

## Board of Directors (in Public)

### Item 3.3

**Subject:** Transition of ACHD Service – Evaluation of Financial & Operational Impact  
**Date of Meeting:** 5th March 2019  
**Prepared by:** Dr Vishal Sharma – Clinical lead ACHD Implementation; Frankie Morris - DCFO  
**Presented by:** Dr Raphael Perry - Medical Director  
**Purpose:** For note

BAF Ref	Impact on BAF
1.3, 3.1	Possible impact on financial stability; need to ensure outstanding patient care and adherence to NHS E standards

#### 1. Executive Summary

The NW ACHD service transitioned to the Liverpool Partnership through 2018 commencing in September 2018. Staff recruitment has been better than anticipated and serves the whole network.

The service has provided good safe care to the ACHD patient population but there is a need to improve access times and the MDT process

The activity has lagged in some areas due to the extreme pressure on the OPD service after the collapse of services in Manchester

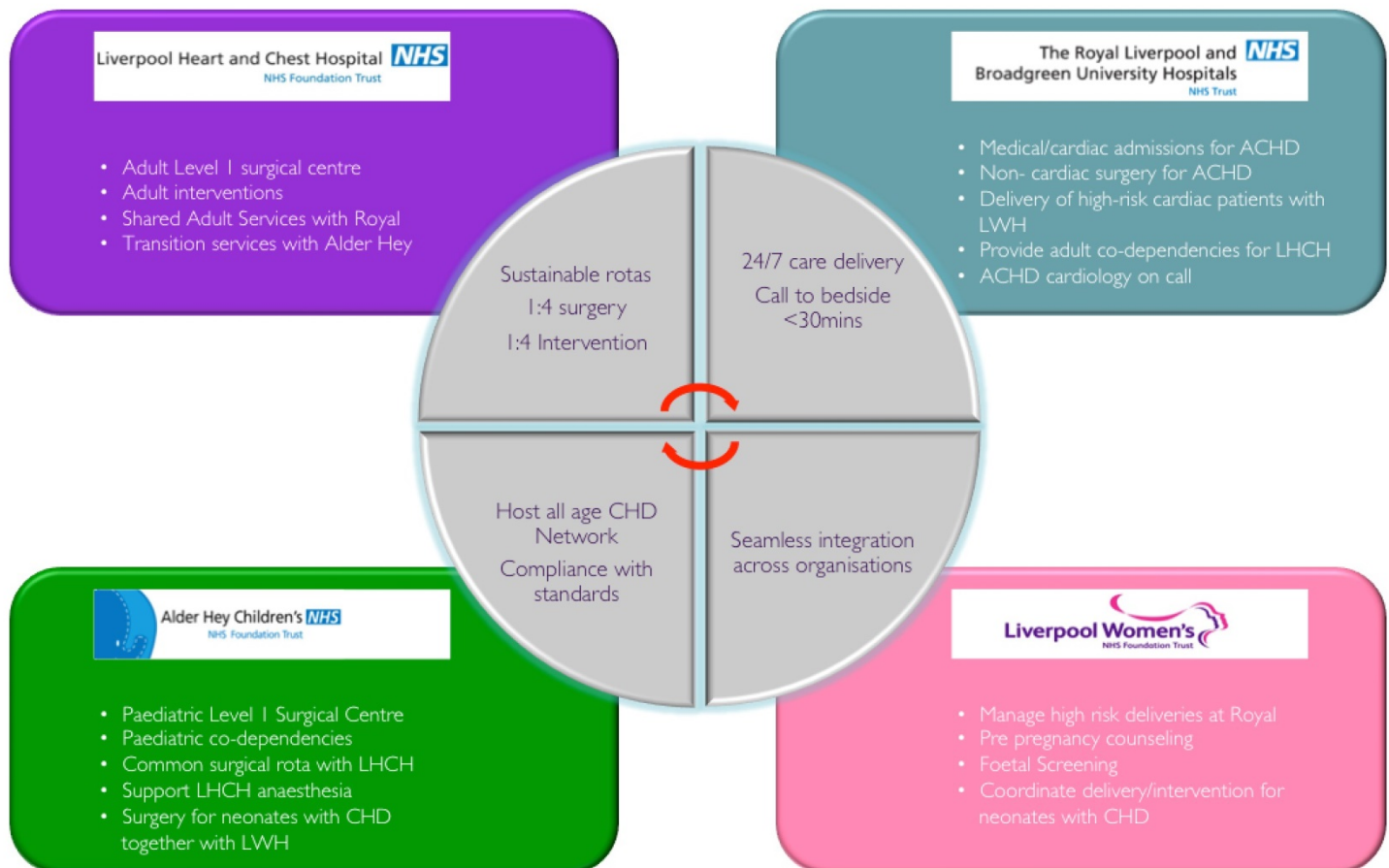
The financial model is being refined as the service develops

