APPENDIX 1

Leeds Teaching Hospitals NHS Trust
Formal Response to the Consultation Document

Safe and Sustainable - A New Vision for Children's Congenital Heart Services in England - Consultation Document - 1 March - 1 July 2011

Section 1:
Executive Summary

In this response to the above consultation we believe we will present a compelling case for Children's Congenital Heart Surgery to continue to be provided from Leeds as the centre for a wider population to the North of England.
The key points we would wish to make to members of the JCPCT are as follows:

1) The service at LTHT is **safe** as determined through the Sir Ian Kennedy Review process and the subsequent follow up by Mr James Pollock and his panel.

2) The service is also **sustainable** in that 3 surgeons have already delivered 342 operations in the under 16's in 2010/11. Recruitment of a 4th surgeon is underway and we believe that local demographics will enable us to achieve the target of 400 operations set out as the minimum requirement for a sustainable service by the review team.

3) LTHT offers gold standard co-location of all children's services plus Adult Congenital Heart services at 1 hospital site. This has been achieved after significant investment in the Leeds Children's Hospital over the last 3 years.

4) The Leeds based service covers a population of 5.5 million and the birth rate and number of children in the region is expected to continue to grow at a higher percentage than the national average.

5) Leeds is situated in the heart of a conurbation which enables 13.7 million people to access its facilities within a 2 hour drive time. This is in sharp contrast to Newcastle which is accessible to only 2.8 million people within the same time frame. (See access map at Appendix 1)

6) It would appear that 'heroic' assumptions have been made about the flow of patients to Newcastle in Options A, B and C. Local feedback and intelligence from the Specialised Commissioning Group suggest that patient choice and more realistic assumptions mean that it is unlikely that Newcastle can achieve the minimum requirement of 400 cases and will therefore **not** be sustainable under any of those scenarios.

7) LTHT has doubled the number of Paediatric and Adult Congenital Heart Cardiologists in the last 5 years, and has undertaken 184 Interventional Cardiology procedures in the under 16s.

8) LTHT Cardiologists and Surgeons have developed an exemplar network model with clinical and management teams across the Yorkshire and Humber region.

Further detail on these points will be made later in this document.

Section 2:
The Case for Leeds

JCPCT members will be aware of the significant support that has been demonstrated for the retention of Children's Congenital Heart Surgery in Leeds. This culminated in over 550,000 people signing a petition in support of the unit - the largest regional public declaration of this nature ever recorded on a health related matter. This level of support builds upon the belief that the case for retaining Children's Congenital Heart Surgery is extremely strong. The strengths of the case are as follows:

2.1. Co- location of clinical services
It is the view of the British Congenital Cardiac Association (BCCA) that the gold standard in terms of children's congenital cardiac services equates to the co-location of foetal, maternity, neonatal services, Paediatric Intensive Care (PICU), children's inpatient services and Adult Congenital Cardiac services on a single hospital site. The BCCA issued the following statement on the 19/02/2011:

> "The BCCA believes that quality of service is key and where possible, the location of units providing paediatric cardiac surgery should reflect the distribution of the population to minimise disruption and strain on families. It has become increasingly clear throughout this review that paediatric cardiac surgery cannot be considered in isolation and that numerous inter-dependencies between key clinical services (from fetus to adult) must be reflected in the final decision. The BCCA welcomes the recognition by the review that the linking of paediatric and adult cardiac services is integral to providing high quality care. It is important that the centres designated to provide paediatric cardiac surgery must be equipped to deal with all of the needs of increasingly complex patients. For these services at each centre to remain sustainable in the long term, co-location of key clinical services on one site is essential."

This standard of provision is currently provided by the service at LTHT. There has been a significant amount of reconfiguration work at LTHT to be able to deliver the gold standard including the move of children's cardiac services from an isolated site at Killingbeck Hospital in 1997 to the Leeds General Infirmary (LGI) and the more recent centralisation of all children's inpatient services to the LGI in 2010 to create the Leeds Children's Hospital.

The Leeds Children's Hospital provides the most comprehensive range of clinical services for children with congenital heart problems, including foetal cardiology, maternity, neonatal, all inpatient children's specialities and adult congenital services. These are supported by a PICU with 24/7 Consultant Intensivist support and dedicated psychology and specialist nurse input. There are 41 rooms available for use by families who wish to be resident at the hospital and this includes a purpose built 22 bedded facility which is managed by the Sick Children's Trust.

Through its comprehensive co-location of clinical services the Leeds Children's Hospital achieves the gold standard in children's congenital cardiac care.

The Yorkshire and Humber Congenital Cardiac Board (Y &H CCN) believe that options without a surgical centre in Leeds for patients and families from Yorkshire and the Humber offer inferior co-location of services. This will have a detrimental impact on the access and experience for patients compared to the current service in Leeds.

2.2. Population Density/ Access

The population in Yorkshire and Humber is currently 5.5 million with Leeds occupying a central position at the heart of major road and rail hubs. This means that within a 2 hour drive time 13.7 million people can access the services at the Leeds Children's Hospital.

Furthermore the population in the Yorkshire and Humber Region is growing at a faster rate than other parts of the country. In the last decade the population has grown by 5.75% compared to 4.7% in England generally. The population is projected to rise to 6.1m by 2028, and more than 50% of this increase is attributable to international migration. There is a higher incidence of congenital heart disease in the South Asian population, and 23% of all the children who have had surgery in Leeds in the last 5 years have come from this group.

There is a strong case to site a surgical centre in Leeds based on its current population, its projected population, its demographic mix and its excellent rail and road links. This is an important consideration in terms of future proofing and making the reconfiguration sustainable.

2.3. Travel Times

The Yorkshire and Humber Region hosts Embrace, the United Kingdom' s first combined infant and children's transport service. It undertakes neonatal transfers alongside paediatric retrievals for the 23 hospitals in the Yorkshire and Humber Region, serving 4 tertiary neonatal units and 2 paediatric intensive care units.

The Safe and Sustainable Review indicated that proposed changes to patient flows should not increase travel times beyond 3 hours. Analysis by Embrace of the 4 reconfiguration options indicates that with the exception of Option D

where the Leeds Children's Hospital remains as a surgical centre, a significant proportion of transfers will take longer than present.
The existence of a functioning retrieval transport service serving the Yorkshire and Humber Region is one of the strengths of the current Network, and Embrace would be largely unaffected if Leeds remains as a surgical centre. Conversely there would be a significant impact on this service if the Children's Congenital Heart Surgery was to relocate to Newcastle. Leeds has provided input to colleagues at EMBRACE as part of their impact assessment (IA). The IA will be submitted to JCPCT by Sheffield's Children's Hospital who hosts this service. Their report is attached at Appendix 2 for ease of reference.
It should be noted that there may be some potential for Embrace to undertake some of the additional activity from the Yorkshire/ Newcastle border if required.

2.4. Congenital Cardiac Network
The Yorkshire and Humber Congenital Cardiac Network (Y&H CCN) was established in 2000 and has developed and expanded since then. There is a mature management and clinical governance structure which has been built up over this time, and experience gained in running a large network with outreach clinics held across the region. The Y&H CCN is regarded as an exemplar network in the country and held in high regard across the region by both the professionals and the patients involved in the service.

The LTHT Paediatric Cardiology service supports outreach clinics on 17 hospital sites, demonstrating the unit's philosophy that where appropriate patients should receive care close to home. Seven of the hospital sites have paediatricians with expertise in Cardiology (PEC), and their ongoing professional development is supported in the Leeds Centre by regular attendance at the MDT meetings and feedback on imaging, diagnosis and pick up rates.

The clinician input spans the whole patient pathway from fetal cardiology, paediatric cardiology, congenital cardiac surgery and adult congenital cardiology and inherited cardiac conditions.

Most recently the CCN has undertaken a systematic review of all centres delivering secondary level paediatric cardiology. This review developed designation standards and then benchmarked all 17 hospitals where clinics are provided against the designation standard. A core designation standard is that all Trusts intending to provide secondary level cardiology will employ a PEC. This will improve the standard of care received by the paediatric cardiology patients in the Yorkshire and Humber region.

