

# Studies of women who had received care in a standalone MLU found that:

- They rated their birth experience and satisfaction with care significantly more positively than women who gave birth in an obstetric unit. (4)
- They report a thoroughly positive experience (5)
- whilst satisfied with the Midwife-managed unit, they would prefer the consultant-led maternity hospital to be re-established in the town (6)
- Women eligible to use a freestanding MLU and who booked there antenatally are significantly more likely to rate their care as good or very good overall than corresponding women who also satisfied these criteria but booked initially at a hospital.(7)

# References

- 1. Rogers C. Harman J. Selo-Ojeme D. Perceptions of birth in a stand-alone centre compared to other options. British Journal of Midwifery. vol 19, no 4, April 2011, pp 237-244.
- Pitchforth E. Watson V. Tucker J. Ryan M. van Teijlingen E. Farmer J. Ireland J. Thomson E. Kiger A. Bryers H. Models of intrapartum care and women's trade-offs in remote and rural Scotland: a mixedmethods study. BJOG: An International Journal of Obstetrics & Gynaecology. 115(5):560-9, 2008 Apr. http://onlinelibrary.wiley.com/doi/10.1111/j.1471-0528.2007.01516.x/full
- An evaluation of midwifery-led care in the Health Service Executive North Eastern Area. The report of the MidU study. Health Service Executive [Ireland] <u>https://nursing-</u> <u>midwifery.tcd.ie/assets/publications/pdf/midu-report.pdf</u>
- 4. Overgaard C. Fenger-Gron M. Sandall J. The impact of birthplace on women's birth experiences and perceptions of care. Social Science & Medicine. 74(7):973-81, 2012 Apr.
- 5. McNelis M. Women's experiences of care during labour in a midwifery-led unit in the Republic of Ireland. British Journal of Midwifery. vol 21, no 9, September 2013, pp 622-624, 626-631.
- 6. Watts K. Fraser DM. Munir F. The impact of the establishment of a midwife managed unit on women in a rural setting in England. Midwifery. vol 19, no 2, June 2003, pp 106-112.
- 7. Macfarlane AJ. Rocca-Ihenacho L. Turner LR. et al. Survey of women's experiences of care in a new freestanding midwifery unit in an inner city area of London, England 1: Methods and women's overall ratings of care. Midwifery. vol 30, no 9, September 2014, pp 998-1008.

#### Seven: Additional data from Interviews and Observations

#### **Royal Lancaster Infirmary**

The Royal Lancaster Infirmary is a small unit with eight obstetric consultants who are able to rehearse emergency scenarios (skills and drills). 40 hours presence on the labour ward is achieved. There was evidence of clear patient pathways for the management of premature infants, with transfer in of mothers below 32 weeks from Furness General Hospital. Good links were apparent with the level three neonatal intensive care units in Preston and Manchester. Midwives are supportive of the paediatric structure although there is some reluctance from paediatricians to devolve new-born 'baby checks' to midwives which can result in delays to going home and missed opportunities for midwife development. New-born baby checks for home births are undertaken by General Practitioners.

There was an issue with the Trust not offering employment opportunities to their 'own' student midwives creating further tensions with retention. Such decisions were related to the perceived quality of these students on graduation.

There is no clear picture of strong leadership to achieve midwifery led care and no sense of wanting to provide it outside of the unit at Kendal which was perceived to be offering a quality choice for women. It must be noted that there has been a recent installation of a birthing pool in 2012 at RLI. There were difficulties in maintaining a 'home birth service' due to large geographical area of cover. There is no sense of cross bay working across both units within the one Trust in obstetrics and anaesthetics. For paediatrics/neonatal care the only standards cited in the 'Better Care Together' document are the obstetric standards, although there is a recognition of the importance of the neonatal network and the requirement that any reconfiguration should not result in the loss of any neonatal provision.

#### Westmorland Hospital (MLU)

There was evidence of a defined triage for patient selection for place of birth although there had been a fall in delivery numbers recently from 300 to 190. The transfer rate of women in labour to Royal Lancaster Infirmary was 40%.