#### 2. Background

Congenital Heart disease affects up to 1% of live births. In some cases, the congenital heart disease is mild but in others the disease can be extremely complex. Many babies would die without early corrective surgery. With the improvement in cardio-surgical techniques and increased expertise, it is now expected that the vast majority of patients who undergo cardiac surgery as a child will survive into adulthood. Indeed since 2010, there are now more adults alive with a diagnosis of congenital heart disease than there are children. These patients are at risk of developing late complications, require lifelong follow up and often need further revision surgery. In addition, their underlying cardiac condition complicates other conditions such as pregnancy, non-cardiac operations and if they become unwell for other medical reasons. These patients also often have coexistent congenital conditions and there is a high incidence of learning difficulties amongst this patient cohort. It is a rapidly growing area of cardiology and cardiac surgery and requires a multi-disciplinary approach to care.

The provision of congenital cardiac services within the North West was unique in that the paediatric Level 1 Specialist Hub was based at Alder Hey Children's hospital in Liverpool, with the Adult Level 1 Specialist Hub based in Manchester. This configuration original rose due to the fragmented nature of specialist adult services in Liverpool, with vital services spread across multiple organisations on different sites. However, this two city model has caused enormous difficulties in providing sustainable on call rotas and made it extremely difficult to transition patients from paediatric to adult care, with many patients being lost to follow up.

In response to this, the North West Congenital Heart disease partnership was formed. This comprised Alder Hey Children's NHS Foundation Trust, Liverpool Heart and Chest NHS Foundation Trust; Liverpool Women's NHS Foundation Trust and the Royal Liverpool



## Liverpool Congenital Heart Disease Service Model

A collaborative network model has been developed with a specialist (Level 1) centre in Liverpool (the Level 1 Centre) with a Level 2 centre in Manchester and Level 3 centres in Blackpool and Wrexham. Level 2 and 3 centres will be able to manage the majority of CHD patients in their catchment area; those requiring surgery or complex intervention and any complex patients requiring non-cardiac surgical care or specialist medical care will be managed at the Level 1 centre.

Given the provider landscape within Liverpool, the Level 1 service model requires staff within the four organisations to work as a single team, and able to provide care across all four sites that patients may receive care. Clinical pathways have been developed for the typical patient presentations. The paediatric service will continue relatively unchanged and will be delivered at Alder Hey hospital with outreach paediatric clinics undertaken as part of a network model, across the North West of England and North Wales. All of the paediatric surgery and intervention for the region will be performed at Alder Hey. Adult Cardiac Surgery and Cardiac Intervention will be performed at Liverpool Heart and Chest Hospital, Medical admissions and non-cardiac surgery will be managed at the Royal Liverpool hospital and obstetric care will be supported by Liverpool Women's hospital

### 3. Review of the first 6 months of the service

#### Key changes to the outline business model

It was initially envisaged that CHD services would continue in Manchester whilst the Level 1 service in Liverpool was established. However due to extensive delays in the NHS England led consultation together with the uncertainty as to whether the Liverpool or Manchester would be commissioned to provide Level 1 services, a number of key clinical staff left Manchester Foundation Trust (MFT) to take up posts elsewhere. Consequently, the Level 1 service in the North West for adult CHD patients collapsed. This led to the requirement to develop Level 1 services in Liverpool whilst maintaining Level 2 adult CHD services in Manchester.

Following the decision to award Level 1 services to Liverpool, the 2-full time ACHD consultants based in Manchester and the 4 specialist nurses were transferred over to Liverpool via a Transfer of Undertakings (Protection of Employment) process taking effect from the 1st April 2018. However, as the Level 1 service had not yet been set up, they continued to work at Manchester Foundation Trust until the Level 1 service went live on the 4th September. In addition, due to the ongoing requirement to support both Level 2 ACHD services and ACHD-Pulmonary Hypertension Services in Manchester, 1 WTE (out of the 4 WTE) ACHD consultant continues to be deployed in Manchester via a service level agreement.