The CCN has also been responsible for the development of network wide policies which ensure consistency of patient care across the Network. Two recent policies that have been developed and adopted are the prostaglandin policy and the respiratory syncytial virus immunisation policy.

All these initiatives demonstrate the robust network arrangements that currently exist in the Yorkshire and Humber region with Leeds at the heart of those arrangements.
The Y &H CNN is one of the major strengths of the current service and this is recognised nationally. It is an established and mature network model that is capable of further development and expansion, and adds huge credence to the case for Leeds.

2.5. Adult Congenital Cardiac Services (ACHD)
Due to the co-location of services on the Leeds General Infirmary site there is a seamless transition of care for those with congenital heart conditions. At the age of 16 a young person's cardiology care transfers to the adult team who are also based at the Leeds General Infirmary. For surgical care they remain under the care of the congenital cardiac surgeons and the interventional cardiologists. For those who become pregnant they have shared care under the cardiologist and obstetricians and are able to deliver at the Leeds General Infirmary.
It is not yet clear how the Safe and Sustainable Review will account for the impact on adult congenital cardiac services, but the co-location of these services is recognised by the experts and the patients as an advantage. This is another reason for designating Leeds as a Specialist Surgical Centre.

2.6. Current Activity Levels
One of the key designation criteria for a Specialist Surgical Centre is the delivery of 400 cases per annum with 4 surgeons.
In 2009-2010 Leeds delivered 316 operations on under 16s and this increased to 342 operations and 184 interventional catheters in 2010-2011**.**The process to recruit a 4th surgeon is underway and Leeds will be able to deliver 400 cases from within its current population base as a result of local demographic changes.
Furthermore the Trust has developed a detailed capacity delivery plan which evidences how the infrastructure would be provided to cope with an increase to 650 - 700 cases should this be required.
The Leeds Children's Hospital will naturally get to the required surgical caseload numbers within the next 12 months and has an agreed estate development plan which facilitates further expansion.

2.7. Support for the Service in Leeds
As previously indicated patients, families and public in the Yorkshire and Humber region have demonstrated their overwhelming support for retaining the Children's Congenital Heart Surgery in Leeds. Over half a million people have supported the local charity, the Children's Heart Surgery Fund (CHSF) petition with thousands of others responding to the consultation. Given the continued commitment to putting patients at the centre of their care, hardwiring the principle of "no decision about me, without me" into the NHS and the NHS Constitution's right to choice, the views of such a significant number of people should not be ignored.
In addition to the above, the service in Leeds has the support of the Yorkshire and Humber Specialised Commissioning Group (SCG), and the Health Overview and Scrutiny Committees across the county.

2.8. Summary

The case for Leeds is persuasive at every level. The current service is increasing year on year and will attain the standard of 400 cases and 4 surgeons within the next 12 months. All children's services are based within the Leeds Children's Hospital on the Leeds General Infirmary site and meet the gold standard in terms of clinical adjacencies. In terms of population Leeds currently serves a large population which is continuing to grow, and the service is accessible by 13.7 million people within a 2 hour travel time. The Yorkshire and Humber Congenital Cardiac Network is regarded as an exemplar nationally and is capable of further development and expansion. The Region has developed a dedicated infant and children's transport service which is also capable of expansion. There are agreed estate development plans in place which will enable infrastructure development on the Leeds General Infirmary site to accommodate an increase to 650 - 700 cases. The service is Leeds is demonstrably safe and meets all the necessary pre requisites for sustainability.

In Section 2 we have set out what we believe to be a very strong case for designating Leeds as a specialist surgery centre for Children with Congenital Heart Disease. It is a matter of record however, that prior to and during the consultation a number of issues or concerns have been identified regarding the conduct of the review. Whilst a number of these concerns have been raised and responses received these have been "off line" and members of the JCPCT may not be fully aware of the details of those concerns. For this reason we believe it is important to record concerns in relation to the conduct and the process of this review of Children's Congenital Cardiac Surgery. We have not done this through any wish to cause embarrassment to either individuals or organisations but because the inaccuracies, inconsistencies and the approach which has been adopted throughout this process have both inflamed relationships with the local clinical community and had a direct impact on the options chosen for consultation in this formal response. As previously indicated, LTHT has raised concerns throughout the process and has engaged with colleagues from the Safe and Sustainable review team about them, but believe it is right to draw attention to them again in this document, and ask that the JCPCT consider these as part of their deliberations in making any final recommendations to the public.

Section 3:

Issues and concerns in relation to the Safe and Sustainable process

In broad terms our concerns relate to

- Matters of factual accuracy and consistency
- Matters of scope, context and approach in the review and with the options appraisal.

3.1 Matters of factual accuracy and consistency

- The final report received from Professor Ian Kennedy's review in January 2011 was different from the draft letter about the report that the Trust had commented on in 2010 and contained a number of inaccuracies around the PICU configuration and specialist nurse posts. Although the Trust had responded to the inaccuracies in the draft letter, a number of them were not corrected in the final report from Sir Ian Kennedy .There was not an opportunity to correct the final report before this information was placed in the public domain, and indeed members of the Safe and Sustainable team have repeated this information in the media.

- Despite requests, the details of Sir Ian Kennedy's expert panel's score for Leeds have not been shared with us nor have the errors been rectified. The Pre Consultation Business Case (PCBC) and the final consultation document attempt to describe the process and assumptions that the JCPCT used to shortlist the final 4 options that have been put to the public. One of the considerations identified is that in the final stage of short listing from 14 potential options down to 4 , the commentary advises that Leeds had stated that our maximum capacity was 600 operations and this was offered as an explanation as to why 2 of the 14 options were discounted. This is not something that we have ever stated, and it is unclear why this assumption was made or by whom. Further to this the option that contains Leeds (Option D) requires Leeds to deliver more than 600 operations, but because there was an erroneous view that this is above our stated maximum, Option D was "marked down" in the process.

- The weightings given to access and travel times are not consistent with the evidence we receive from general polling which suggests that access is the single most important factor influencing patient choice and seen as a core component in the patient and family experience . Therefore giving "access" the lowest weighting in any scoring mechanism appears wholly inappropriate. Over half a million people have supported the Children's Heart Surgery Fund's campaign in Yorkshire and Humber , and members of the Safe and Sustainable review team who attended the public consultation event in Leeds on the 10th May 2011 had the opportunity to hear this strength of feeling for themselves.

- The review states that the minimum number of operations for each centre is 400 cases per year, but that 500 cases a year is preferable and indeed uses this assertion to explain why there should only be 2 centres in London. In contrast to this, in the North of England, 3 of the options favour Newcastle over Leeds. However the options containing Newcastle suggest that Newcastle can only deliver just over 400 cases whereas the options containing Leeds demonstrate that Leeds could easily deliver 500 cases or more.

- The case for change and the quality standards are underpinned by the creation of Congenital Heart Networks. Whilst Sir Ian Kennedy's review team scored the current networks at all centres in a differential way based

upon current practice and track record, the scoring for the final 4 options gave all potential networks the same score. It is not clear why current performance and track record are not deemed important success criteria of future configuration options. The existence of the network in Yorkshire and the Humber demonstrates a clear commitment to best practice and an attitude that puts the needs of the patients first. A significant aspect of delivering a successful network is dependent upon the clinicians, managers and commissioners and their attitude toward patients and families. Those centres who have not made the effort to take services closer to the patient should receive a lower score. It is this positive attitude toward patients that has allowed the children of the Yorkshire and Humber to benefit from an exemplar network model, yet this has not received meaningful credit in the process.

3.2 Matters of scope, context and approach in the review and the options appraisal

- The definition of co-location of critical interdependent services that was used by Sir Ian Kennedy's expert panel ,and subsequently by the JCPCT, fails to draw important distinctions between minimum requirements and what many, including the British Congenital Cardiac Association (BCCA), parents and the general public view as "gold standard co- location". It is clear and accepted by the majority of knowledgeable stakeholders that having the provision of other significant children's services e.g. major trauma, nephrology, surgery, neurosciences, neonatal, foetal medicine and maternal medicine under one roof on one site is a significant advantage not only for service delivery but for patient experience. Much more significance should have been given to this, and we would suggest that JCPCT should have a scoring system that differentiates between achieving the minimum (i.e. different hospital sites) and the gold standard (i.e. all at one hospital).