There were clear protocols for neonatal resuscitation and transfer to CLUs and subsequent neonatal care Many of the midwives are certified to perform new-born baby checks. Overall the midwifery staff are confident in the maintenance of their own clinical skills through working within the community. There was a stable workforce with evidence of a good working environment and retention of midwives. There was an anxiety that workforce pressure at Furness General Hospital will impact on 'out of hours cover' with subsequent challenges to attractiveness of the unit to women. It is envisaged that the presence of a trained midwife working the night shift will be replaced by a midwife on call and that may be perceived to be less secure for patients. However up to 40% of working time can be spent travelling to attend to women in the community.

#### **Furness General Hospital**

Despite the pressures created by of the current enquires (Kirkup Review) and long term sickness, there was evidence of strong midwifery leadership with a positive culture for audit and incident reporting and positive engagement with service users. Professional links were being developed with other Trusts including Blackpool and Coventry & Warwickshire. The 'stillborn safety bundle' was used as national pilot and the maternity safety thermometer was an additional safety tool used at this hospital. There was also very strong support from primary care to maintain and improve local maternity services with the CLU.

The paediatricians have developed a two-tier service model based on ten consultants, resident first on call from 9pm-9am and second on-call from home with no middle grade. Whilst they appear to be recruiting to these opportunities the clinicians expressed a continued need for further 'cultural change' and clarity over job plans and long term stability. There is no routine rotation to a busier unit such as Lancaster and it is not clear how skills will be maintained for consultants in the longer term and whether the paediatric service will continue to be sustainable. It is expected that such a system of senior doctors should provide high quality care if their skills are maintained.

The feedback from trainees in Obstetrics and Gynaecology was very encouraging with comments supporting good quality care, a supportive learning environment and good one-to-one care and approachable and helpful midwives. These observations were not mirrored by trainees from other hospitals who perceived the Furness General Hospital as being remote and practising a 'different' type of medicine. These trainees anecdotally informed the panel that they would not be happy to work in this hospital.

Concerns raised included the local transport system is already being over stretched and the provision of anaesthesia services needs clarification to establish safety.

#### West Cumberland Hospital

In contrast to Furness Hospital there was a strong perception that decisions had already been made to close the consultant led unit for maternity and replace it either with a freestanding MLU or a rebuilt standalone MLU at Cockermouth. Such an overriding and dominant view has created an impossible environment in which to recruit permanent staff and thereby improve patient safety. The relocation of acute surgical services from out of hours care to Cumberland Infirmary was seen as an integral part of this decision. As a result of these initiatives the morale and motivation of the staff is very poor. The absence of surgical support out of hours was seen as a major risk to patient care in obstetrics and gynaecology during these hours. Some aspects of the current maternity service are going to be relocated into new accommodation on this site.

Interestingly the recruitment challenges to midwifery at this Trust were not apparent. The appointment of 'home grown' midwives or midwives from Northumbria or Scotland have been adequate for establishment, with an expression of adequate quality.

There was perceived to be a strong emphasis of normality of pregnancy and childbirth although evidence of strong midwifery led care was not apparent.

There seemed to be no joint ownership of the issues for maternity care between West Cumberland Hospital and Cumberland Infirmary, demonstrating a lack of strategic leadership from the larger unit. Potential pathways of care for women involving the two units were not obvious. Indeed the financial overheads incurred by West Cumberland Hospital were identified as a detrimental issue for Cumberland Infirmary.

#### **Cumberland Infirmary, Carlisle**

There were very favourable reports about the care and concern of consultants in obstetrics shown to patients, but the panel were surprised to witness such lack of progress and leadership in some areas which

had been identified during the last decade through many review processes. The provision of an epidural service is still not a reality despite being identified as a problem many years ago.

There seemed to be no joint ownership of the issues for maternity care between West Cumberland Hospital and Cumberland Infirmary, demonstrating a lack of strategic leadership from the larger unit. Potential pathways of care for women involving the two units were not obvious. Indeed the financial overheads incurred by West Cumberland Hospital were identified as a detrimental issue for Cumberland Infirmary.

There is no additional space or capacity at Carlisle for any relocation of service. It would require extensive rebuild to accommodate such numbers. Currently there is no realistic choice for women in terms of delivery units other than home or CLU.

Staff recruitment and retention has been a huge problem and at its most serious in anaesthetics. Different recruitment initiatives have failed to attract personnel of the right calibre. This has had serious impact on patient safety across both hospitals and there are ongoing SIUs into 'never events' even those are not directly maternity related.