NHS England commissioned MFT separately as a level 2 centre and MFT they initially planned to recruit their own consultant and specialist nursing staff. Whilst they were able to recruit nursing staff, they were unable to appoint ACHD consultants who were willing to be based solely in the Level 2 centre. Consequently, as a result of this LHCH were approached by MFT to consider appointing consultants on a Network basis. Under this model, LHCH would appoint the ACHD consultants at the Level 1 centre but would provide outreach support to the Level 2 centre at Manchester. It was agreed to fund an additional 2 consultant posts on this basis, increasing the number of full time ACHD consultants to 6. However, to date one of these posts remains vacant.

We have conducted a review of the service for the 6 months since it went live on the 4th September. The main findings from the different components of the service are outlined below:

## Adult Congenital Cardiac Surgery at LHCH

Until the end of January there have been 22 surgical admissions. Of these, 18 patients were elective and 4 were performed as urgent/emergency cases. This is against an expected number of ~38 cases (based on 2 cases per week once the service is fully established). However, it was expected that the service would begin slowly during the implementation phase and a representation was made to NHS England for pump priming costs to offset some of this short fall. The surgical case mix is included in table 1:

The mean length of stay on critical care was 2.8 days. However, this data is right skewed as result of a small number of prolonged stays. The median length of stay was 1 day (IQR 1-4). The total number of critical care bed days was 59, equating to an average of 0.4 beds per day (0.8 beds per day were included in the business case).

aortic valve replacement	6
mitral valve replacement	2
pulmonary valve replacement	3
Septal defect	3
anomalous pulmonary veins	2
Multiple procedures	2
Pericardial drain	2
conduit	1
other	1

Table 1. Cardiac Surgery case mix for ACHD at LHCH

There were 4 patients readmitted to critical care. There were 5 recorded complications. One patient required ECMO support, 2 required pericardial drainage, 1 required drainage of a chest wall collection and 1 required a re-exploration.

## Adult Congenital Cardiac Intervention at LHCH

The cardiac interventional activity to date for ACHD is shown in table 2

<i>Interventional</i>	
ASD closures	7
Coarctation stents	3
Percutaneous Pulmonary Valve Implantation	2
Baffle stent	1
Aortic Valvuloplasty	1
<i>Diagnostic</i>	
Diagnostic catheters (General anaesthesia)	4
Diagnostic catheters (Local anaesthesia)	16
Mechanical valve fluoroscopy	2

Table 2. Interventional Activity at LHCH (NB from 1st Oct 2018 to 20th Feb 2019)

#### Waiting time from listing

The intervention service went live in October. There are two all day complex lists per month on a Tuesday and two 'simple' lists per months on a Friday. Only one of the simple lists has general anaesthesia cover. Due to limited capacity to discuss cases at the multi- disciplinary team meetings, there isn't a large waiting time for these patients. The waiting time for complex ACHD interventional lists is longer at around two months.

The lists have been performed exclusively by Dr Aggrawal (nine days) and Dr Shauq (seven days). The other congenital interventionists based at Alder Hey will commence cases at LHCH in March 2019. To date there have been two lists lost due to unavailability of general anaesthetic cover.

#### Morbidity and Mortality

There have been no post procedural deaths. One patient developed a large superficial haematoma but this did not require blood transfusion or intervention.

#### Areas for improvement

Currently patients are being reviewed in the routine ACHD clinics rather than in dedicated post-procedural intervention clinics. The intention is to develop dedicated interventional follow clinics. In addition, the listing process could be improved and to facilitate this there is now a weekly listing meeting. This will be aided by increased availability of the interventional team from Alder Hey.

#### **Multi-disciplinary Team (MDT) meetings**

All ACHD surgical and interventional cases require discussion at a multi-disciplinary team meeting. NHS England stipulated strict timelines for the setting up of a robust North-West MDT process. There was a longstanding process in place for discussion of paediatric cases. However, following the collapse of the service at Manchester, there was no such process in place for adult CHD patients; only once-monthly MDT's occurring at MFT, supported by Newcastle.