- The approach taken by the review to geography and population density is difficult to understand. Population density has been used as a justification for keeping Liverpool and Birmingham in all the options, but this same rationale has not been applied to Leeds. The review should have adopted the rational approach of placing the service and the surgeons where the people are, not attempting to move the people to surgeons.

- The decision by the JCPCT to include the 3 Nationally Commissioned Services (NCS) as essential criteria in the short listing of the 4 options put to public consultation was taken after the Sir Ian Kennedy review. These were not part of the original service standards; they are not core or central to the provision of Children's Congenital Heart services in England and have not been raised by the public or the clinical teams as priorities for retaining sites. If they are so important to determine future configuration options, this should have been outlined at the outset. The review should firstly determine the optimum configuration of Children's

Heart Surgery based upon the standards, and then undertake a full options appraisal to determine the future provision of heart transplantation and ECMO.

- Adult Congenital, (ACHD), patients and services are not being considered as an integral and necessary part of this process. This does not make sense given that it is often the same surgeons, cardiologists and wider multidisciplinary team that provide the care for these patients. It is widely acknowledged that where feasible it is desirable to co-locate ACHD services with the Children's Congenital Cardiac units. The workloads from ACHD activity in our centre are an important consideration in the overall service, and they drive up the overall quality and patient experience that is offered.

- The patients, parents, general public and staff involved with Black Minority Ethnic (BME) services in Yorkshire and the Humber have expressed concerns that the public consultation documents have only been available in languages other than English for the last 5 weeks of the 4 month consultation period. Given that for the service in Leeds, 23% of all of the children who have had cardiac surgery over the last 5 years are from a BME background the importance of this cannot be underestimated. It is our view that the consultation period for these patients and families needs to be extended to take account of this.

- The decision taken by the JCPCT to put options out to public consultation before having completed the Health Impact or Equality Assessments is of concern.

- There appear to be a number of assumptions about patient flows in the options put forward for the north of England, that are inconsistent with local SCG knowledge of services and also with one of the 5 key principles that services should be delivered close to families' homes where possible. In Options A-C , patients and families from the Yorkshire and Humber region are being expected (as detailed in the assumed patient flow map) to drive further than their closest centre and go to a centre that is not as accessible , in order for that centre to achieve the minimum 400 cases per year. There is a genuine concern from our patients, families and clinical teams that Newcastle will not reach the minimum number of operations when patient and clinical choice is accounted for. Whilst acknowledging that there is further analysis of patient flows being undertaken in the Yorkshire and Humber region, it remains a concern that this has not been available to inform people as part of the public consultation. (Appendix 3 and Appendix 4)

- We believe that before the JCPCT make any final decisions, the issue of the viability and sustainability of Children's Cardiology Centres needs further work. We are genuinely concerned that the Cardiology Centres will be unable to meet the inevitable challenge of retaining sufficient high calibre expertise in a service that does not offer

Interventional Cardiology and Cardiac Surgery. This has not been fully explored or risk assessed.

- The Ian Kennedy review team determined that it did not have the expertise to score the criteria outlined in the review for deliverability and achievability and that these issues would be considered by the JCPCT. However in the evaluation criteria published in the consultation document, the JCPCT did not consider the criteria relating to minimising the negative impact on the NHS workforce, recruitment and retention, and mentoring newly qualified staff including junior surgeons, Given these criteria were agreed with stakeholders as important, it is not clear if they have been considered as part of the final options.

We believe that the case for designating Leeds is very strong and recognise that in determining the optimum configuration for the future provision of Children's Congenital Cardiac Surgery , there is a need to consider this not only from a regional but a national perspective. We have given considerable thought to this and have developed an Option that we believe offers some additional benefit to those put forward, for members of JCPCT to consider.

Section 4:
Option E - proposed future configuration of Children's Congenital Cardiac Services in England

As requested the Trust has considered the optimum configuration of future centres across England and presented a new option, rather than focus just upon the region or the North of England.

A 5th option, Option E, including seven Specialist Surgical Centres and four potential Children's Cardiology Centres appears to offer the optimum configuration of services.

Whilst we would support Option D as it has been presented in the public consultation, we believe that Option E offers further benefits without increasing the risks, as outlined below.

4.1 Proposed Specialist Surgical Centres

- London network - 2 centres in London
- Birmingham Children's Hospital
- Bristol Royal Hospital for Children
- Leeds Children's Hospital at Leeds General Infirmary
- Alder Hey Children's Hospital , Liverpool
- Southampton General Hospital

4.2 Proposed Children's Cardiology Centres

- 1 of the 3 London Hospitals (whichever is not designated for surgery)
- Freeman Hospital , Newcastle
- Glenfield Hospital , Leicester
- John Radcliffe Hospital, Oxford

4.3 Improved Benefits under Option E

- **Access and Journey Times** - replacing Newcastle with Leeds in the above option would significantly reduce the % of patients who would see an increase in travel times of more than 1.5 hours.

- **Retrieval Times** - compliant with Paediatric Intensive Care Society Standards.

- **Number of procedures** -replacing Newcastle with Leeds in the above option removes the concern of the Yorkshire and Humber SCG that the assumed patient flows in Options A -C, from Y and H will not happen in reality and therefore Newcastle will never reach a minimum of 400. It is evident that Leeds delivers the optimum requirement of a minimum 500 operations without the need for patients to travel beyond their nearest centre.

- **Managed clinical networks** - In addition to the networks in this option being viable, this option recognises the performance of the current network model in the Yorkshire and Humber, providing care as close to the patients as possible and working collaboratively with clinical, managerial and commissioning colleagues to make this happen.

- **Quality** - this option retains more of the centres that ranked highest for quality. Replacing Newcastle with Leeds is not a material change to this given that the scores for both centres in Sir Ian Kennedy's report were close, with a difference of only 24 points. We would contend that if co-location of services at Newcastle and Leeds had been given differential scores based on one hospital site in Leeds rather than multiple hospital sites in Newcastle, as the professionals and patients/parents believe they should have been, Leeds would not have scored less than Newcastle.

- **Paediatric Intensive Care Units -**replacing Newcastle with Leeds in Option E lessens the impact on the provision of PICU. This is because the PICU beds at the Freeman are specifically for children's cardiac surgery, and are not utilised for general children's PICU. Therefore if children's cardiac surgery is lost from the Freeman, closing the PICU beds will not impact on the overall provision of PICU in the North East.

- **Capacity to deliver the increase in surgical and interventional cardiology work -** LTHT has a robust plan to deliver the increased capacity requirements in the Leeds Children's Hospital. This plan is consistent with the Trust's Clinical and Estate Strategy and has been agreed by the Trust Board.

4.4 Risks under Option E

- **Relocation of the Nationally Commissioned Services** - whilst Option E would require ECMO services to be relocated from the

Glenfield Hospital in Leicester and ECMO and children's heart transplantation from the Freeman in Newcastle , JCPCT must consider this to be viable as it is the case in Option D. It is our firmly held view that as these services support much smaller numbers of patients, and are not central to the requirements to deliver the standards that the Safe and Sustainable review has prescribed, that they should not be allowed to dominate the choices in relation to future centres. JCPCT has accepted the premise that they may need to be relocated in order to achieve the optimum configuration for children's cardiac surgery centres against the standards. These standards should take priority in the decision about designation. The review has done some work in relation to where these services could be re-located in the future, and following that has identified a range of options, with Birmingham Children's Hospital looking like the favoured option. It is our view that there may be a need to further develop the options appraisal to identify the optimum configuration for the nationally commissioned services, and as we have stated throughout this review, we would welcome this opportunity.

Section 5:
Option E - proposed future network arrangements

If Leeds Children's Hospital was designated as the Specialist Surgical Centre within a North East Cardiology Network the vision would be to develop 2 Children's Cardiology Centres in Newcastle and Sheffield. Both Newcastle and Leeds would continue to provide outreach services to its existing group of District General Hospitals, with some of the hospitals in the southern part of the region being serviced by the Sheffield centre. It is our belief that establishing these Children's Cardiology Centres as hubs to the specialist surgical centre will be central to ensuring that the impact of longer , more onerous travel times across a wider geographical area are kept to a minimum as the review has envisaged in the models of care put forward.