# **Eight: Tabulated Options Appraisal**

OPTION 1: Maintaining four CLUs as currently configured. Restructuring medical working practices. Development of co-located MLUs at CIC and RLI.

	Potential Benefits	Potential Risks of Model	Risk Reduction Strategy
Quality / safety	Convenient, local Encourages engagement Builds confidence. Reduced antenatal admissions for minor complications. Local management of risk. Low transfer/transport requirement. Improved staffing increases safety, satisfaction and continuity.	Attracting and retaining medical staff. No MLU at WCH and FGH Recruiting anaesthetists in North Cumbria. Potential for deskilling over time. Challenge in securing rotation in tertiary units. Consultants views on resident on call.	Design and model new integrated consultant working across two sites in each Trust. Arrange tertiary rotations. Engage GP's to take on more responsibility /skills. Develop unified maternity dashboard. Appoint Non-Executive Director to lead of women and children's services. Project group to examine this in detail before implementation to ensure it is viable and sustainable.
Affordability	Commissioner commitment to increase expenditure-over PbR. Cost profile of MLU compared with CLU. Job planning savings from middle grade rota/ consultants resident. Reduce locum costs	Costs for recruitment and medical salaries. Limited capital costs. Four unit salary costs compared with two units.	Reinvesting in consultant expansion 'pump prime' money needed to recruit
Deliverability	Strong support from community, CCGs, GPs and most of staff. Evidence of strong appointments to consultant in	The anaesthetic service may be non-viable as a CLU cannot operate without anaesthetic input	Making a clear decision and demonstrably sticking to it will increase recruitment potential especially in North Cumbria.

	Potential Benefits	Potential Risks of Model	Risk Reduction Strategy
	O/G, paediatrics in WCH and FGH. Educational structures should provide stimulating midwifery and post graduate training	Paediatric service may be non-viable - a CLU cannot operate without paediatric / neonatal availability.	
Sustainability	Static birth rate for ten years. Potential influx of young families to BAE. Anticipate portfolio consultant with different working practices.	Travel time, If undeliverable then cannot be sustainable. Great care and sensitivity will be required to deliver changes of job planning to existing consultants. If these job plans appear to be unattractive, then option 2 will be required.	Challenging and varied job. Improve team working. New liaison with tertiary units and Lancaster University medical school.
Equity of Access	Maintained	Current inequalities of access for isolated areas but no change over the present.	Further support for ambulance and local authority transport.
Travel Access	As at present	Travel requirements for professionals.	Attractive resident arrangements for doctors at WCH and FGH

# OPTION 2a: Develop Two CLUs at RLI and CIC. Develop Two MLUs at RLI and CIC. Closure of CLUs at WCH and FGH

Criteria	Potential Benefits	Potential Risks of Model	Risk Reduction Strategy
Quality and safety	Concentration of all medical staff.	Distance, difficult access, those at	Will require further investment in ambulance
	Professional Interaction, team	greatest risk furthest away.	service.
	working, stimulation, clinical skills,	Ambulance service.	Communication and engagement strategy.
	improved outcomes.	Less choice.	Project group should work up this proposal in
	Clinical service development.		parallel in case Option 1 is not deliverable.
	Centralisation improved staff		
	recruitment-improved standards.		
	Maintenance of clinical skills.		
Affordability	Efficient cost effective medical rotas.	Capital cost for rebuild at CIC and	Capital against salary costs.
		RLI.	
		Ambulance budget.	
		Staff redundancy.	
Deliverability	Better recruitment-cost effective-	Reduced access-community will	Better choice with MLU.
	attractive professionally.	not support this.	Closer proximity to tertiary centres -improve
	All training.		recruitment.
	All trainees in two localities.		
	Salest option if funding available.		
Sustainability	Attract and retain workforce	Ignores potential increase in local	Communication and engagement strategy
Sustantasinty	Manageability improved	nonulation	Review of other acute sector provisions
	Anticipate consultant support for job	Some staff will retire early	
	plans.	Stability of other acute sector	
	Provide August Aug	services.	
Equity of Access	Improved care for all	Very unequal	Investment in roads, ambulance and local authority
Travel access		Impact on other patient groups.	Hospital based transport for free travel.
		Prioritisation.	
		Skills training for para medical	