Centres supporting more than 3,000 deliveries per year should be considered for designation as District General Cardiology Centres, with the development of paediatricians with an expertise in cardiology (PEC). Where services are delivered in more than one hospital within a single Trust it may be appropriate to rationalise provision to a single centre.

The principles governing the operation of the Network would be consistent with current Yorkshire and Humber principles, namely:

- Multidisciplinary outreach clinics offered as close as possible to the child's home.
- Standard care pathways across the Network to ensure equity of access and quality.
- Surgery, intervention and device therapy will be provided at the Leeds Children's Hospital.
- Specialist foetal cardiology will be supported in both Leeds and Newcastle.

- The development of telemedicine and videoconferencing will be essential to ensure the functioning of the large network
- Commitment from the Leeds surgical centre to continue to provide education, training and support to colleagues in secondary and primary care

LTHT would work closely with commissioners in Yorkshire and the Humber, the North East and colleagues at Embrace to agree a service model for transport of infants and children across a larger geographical network, which is consistent with safe and effective care. We have a track record of collaboration in this area, and this has resulted in the only regional transport service for infants and children - an excellent foundation on which to build.

Maggie Boyle

28/06/11

Appendix 2

Impact Assessment of the Safe and Sustainable Children's Cardiac Surgical Review on the Embrace Transport Service.

Impact Assessment of the Safe and Sustainable Children's Cardiac Surgical Review on the Embrace Transport Service.

Purpose of this Document
• This paper summarises the key issues surrounding the Impact of the Safe and Sustainable Children's review on the Embrace Transport Service

Summary of Recommendations	
1.	That further work is under taken to explore the impact on transport networks nationally of the options described within the Safe and Sustainable review.
2.	That further work is undertaken as to the financial implications of the developments required by Embrace to meet the increased workload of the service under each of the four options of the Safe and Sustainable review.

Author and Contact Person	Date	Version Number	Issue Date	Review Date
Jeff Perring Alison Hollett Liz Murch	9th June 2011	1	13th June 2011	

Impact Assessment of the Safe and Sustainable Children's Cardiac Surgical Review on the Embrace Transport Service.

Executive Summary

It is unclear within this region as to the impact upon the Embrace transport service with regards to the Safe and Sustainable cardiac review. Current transport services have been set up to meet specific models of care and their patient flows.

It is unlikely that any transport service will be able to meet a significant increase in demand for its service without further financial investment.

Embrace have had limited contact with transport services from other regions regarding paediatric cardiac activity. Therefore the assumption is that overall activity and impact on paediatric and neonatal transport services is presently unknown.

Embrace would recommend that further work is under taken to explore the impact on transport networks nationally of the options described within the Safe and Sustainable review.

In addition Embrace would recommend that work is undertaken as to the financial implications of the developments required by the service to meet the increased workload under each of the 4 options of the Safe and Sustainable review.

1. Background

Embrace is the United Kingdom's first combined infant and children's transport service. It undertakes neonatal transfers alongside paediatric retrievals for the 23 hospitals in the Yorkshire and Humber region, serving four tertiary neonatal units and two paediatric intensive care units. Established in a phased approach from December 2009, Embrace undertook just over 2000 transfers in its first full year of operation.

As the provider of infant and children's transport services within the region Embrace recognises that there will be transport implications associated with any paediatric service reconfiguration such as those associated with children's cardiac surgery, neurosurgery and trauma services.

This paper models the service implications for Embrace of the proposals put forward as part of the Safe and Sustainable Review of Children's Congenital Cardiac Services.

2. Safe and Sustainable Review of Children's Congenital Cardiac Services in England

The review, published in February 2011, has proposed four options for the rationalisation of paediatric cardiac surgical units with the reconfiguration of some existing surgical units as cardiology centres.

The four options in relation to Yorkshire and Humber are described below:

	Specialist Surgical Centres to include:	Cardiology Centres to include:
Option A	○ Freeman Hospital, Newcastle ○ Alder Hey Children's Hospital, Liverpool ○ Glenfield Hospital, Leicester	○ Leeds General Infirmary
	Yorkshire and the Humber would be divided between the Newcastle, Liverpool and Leicester Networks. Therefore, dependent upon which part of the region in which they lived, children would travel to Newcastle, Liverpool or Leicester for their surgery.	
Option B	○ Freeman Hospital, Newcastle ○ Alder Hey Children's Hospital, Liverpool	○ Leeds General Infirmary

	○ Glenfield Hospital, Leicester ○ Birmingham Childrens Hospital	
	East and South Yorkshire and Humberside would form part of the Newcastle Network and children from these areas would therefore travel to Newcastle for surgical services whilst those in West Yorkshire (Bradford, Halifax and Huddersfield) would form part of the Liverpool Network and travel to Liverpool.	
Option C	○ Freeman Hospital, Newcastle ○ Alder Hey Children's Hospital, Liverpool	○ Leeds General Infirmary ○ Glenfield Hospital, Leicester
	East and South Yorkshire and Humberside would form part of the Newcastle Network and children from these areas would therefore travel to Newcastle for surgical services whilst those in West Yorkshire (Bradford, Halifax and Huddersfield) would form part of the Liverpool Network and travel to Liverpool.	
Option D	○ Leeds General Infirmary ○ Alder Hey Children's Hospital, Liverpool	○ Glenfield Hospital, Leicester ○ Freeman Hospital, Newcastle
	Yorkshire and the Humber would form part of an extended Leeds Network and children from the region would continue to travel to Leeds for their surgical services.	

With each of the proposed options the Safe and Sustainable review has highlighted a number of factors that need to be considered. Two of these relate directly to transport but only the second of these directly affects retrievals and therefore the Embrace service. These were described below:

Factors	Option A	Option B	Option C	Option D
Access and journey times: Proportion who would see an increase in travel time of more than 1.5 hours	3.6%	6.2%	6.2%	3.6%
Retrieval Times	Compliant with Paediatric Intensive Care Society standards*	Compliant with Paediatric Intensive Care Society standards*	Compliant with Paediatric Intensive Care Society standards*	Compliant with Paediatric Intensive Care Society standards*

* The paediatric intensive care standard described is that of a 3-hour threshold

3. Modelling of data

Data was modelled for the 2010/11 year of Embrace activity. In addition data provided by Leeds has enabled us to model the potential increase in activity associated with patients born in or from the Leeds area who would have to move under any of the option. Journey times have been estimated utilising the RAC travel website journey planner tool.

There were a total of 224 transfers undertaken by Embrace with a cardiac diagnosis during 2010 / 11. In addition there were up to 188 children within the Leeds Paediatric Cardiac Centre at the Leeds General Infirmary (LGI) that may have to be transferred out under some of the options proposed.

4. Specific Factors for Safe and Sustainable Review

The Safe and Sustainable Review indicated that proposed changes to patient flows should not have a traveling time above 3 hours. Embrace took the transport activity and the LGI patient's for 2010/11 and modelled the effect of the options on transport times. The model below assumes that 100% of the activity will go out of region.

Factors	Option A	Option B	Option C	Option D
Proportion of transfers where increase in travel time of more than 1.5 hours	53.2% incl LGI* 13.8% excl LGI	73.3% incl LGI 50.9% excl LGI	73.3% incl LGI 50.9% excl LGI	N/A (From within region)
Retrieval Times (journey > 3 hours)	0.0% (Compliant)	0.0% (Compliant)	0.0% (Compliant)	N/A (From within region)

* The transfer time from Leeds General Infirmary (LGI) to the Freeman Hospital, Newcastle is 1hr 59 mins and therefore in excess of the additional 1.5 hours.

5. Impact on Embrace

When comparing the options it can be seen that with the exception of Option D where LGI remains as a paediatric cardiac surgical centre, a significant proportion of transfers will take longer than at present. In addition there would be a significant number of transfers out of Leeds that are not undertaken at present as well as the repatriation of children following their surgery.

The proportion of children that will need to be transferred out of region in Options A, B and C depends upon the services that continue to be provided at the Leeds Cardiology Centre. Babies and children require transport for a number of cardiac related conditions not all of which require care in a cardiac surgical unit or are directly related to a surgical need/intervention. Those that are transferred to a cardiac surgical centre may not all be taken to a paediatric cardiac ICU. Some may be taken to the NICU, or paediatric cardiac HDU. In addition a proportion of transfers into Leeds would require onward transfer to a surgical centre after assessment.

Following completion of the surgical episode of care many patients would require re-patriation to their local DGH or regional cardiology unit.

Appendix 1 shows a summary of the modelling undertaken on the impact of redesignation of cardiac centres on Embrace. This model, based upon 2010 data has taken a 'worse case' scenario in which all infants and children with a cardiac diagnosis are treated at the cardiac surgical centre rather than a cardiology centre. Of these 50% require a back transfer to their base hospital.

Option A
The impact on Embrace from the re-designation of cardiac centres in Option A will be significant. The modelling suggests that just less than 2,000 hours of additional Embrace time will be required annually to meet the increased demand. This is equivalent to 5.2 additional hours / day. However, only 13.8% of non-LGI patients would find that their transfer times would increase by 1.5 hours or more.

Option B / C
Options B and C will have the same impact on Embrace with just under 2,200 additional hours required annually to meet the increased demand. This is equivalent to 6.0 additional hours / day. There is a proportionally greater increase in journey times under these options with 50.9% of non-LGI patients having an increase in transfer times of 1.5 hours or more.

Option D
Option D may have little or no impact upon Embrace. Patients from the present Newcastle Network should be brought in by either the paediatric or neonatal retrieval teams from the Northern Region. However, there are hospitals at the Yorkshire border who may find it easier to use Embrace rather than the Newcastle transport services. It is not clear if the Newcastle retrieval services have modelled the increase workload related with the additional activity, associated with this option especially as the paediatric retrieval team is not a stand alone service such as Embrace.

There is potential that Embrace could undertake some of this activity although the level of such activity for Embrace is not known at present.

6. Discussion

At present Embrace undertakes transfers out of the Yorkshire and Humber Region for specialist care that is not available within the region, for capacity issues and for patient repatriation.

From the overall recorded transport activity in 2010/11 there were 112 out of region transfers, The majority of these were planned neonatal and paediatric transports for specialist services (of which 18 where cardiac).

An increase to the number of out of region transfers both acute and planned will have a significant impact upon the Embrace service including the following areas:

Staffing of Embrace
Embrace is based upon a model of staffing (numbers and shift patterns) that has been developed to meet the present transport requirements within the Yorkshire and Humber Region. The modelling above suggests that in each of the three options where Leeds becomes a cardiac centre there will be an increase in the number of

longer (out of region) transfers. This will effect the staffing / shift model. It is clear that this could not be achieved with the present number of staff without significant overruns in shifts and periods where there was inadequate Embrace cover for the region.

This situation could be partially mitigated through the use of aeromedical transport but this also has limitations such as weather and night flying.

The most realistic model to develop is that of further investment in Embrace through an increase in the number of teams (driver, nurse and doctor) available to the service, long side an increase in the number of ambulances to meet demand and increased activity.

It is likely that the last option, where Leeds continues as a cardiac surgical centre will also have implications on the number of out of region transfers but the level of this activity is not known.

Weather Conditions
Weather conditions impact on patient transport. Currently during harsh weather conditions, each transport is risk assessed with regards to the safety of the team and the patient's acute condition. Adverse weather is likely to impact more with reconfiguration of services due to the longer distances required to be travelled.

.
Patient stability during long road journeys
Although Safe and Sustainable has used a timescale for retrievals of 3 hours there are patients in whom the length of transfers may have an impact on their outcome. This becomes more significant at a time of poor weather or significant traffic flow when even short road journeys can be extended indefinitely.

Communication with Clinical Teams
In the current service model, Embrace conference calls all relevant clinical staff into telephone discussions. In the options where Leeds is not the cardiac surgical centre there will be multiple centres that need to be included in discussions dependant upon which part of the region the patient comes from.

7. Summary

Within the Safe and Sustainable consultation paper, the impact of the transport of cardiac children for cardiac surgery to new designation centres has not been fully explored.

It is unclear within this region as to the impact upon the Embrace transport service. Transport services have been set up to meet specific models of care with their patient flows. It is unlikely that any transport service will be able to meet a significant increase in demand for its service without further financial investment.

Embrace have had limited contact with transport services from other regions regarding paediatric cardiac activity. Therefore the assumption is that overall activity and impact on paediatric and neonatal transport services is presently unknown.

The drive to reduce transportation time is leading to the exploration of air transportation which again would need financial investment.

Recommendations:

1. Embrace would recommend that further work is under taken to explore the impact on transport networks nationally of the options described within the Safe and Sustainable review.
2. That further work is undertaken as to the financial implications of the developments required by Embrace to meet the increased workload of the service under each of the four options of the Safe and Sustainable review.

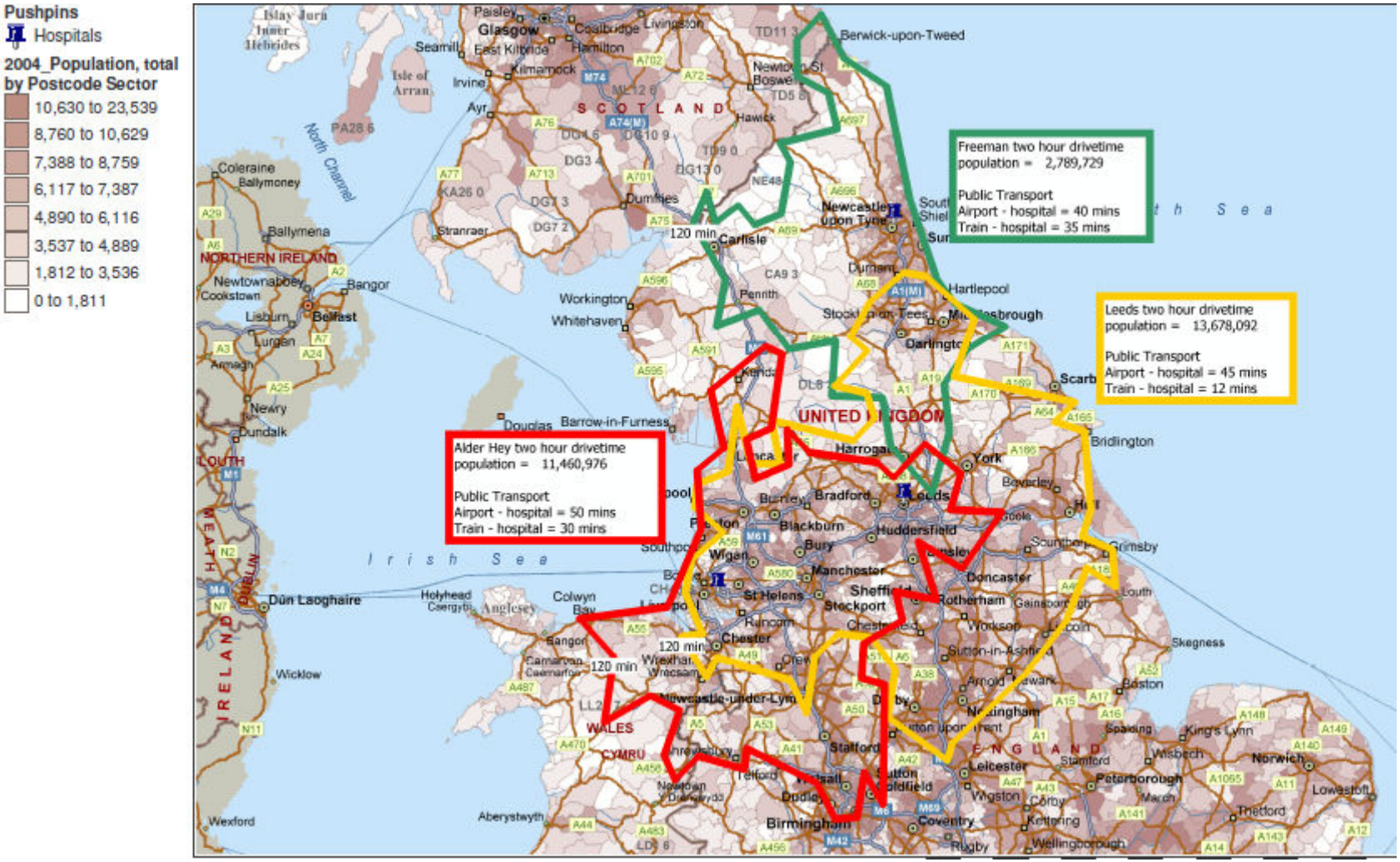
Appendix 1: Model to describe the effect of the Safe and Sustainable Children's Cardiac Surgery Review upon Embrace, the Yorkshire and Humber Infant and Children's Transport Service