#### OPTION 2b: Develop Two CLUs at RLI and CIC. Develop Two MLUs at RLI and CIC. Convert CLUs at FGH and WCH to stand alone MLUs

Criteria	Potential Benefits	Potential Risks of Model	Risk Reduction Strategy
Quality and safety	More choice, enhanced patient	Access for high risk.	Local communication and engagement process.
	experience, local care for some.	Significant transfer rate in labour.	Increase ambulance capacity.
	Concentration of all medical staff.	Local population not so	
	Professional Interaction-team	supportive.	
	working, stimulation, clinical skills,		
	improved outcomes.		
	Clinical service development.		
	Centralisation improved staff		
	recruitment-improved standards.		
	Maintenance of clinical skills.		
	Development of new clinical services		
Affordability	Reduce cost pressures for medical	Rebuild at RLI and CIC for CLU.	Capital against salary costs
	staff due to efficiency in deployment	Ambulance costs.	
	of staff.	Staff resign due to working	
		changes	
	The cost evidence (Kings Fund) –Free	Questionable patient utilisation	
	standing (£1435 per delivery), CLU		
	(£1631 per delivery).		
	Convert CLU to MLU reducing new		
	capital investment		
Deliverability	Better recruitment-cost effective-	Ambivalence in community to	Communication strategy promoting midwifery led
	attractive professionally.	free standing MLU.	care
	Hub for training and education.	Intense midwifery staffing	Investment in Midwifery leadership
	Care closer to home for many.	challenge.	
	Cost effective.	Dispersion of midwives reducing	
		TOCUS.	

Criteria	Potential Benefits	Potential Risks of Model	Risk Reduction Strategy
Sustainability	Attract and retain workforce. Manageability improved. Anticipate consultant support for job plans.	Potential negative impact on other acute services. Failure to provide locally for potential expanding population.	Communication and engagement strategy.
Equity of Access	Equal for low risk but unequal for high risk women.	Unequal access through county for high risk.	Investment in transport, roads and ambulance service.
Travel access	As at present for low risk Problematic for higher risk.	Impact on ambulance service for other patient groups.	Free transport.

Criteria	Potential benefits	Potential Risks of Model	Risk Reduction Strategy
Quality and safety	About 650-1000 extra deliveries at RLI. Concentration of all medical staff and allied health professionals on three sites rather than four would reduce recruitment difficulties. Larger unit at RLI with focus on skills, efficiency and development. More interaction with colleagues, more clinically stimulating and enhance trainees experience.	Reduced choice at FGH. Travel challenges. Not supported by community Against spirit of providing locally for most disadvantaged	Communication and engagement strategy.
Affordability	Reduced efficient rotas	Capital cost of rebuild at RLI. Cost of increased ambulance provision.	
Deliverability	Improved recruitment at RLI. Focus on training and education.	Not supported by community. Greater travel time for staff.	This option may be more attractive and reduce recruitment anxieties.
Sustainability	Reduce recruitment anxieties.	Danger of being neither option 1 or 2	
Equity of access	Unequal ease of access and in particular to the most disadvantaged that are based in Barrow.	Profound risks to equity of access and travel. Perceived to be 'unfair hit' by population	Rebuilding road structure. Closure of one CLU in Cumbria would need skills of public engagement, to appreciate equity which will no longer be available.
Travel access	A major constraint with no advantages.	Profound risks	Significant investment in ambulance service

#### OPTION 3: Maintaining Three CLUs at CIC, RLI and WCH. Developing co located MLU at RLI and CIC. Closure of FGH and relocation of services to RLI.