	Initial Referral to Cardiac Centre			Estimation of 50% requiring repatriation			Total Transport (NB this excludes handover, stabilisation time)		
	No of cardiac referrals retrievals	Mileage Undertaken	Transport Time for Referral	No of back transfers	Mileage Undertaken	Transport time for Back Transfer	Total Transfers	Total Mileage	Total Hours
	No	Miles	Hours - decimal	No	Miles	Hours - decimal	No	Miles	Hours - decimal
Option D - current pathway no Leeds activity to transport	224.0	19,597.0	454.0	112.0	9,798.5	227.0	336.0	29,395.5	681.1
Option A includes Leeds activity	412.0	88,845.7	1,755.6	206.0	44,422.9	877.8	618.0	133,268.6	2,633.4
Option B or C includes Leeds Activity	412.0	92,847.3	1,910.7	206.0	46,423.7	955.3	618.0	139,271.0	2,866.0

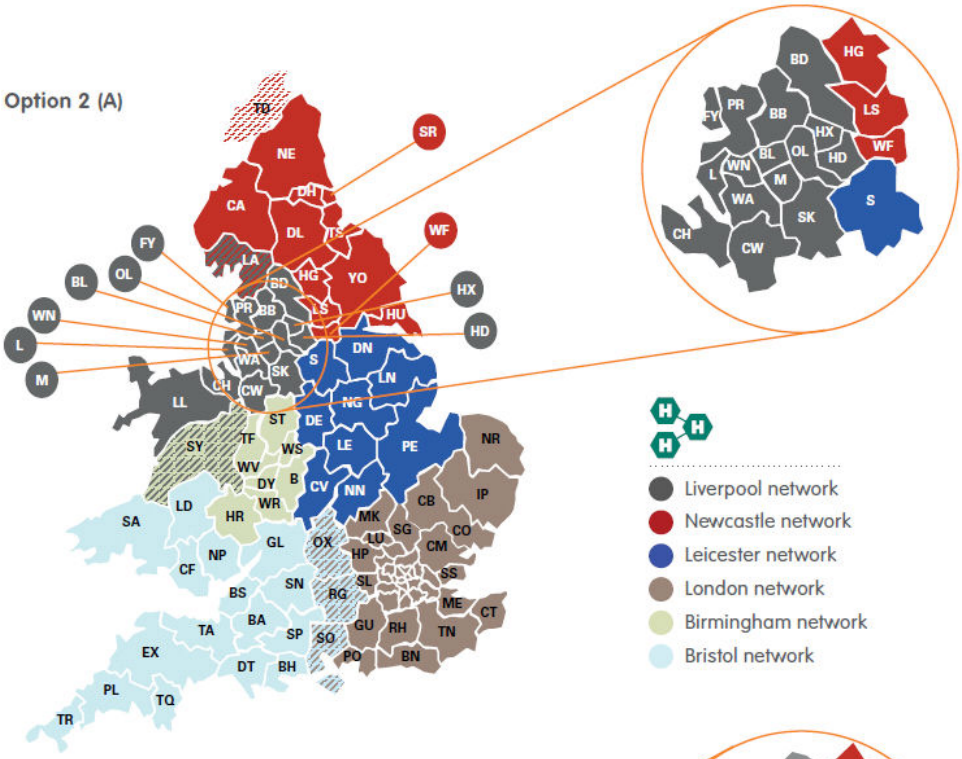
Assumptions:

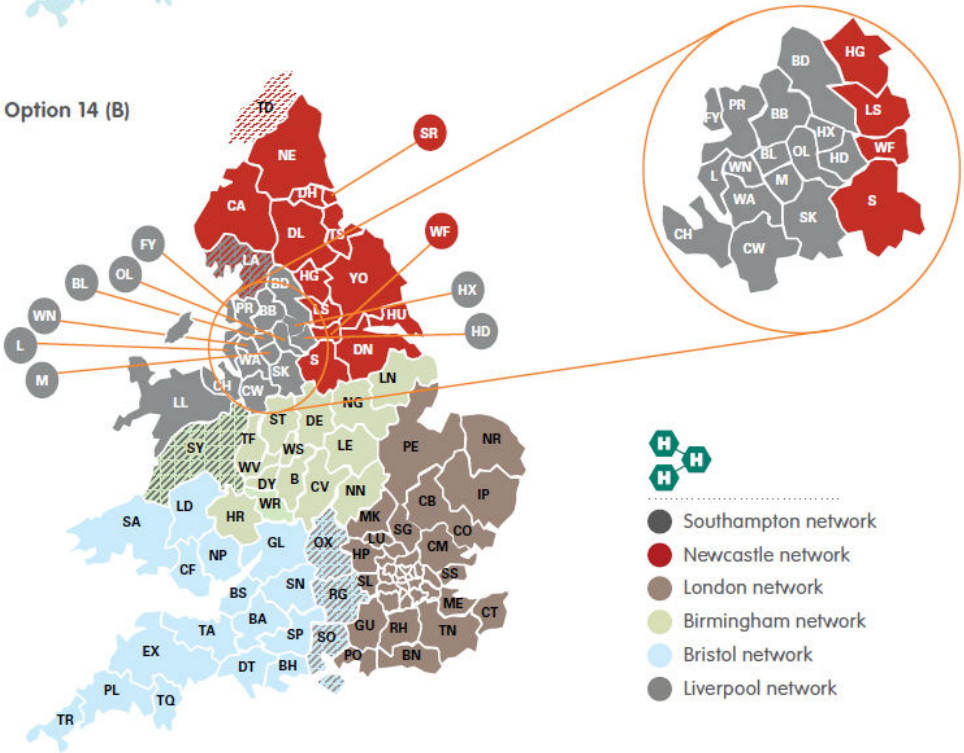
1. All cardiac activity presently undertaken by Embrace is transferred out to the designated cardiac surgical centre.
2. LGI will transfer out its present cardiac activity.
3. 50% of transfers out will require repatriation through back transfers by Embrace.
4. There is no change in the length of stabilisation and handover times.