Criteria	Potential Benefits	Potential Risks of Model	Risk Reduction Strategy
Quality/ Safety	Reduce the recruitment and compliance. About 800-1300 extra deliveries at WCI depending on configuration. Concentration of all medical staff and allied health professionals on three sites rather than four would reduce recruitment difficulties. Larger unit at CIC with focus on skills, efficiency and development. More interaction with colleagues, more clinically stimulating and enhance trainees experience.	The current maternity accommodation resources at Carlisle completely inadequate for proposal. There is no appetite within the local medical or patient community for a standalone midwifery unit to replace this CLU.	Rebuild of facilities at Carlisle to accommodate a significant transfer of work. The immediate appointment of a leadership team in maternity with the skills and vision to deliver the required proposals. On current evidence it is difficult to be clear if patient safety will be improved through this option.
Affordability	A greater concentration of workforce may reduce expenditure, as one rota will be less expensive than duplicate rota.	Rebuild costs are likely to be significant and recent rebuild at WCH is likely to be a significant loss of investment if not used for maternity services.	Weighing up the cost savings of transferring a service to the capital outlay to rehouse such service would need modelling.
Deliverability	Anticipated that a larger unit would be more attractive professionally, for newly appointed staff.	Significant changes for patients whose choice might be lessened- however, the development of a co-located MLU at Carlisle would increase the options for women in the style of care available. The political ramifications of such a decision need very careful planning.	The patients will only run with a significant change if they are convinced of a huge improvement in quality. Some will sacrifice a degree of safety for easy access. Investment in communication and patient engagement.
Sustainability	After a period of transition such modelling may attract more staff to maternity, anaesthesia and paediatrics. This would increase sustainability.	Loss of staff in short term who do not support the reconfiguration decision, may render the staffing issues even more complex.	A 3000 delivery unit is attractive for staff, but decision needs patient focus.
Equity of access	Improved access to the local population of Carlisle. With an MLU this would improve choice.	This core service would no longer be available to a significant population who are already struggling with the challenges of significant deprivation.	Closure of one consultant unit in Cumbria would require skills of public engagement.

# OPTION 4: Maintaining Three CLUs at CIC, RLI and FGH. Developing co located MLU at RLI and CIC. Closure of WCH and relocation to CIC.

Criteria	Potential Benefits	Potential Risks of Model	Risk Reduction Strategy
		The prospect of removing valued services	
		to such a population for something so	
		straightforward as childbirth is worrying.	
Travel Access	No advantages for the population currently	Potential serious issues with delay in	Massive investment in the ambulance
	looking to WCH for services	transfer time and mother family	service since such modelling and
		separation at a time when the reverse is	configuration will cause significant
		needed.	strain to this service

OPTION 5: Centralisation of all services to one un	<b>DPTION 5</b>	: Centralisation	of all	services	to one	unit
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Criteria	Advantages	Risks	Reducing risks
Quality/safety	Ultimate model for the safe provision of the	Transfers risk to women their	Massive investment in the transport infra-
	spectrum of care for obstetrics and	families and the ambulance	structure, for public transport and provision of
	gynaecology.	service due to the distance.	emergency ambulance provision.
	Provide and improve clinical standards and	Major challenge to the	
	quality, but only for women once reached	workforce who are currently	Provision of accommodation for women and
	the facility.	distributed through six sites.	their families while 'waiting for labour' on a
	Speculative that such a model might	Accessibility -massive	pattern similar to Raigmore Hospital, Inverness
	improve outcomes.	challenge, possibility of staff	should be considered.
	Through patient pathways would ensure a	resignations and a reliance on	
	unified pattern of care.	attracting new staff.	Such a rebuild would require many emergency
	Maintenance of professional skills and	Potential threat to the	services to be co-located and allowances for
	competencies enhanced, thereby removing	workforce accessibility might	relocation of staff would be essential
	the need for 'partnership' working.	challenge maintenance of	
	Improve the experiences of those in training	desired standards.	
	including midwives and doctors.		
Affordability	Centralisation allows for the most efficient	Major reconfiguration of	The costs of such a project are probably not
	deployment of staff, but only if accessible	paediatrics, anaesthetics,	affordable.
	and motivated workforce.	surgery and others required-	
	This model may resolve workforce issues for	makes decision unlikely within	
	doctors as one hospital would be more	the current financial envelope.	
	attractive through improved professional	Criteria to select the	
	working.	appropriate site would be	
		fraught with problems of equity	
		of access.	
Deliverability	May improve the efficiency of training and	Geographical constraints of the	
	expose trainees to a wider range of clinical	county make such a proposal,	
	scenarios.	inappropriate for both the	
		patients and the safe provision	
		of service.	
		No local appetite among	
		patients or staff for radical	
		reconfiguration.	