Appendix 1
Two hour travel time map



Appendix 3
Travel times Options A-D





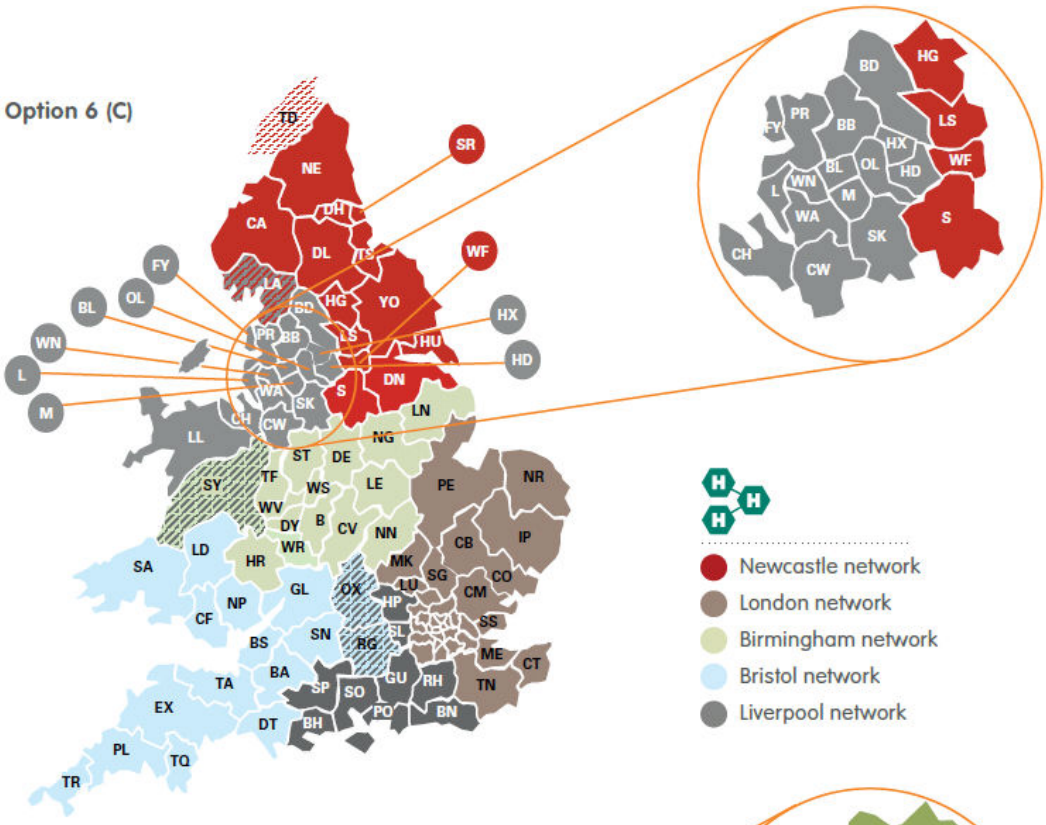
APPENDIX 1

	Option A				
Local Hospital	**Designation**	**Distance (Miles)**	**Travel Time**	**Excess Distance (Miles)**	**Excess Travel Time**
Airedale DGH	Liverpool	70	1hr 31min	48	41min
Barnsley DGH	Leicester	76	1hr 24min	54	52min
Bassetlaw Hospital, Worksop	Leicester	59	1hr 13min	11	12min
Bradford Royal Infirmary	Liverpool	66	1hr 21min	54	30min
Calderdale Royal Hospital, Halifax	Liverpool	56	1hr 6min	35	35min
Chesterfield Royal Infirmary	Leicester	50	1hr	-2	-3min
Dewsbury DGH	Newcastle	113	2hr 13min	103	1hr 47min
Diana Princess of Wales Hospital, Grimsby	Leicester	120	2hr 10min	41	38min
Doncaster Royal Infirmary	Leicester	73	1hr 23min	39	36min
Friarage Hospital, Northallerton	Newcastle	60	1hr 18min	10	14mins
Goole DGH	Leicester	90	1hr 38min	54	51mins
Harrogate DGH	Newcastle	85	1hr 44min	69	69mins
Huddersfield Royal Infirmary	Liverpool	54	1hr 3min	35	36mins
Hull Royal Infirmary	Newcastle	144	2hr 41min	84	90mins
Leeds General Infirmary	Newcastle	100	2hr 1min	100	2hr 1 min
Pinderfields General Hospital, Wakefield	Newcastle	104	2hrs	92	1hr 35min
Pontefract General Infirmary, Pontefract	Newcastle	112	2hrs 10min	95	1hr 42 min
Rotherham DGH	Leicester	63	1hr 11min	27	25min
Scarborough DGH	Newcastle	96	2hr 21min	28	37min
Scunthorpe DGH	Leicester	94	1hr 41min	41	1hr 38min
Sheffield Children's Hospital	Leicester	69	1hr 21min	33	30min
York DGH	Newcastle	88	1hr 56min	62	1hr 67min

APPENDIX 1

	Option B				
Local Hospital	**Designation**	**Distance (miles)**	**Travel Time**	**Excess Distance (Miles)**	**Excess Travel Time**
Airedale DGH	Liverpool	70	1hr 31min	48	41min
Barnsley DGH	Newcastle	120	2hr 15min	98	1hr 43min
Bassetlaw Hospital, Worksop	Newcastle	132	2hr 30min	84	1hr 29min
Bradford Royal Infirmary	Liverpool	66	1hr 21min	54	1hr 11 min
Calderdale Royal Hospital, Halifax	Liverpool	56	1hr 6min	35	35mins
Chesterfield Royal Infirmary	Newcastle	142	2hr 42min	90	1hr 39 min
Dewsbury DGH	Newcastle	113	2hr 13min	103	1hr 47min
Diana Princess of Wales Hospital, Grimsby	Newcastle	164	3hr 3min	85	1hr 31min
Doncaster Royal Infirmary	Newcastle	119	2hr 17min	85	1hr 30min
Friarage Hospital, Northallerton	Newcastle	60	1hr 18min	10	14min
Goole DGH	Newcastle	120	2hr 17min	84	1hr 30min
Harrogate DGH	Newcastle	85	1hr 44min	69	1hr 9 min
Huddersfield Royal Infirmary	Liverpool	54	1hr 3min	35	36mins
Hull Royal Infirmary	Newcastle	144	2hr 41min	84	90mins
Leeds General Infirmary	Newcastle	100	2hr 1min	100	2hr 1 min
Pinderfields General Hospital, Wakefield	Newcastle	104	2hrs	92	1hr 35min
Pontefract General Infirmary, Pontefract	Newcastle	112	2hrs 10min	95	1hr 42 min
Rotherham DGH	Newcastle	134	2hr 29min	98	1hr 43min
Scarborough DGH	Newcastle	96	2hr 21min	28	37min
Scunthorpe DGH	Newcastle	138	2hr 34min	85	1hr 31min
Sheffield Children's Hospital	Newcastle	134	2hr 35min	98	1hr 44min
York DGH	Newcastle	88	1hr 56min	62	1hr 67min

APPENDIX 1


Option 6 (C)
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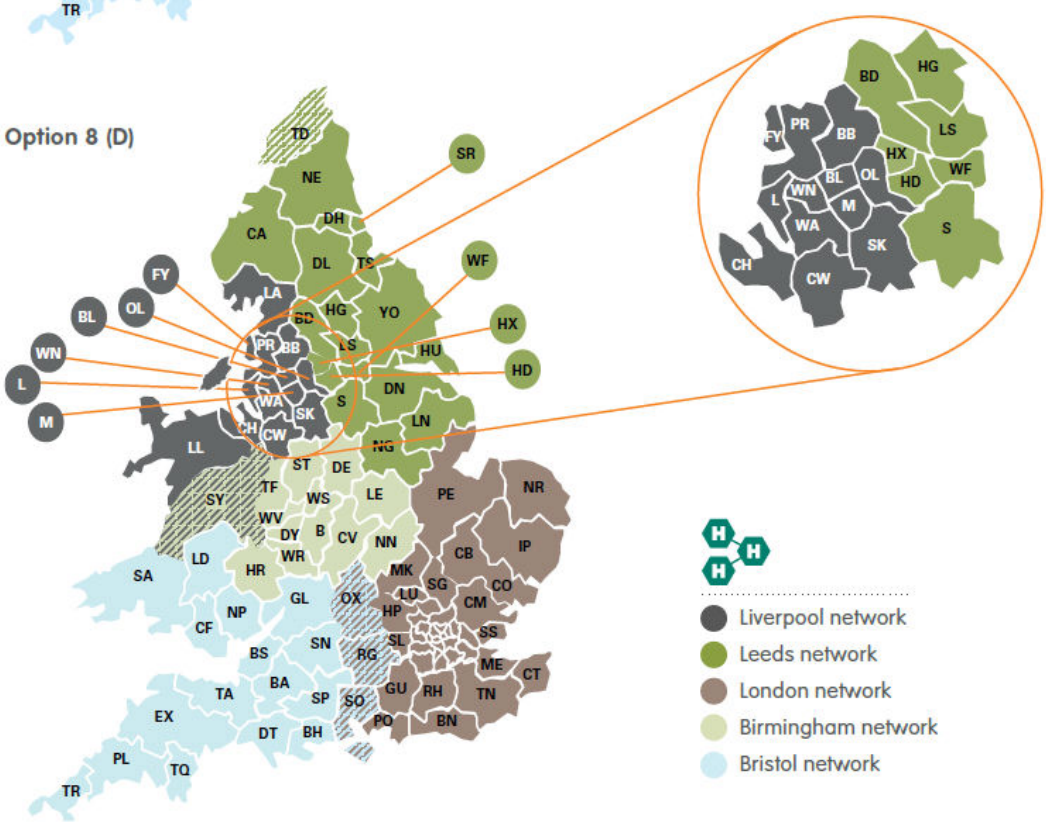
Bristol network
Liverpool network