Criteria	Advantages	Risks	Reducing risks
		Does not correlate with the	
		commissioners aspirations.	
Sustainability	Central large hub might present a more	Women might 'vote with their	
	challenging place of work.	feet' and stay at their location	
		increasing their own personal	
		risk.	
Equity of Access	For a small number of people close to the	This would depend on the	
	hospital this would allow equity of access.	location but such a decision	
		would create a total distortion	
		of equity of access. A massive	
		investment in transport infra-	
		structure	
Travel Access		This would compound issues	
		that are already problematic	

### Nine: Differences between MLUs and CLUs

#### MLU:

An MLU or birth centre offers care to women with a straightforward pregnancy with midwives taking the primary professional responsibility for care. During labour and birth medical services, including obstetric, neonatal and anaesthetic care are available should they be needed but they may be on a separate site, or in a separate building, and may involve transfer by ambulance.

Activity: midwifery led deliveries would be higher in a co-located unit than in a freestanding unit. Patients: Pregnant women and recently pregnant women up to 6 weeks post-partum. Women assessed as 'low-risk' would be suitable for the MLU [including Primips]. Women with some risk factors may still be suitable for the MLU depending on discussion with the consultant. Women from out of area [i.e. unscheduled] would not be suitable for the MLU.

Care Setting: Hospital or community setting

**Service availability:** 168 hours a week. Access within 90 minutes travel time, thresholds for transfer to CLU will depend on distance from MLU to CLU. Need to build in realistic transfer times for initial call to arrival, not just time spent travelling.

Access Point: GP referral, community midwifery referral, CLU, A&E, maternity triage, antenatal ward, another MLU

Discharge to: Home [early discharge], post-natal ward, HDU, ITU, Tertiary Hospital

Transfer to a more distant CLU was seen as risky with long distance travel on difficult roads resulting in delays and extended times.

#### CLU:

Delivery unit led by obstetricians which caters for all modes of delivery and all maternity pathways.

Activity: As per the RCOG guidance

Patients: Pregnant women and recently pregnant women up to 6 weeks post-partum

Care Setting: Acute Hospital

Service availability: 168 hours a week

Access Point: GP referral, Community Midwifery referral, MLU, A&E, maternity triage, antenatal ward, another CLU Discharge to: Home [early discharge], post natal ward, HDU, ITU, Tertiary Hospital

# **Ten: Service Standards**

<u>Safer Childbirth</u> – minimum standards for the organisation and delivery of care in labour (RCOG/RCPCH/RCM/RCoA 2007) sets out UK standards for obstetric intrapartum care including consultant staffing arrangements and availability of facilities such as interventional radiology. Paediatric staffing is covered on pages 37-39 and links to BAPM 2001 standards which have since been updated.

<u>Standards for Maternity Care</u> - Report of a Working Party (RCOG/RCPCH/RCM/RCoA 2008) defines 30 clinical and service standards for the maternity care pathway including for neonatal care and assessment, care of babies born prematurely or requiring additional support and child protection ,

**Standards for Birth Centres in England, (RCM, 2009)** sets out requirements for midwife-led birth centres and Birth Centres Resource – a Practical Guide follows on from the Standards and is aimed at all who are developing a birth centre including; commissioners, managers, clinical leaders, third sector organisations, midwives and users. It is a practical tool based on actual experiences. It promotes normality and prioritises safety within midwifery practice, valuing skills by confident and competent midwives in delivering womancentred care and autonomous decision making

<u>Neonatal Support for Standalone Midwifery Units</u> – a framework for practice (BAPM 2011) refers specifically to the provision of neonatal support for delivery units that are not co-located with obstetric services and where there is no immediate access to neonatal or paediatric staff.

<u>Responding to a proposal for merger or reconfiguration of maternity services</u> provision in England – a Good Practice Guide – (RCN March 2011) is primarily for RCN activities and regional union representatives but provides some useful pointers around policy and considerations when reconfiguration is being proposed.

Care Quality Commission <u>Essential Standards for Quality and Safety (2010)</u>- This guide is designed to help providers of health and adult social care to comply with the Health and Social Care Act 2008 (Regulated Activities) Regulations 2010 and the Care Quality Commission (Registration) Regulations 2009.

# **Neonatal Standards**

<u>The BLISS Baby Charter and Audit Tool</u> (BLISS 2012) provides a framework for units to examine key aspects of their service provision and to help staff make family centred care a reality

<u>Categories of Care</u> (BAPM 2011) sets out the definitions of intensive, high dependency, special and transitional care for neonates.

<u>Specialist Neonatal Care Quality Standard</u> (NICE 2011) addresses care provided for babies in need of specialist neonatal services including transfer services. Specialist neonatal services are those delivering special, high dependency, intensive or surgical care to babies. Compliance will be measured by collection of data against the <u>Neonatal National Quality Dashboards</u>

<u>Service standards for hospitals providing neonatal care</u> 3rd edition (BAPM August 2010) defines medical and nursing staffing levels and links closely with the NICE and DH documents and Quality Standard and Toolkit.

<u>Toolkit for High Quality Neonatal Services</u> (DH 2009) includes eight principles for high quality neonatal services and a framework to assist commissioners. The principles cover the major areas of activity within the neonatal care pathway and aim to provide standardisation in neonatal care:

- Organisation of neonatal services
- Staffing of neonatal services
- Care of the baby and family experience
- Transfers
- Professional competence, education and training
- Surgical services
- Clinical governance
- Data requirements

#### Paediatric staffing standards

<u>Quality and Safety Standards</u> for small and remote paediatric units sets out particular considerations for paediatric provision where the demography requires interpretation of normal acute standards. It covers service, clinical and workforce standards and considers training, sustainability and finance.

<u>Children's and maternity services in 2009: Working Time Solutions</u> RCPCH and RCOG 2009. The purpose of this report is to present the results of a survey of WTD compliance for obstetrics and gynaecology and paediatric services in England and to offer advice and guidance on achieving compliance from expert specialty panels based on their assessments of the solutions used by WTD compliant units visited by the project team.

<u>Facing the Future</u> – a review of Paediatric services (RCPCH 2011) details a set of ten service standards relating to clinical cover, expertise and child protection. All units in the UK were audited in summer 2012 for compliance against these standards.

#### **Anaesthetic Standards**

RCoA: <u>Guidance on the provision of obstetric anaesthesia services 2014</u>. When considering the provision of anaesthesia, the Royal College of Anaesthetists recommends that the following areas should be addressed. The goal is to ensure a comprehensive, quality service dedicated to the care of patients and to the education and professional development of staff.

# **Eleven: Anaesthetic staffing for NCUHT**

	WCH	CIC
Monday to Friday 08:00-18:00	2 elective LSCS dedicated anaesthetist 1 additional Consultant obstetric session. Remaining 7 sessions covered by speciality doctor also covering ICU/transfers with a Consultant	3 elective LSCs lists Consultant anaesthetist. Remaining 7 sessions experienced trainee or Consultant dedicated to obstetrics. (second Consultant for CEPOD list working alongside). Separate ICU rotas
Monday- Friday 18:00-20:00 Sat-Sun 08:00-20:00	Resident speciality doctor 1:8 rota (4.5 substantive + locums) single resident anaesthetist covering ICU/obstetrics/transfers1:8 Consultant on-call rota covering ICU/obstetrics on-call (5.25 substantive +locums) Additional "third on-call" back up rota mixed speciality doctor and Consultant made up by substantive anaesthetists	<ul> <li>1:7 resident rota trainee/speciality doctor for theatre/obstetrics, all experienced for obstetrics.</li> <li>Resident inexperienced trainee (currently 5, when reach 7 will be 24 hour rota) covering ICU</li> <li>On-call 1:10 Consultant for theatres/obstetrics (separate ICU rota)</li> </ul>
Overnight 20:00-08:00	Resident speciality doctor 1:8 rota (4.5 substantive + locums) single resident anaesthetist covering ICU/obstetrics/transfers1:8 Consultant on-call rota covering ICU/obstetrics on-call (5.25 substantive +locums) Additional "third on-call" back up rota mixed speciality doctor and Consultant made up by substantive anaesthetists	<ul> <li>1:7 resident rota trainee/speciality doctor for theatre/obstetrics/ICU, all experienced for obstetrics. (Currently 2locums, substantives appointed.)</li> <li>On-call 1:10 Consultant for theatres/obstetrics (separate ICU rota for on-call Consultants) all substantive</li> </ul>