Option 8 (D)
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Leeds network
London network
Birmingham network
Bristol network

APPENDIX 1

	Option C				
Local Hospital	**Designation**	**Distance (miles)**	**Travel Time**	**Excess Distance (Miles)**	**Excess Travel Time**
Airedale DGH	Liverpool	70	1hr 31min	48	41min
Barnsley DGH	Newcastle	120	2hr 15min	98	1hr 43min
Bassetlaw Hospital, Worksop	Newcastle	132	2hr 30min	84	1hr 29min
Bradford Royal Infirmary	Liverpool	66	1hr 21min	54	1hr 11 min
Calderdale Royal Hospital, Halifax	Liverpool	56	1hr 6min	35	35mins
Chesterfield Royal Infirmary	Newcastle	142	2hr 42min	90	1hr 39 min
Dewsbury DGH	Newcastle	113	2hr 13min	103	1hr 47min
Diana Princess of Wales Hospital, Grimsby	Newcastle	164	3hr 3min	85	1hr 31min
Doncaster Royal Infirmary	Newcastle	119	2hr 17min	85	1hr 30min
Friarage Hospital, Northallerton	Newcastle	60	1hr 18min	10	14min
Goole DGH	Newcastle	120	2hr 17min	84	1hr 30min
Harrogate DGH	Newcastle	85	1hr 44min	69	1hr 9 min
Huddersfield Royal Infirmary	Liverpool	54	1hr 3min	35	36mins
Hull Royal Infirmary	Newcastle	144	2hr 41min	84	90mins
Leeds General Infirmary	Newcastle	100	2hr 1min	100	2hr 1 min
Pinderfields General Hospital, Wakefield	Newcastle	104	2hrs	92	1hr 35min
Pontefract General Infirmary, Pontefract	Newcastle	112	2hrs 10min	95	1hr 42 min
Rotherham DGH	Newcastle	134	2hr 29min	98	1hr 43min
Scarborough DGH	Newcastle	96	2hr 21min	28	37min
Scunthorpe DGH	Newcastle	138	2hr 34min	85	1hr 31min
Sheffield Children's Hospital	Newcastle	134	2hr 35min	98	1hr 44min
York DGH	Newcastle	88	1hr 56min	62	1hr 67min

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	Option D				
Local Hospital	**Designation**	**Distance (miles)**	**Travel Time**	**Excess Distance (Miles)**	**Excess Travel Time**
Airedale DGH	Leeds	22	50min	0	0
Barnsley DGH	Leeds	22	32min	0	0
Bassetlaw Hospital, Worksop	Leeds	48	1hr 1min	0	0
Bradford Royal Infirmary	Leeds	12	30min	0	0
Calderdale Royal Hospital, Halifax	Leeds	21	31min	0	0
Chesterfield Royal Infirmary	Leeds	52	1hr 3min	0	0
Dewsbury DGH	Leeds	10	26min	0	0
Diana Princess of Wales Hospital, Grimsby	Leeds	79	1hr 32min	0	0
Doncaster Royal Infirmary	Leeds	34	47 min	0	0
Friarage Hospital, Northallerton	Leeds	50	1hr 4min	0	0
Goole DGH	Leeds	36	47min	0	0
Harrogate DGH	Leeds	16	35min	0	0
Huddersfield Royal Infirmary	Leeds	19	27min	0	0
Hull Royal Infirmary	Leeds	60	1hr 11min	0	0
Leeds General Infirmary	Leeds	0	0	0	0
Pinderfields General Hospital, Wakefield	Leeds	12	25mins	0	0
Pontefract General Infirmary, Pontefract	Leeds	17	28mins	0	0
Rotherham DGH	Leeds	36	46min	0	0
Scarborough DGH	Leeds	68	1hr 44min	0	0
Scunthorpe DGH	Leeds	53	1hr 3min	0	0
Sheffield Children's Hospital	Leeds	36	51min	0	0
York DGH	Leeds	26	49min	0	0

APPENDIX 1

Appendix 4
Examples of travel times in the Yorkshire and Humber Region

KEY using travel time and not distance

	quickest travel time
	medium travel time
	longest travel time

LV - ALDERHEY	**L12 2AP**
LS - LEEDS	**LS1 3EX**
NE - NEWCASTLE	**NE7 7DN**

source AA route planner

Town/suburb	postcode from	to	distance	travel time
Bradford City Centre	**BD1**	**LV**	**66 m**	**1 hr 10 m**
	BD1	**LS**	**9.9 m**	**20 mins**
	BD1	**NE**	**103.6 m**	**2 hr 5 mins**
Skipton	**BD23**	**LV**	**70.3 m**	**1 hr 22 mins**
	BD23	**LS**	**26.6 m**	**40 mins**
	BD23	**NE**	**100.1 m**	**2 hr 4 mins**
Doncaster City Centre	**DN1**	**LV**	**97 m**	**1 hr 43 mins**
	DN1	**LS**	**33.3 m**	**45 mins**
	DN1	**NE**	**118.8 m**	**2 hr 12 mins**
Goole	**DN14**	**LV**	**92.8 m**	**1 hr 39 mins**
	DN14	**LS**	**29.9 m**	**42 mins**
	DN14	**NE**	**114.8 m**	**2 hr 11 mins**
Grimsby	**DN31**	**LV**	**141.7 M**	**2 hr 30 mins**

	DN31	LS	78.1 m	1 hr 33 mins
	DN31	NE	163.8 m	3 hr 2 mins
Halifax City Centre	HX1	LV	59.3 M	1 HR 5 mins
	HX1	LS	16.6 M	24 mins
	HX1	NE	120.9 m	2 hr 12 mins
Sowerby Bridge	HX6	LV	53 m	1 hr 1 min
	HX6	LS	19.3 m	27 mins
	HX6	NE	123.7 m	2 hr 14 mins
Sheffield City Centre	S1	LV	78.5 m	1 hr 36 mins
	S1	LS	35.4 m	46 mins
	S1	NE	133.7 m	2 hr 26 mins
Barnsley	S73	LV	77.2 m	1 hr 32 mins
	S73	LS	27.1 m	37 mins
	S73	NE	125 m	2 hr 18 mins
Hope Valley	S33	LV	66.2 m	1 hr 28 mins
	S33	LS	44.3 m	1 hr
	S33	NE	142.6 m	2 hr 46 min
Leeds City Centre	LS1	LV	70.3 m	1hr 14 mins
	LS1	LS	0	0
	LS1	NE	101.9 m	1hr 56 mins
Morley	LS27	LV	66.4 m	1hr 10 mins
	LS27	LS	7.6 m	13 mins
	LS27	NE	109.3 m	1hr 59 mins

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Wakefield City Centre	WF1	LV	69.4 m	1hr 19 mins
	WF1	LS	13.3 m	20 mins
	WF1	NE	115.5 m	2 hr 5 mins
Ossett	WF5	LV	65.6 m	1hr 14 mins
	WF5	LS	15.6 m	24 mins
	WF5	NE	113.8 m	2hr 1 min
Hull City Centre	HU1	LV	124.3 m	2hr 7 mins
	HU1	LS	60.6 m	1hr 10 mins
	HU1	NE	146.3 m	2hrs 39 mins
Hornsea	HU18	LV	143.3 m	2hr 40 mins
	HU18	LS	79.6 m	1hr 43 mins
	HU18	NE	135.1 m	3 hr
York City Centre	YO1	LV	98 m	1hr 48 mins
	YO1	LS	24.7 m	40 mins
	YO1	NE	92.5 m	1hr 49 mins
Heslington	YO10	LV	100 m	1hr 51 mins
	YO10	LS	26 7 m	42 mins
	YO10	NE	93.8 m	1hr 51 mins

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