The first MDT meeting in Liverpool took place on the 23rd August 2018. For logistical reasons, this was held immediately after the paediatric MDT at Alder Hey. Since then there have been 29 meetings hosted by Liverpool. In addition, there have been three MDT meetings hosted by Manchester and supported by Newcastle. One of these was cut short due to IT problems with Newcastle.

#### Waiting times for MDT discussion

There was a historical backlog of patients waiting to be discussed when the service went live in September 2018. As of the 18th February, there are 62 patients awaiting discussion, 10 of whom are considered to be clinically urgent. LHCH is the referring hospital for 27 of these cases, Manchester for 34 and Blackpool for 1. Of these patients, 43 have been waiting longer than 6 weeks. The waiting times are outlined below. Of those waiting more than 100 days, the patients were previously on an RTT pathway with Newcastle and have been repatriated via patient choice to Liverpool. Whilst these patients will be offered a slot as soon as possible, discussions are being undertaken with NHS England as to whether a new RTT pathway should be commenced following the repatriation to the North West.

Length of days wait	Number of patients		Length of days wait	Number of patients		Length of days wait	Number of patients
>300	1		>200	1		>150	2
>100	1		>90	1		>80	4
>70	1		>60	6		>50	4
>40	1		>30	3		>20	4
>10	4		< 10	10			

Table 3. The waiting times for patients listed for MDT discussion

#### MDT outcomes as of 18th February 2018

The outcomes of the MDT discussion are shown in Table 4.

Year	Outcome	Numbers	Comments
2018	Surgery	17	Liverpool cases only
	Intervention	33	Includes intervention + EPS/device combined
	Medical f/u	21	
2019	Surgery	7	
	Intervention	12	
	Medical f/u	9	

Table 4. Outcomes of the MDT discussion

#### Overview of the MDT process

The Adult MDT process was set up as the service went live and has been occurring on a weekly basis. It is generally well attended although it would benefit from the availability of more CHD surgical and interventional staff. In addition, provision of dedicated CHD radiologist support is lacking but this is planned to be addressed from April. There is a clear standard operating procedure and pathway in place for discussion of patients and this is followed by all consultants. The process is recorded electronically with records available at Alder Hey from 2011. A register of attendance is kept each week. In terms of quality assurance and peer review, there is good evidence in place of a robust MDT process. A dedicated all-age MDT coordinator was appointed and commenced in post from February 2019.

There are some ongoing challenges with the MDT. The biggest challenge is the lack of adult MDT capacity with only 1 hour allocated for this each week. This is principally determined by the lack of availability of the CHD surgical and interventional staff based at Alder Hey. This has resulted in not only a failure to work through the backlog of historical cases but some lengthening of the waiting time as more patients are being listed than can be discussed. There have also been IT issues with the set up at Alder Hey resulting in important images being unavailable for review. A work around to solve this issue was put in place on the 18th February and will hopefully improve this aspect. In addition, there have been some issues with patients being listed before all information was available requiring re-discussion.

## Mortality and Morbidity

There has been one death reported in a patient on the MDT waiting list. This relates to a patient listed prior to Liverpool hosting the MDT. The patient was originally listed for ACHD-MDT on 08/03/17 and was discussed with the Newcastle team on 04/07/17. It was decided that the patient should be reviewed in a clinic at Manchester to discuss possible surgery or intervention. Unfortunately, the patient was not seen in this clinic as they did not want to be treated in Newcastle. The administration team in Manchester sent a referral listing card for MDT discussion in January 2019 (although the listing card was dated 23/08/18). In view of the date on the listing card, the patient was prioritised for an urgent MDT discussion which was planned for 14/02/2019 but during preparations for the MDT, it transpired that the patient had died on the 29/01/2019.

## Steps in place to reduce the waiting time for the MDT

In order to reduce the waiting list for discussion a number of steps have been undertaken over the last few months. However, a number of challenges have prevented these from being implemented.

1. To deliver additional adhere MDTs on Saturdays and evenings. A number of dates for these have been proposed with the aim to discuss 20 patients on a given Saturday and 10 in an evening. However, these have been unable to go ahead due to unavailability of the CHD surgeons.
2. To move the adult MDT to Thursday afternoon at LHCH. This would enable a longer period to discuss adult patients and also allow attendance of the ACHD radiologists. There have been problems identifying a suitable venue for this at LHCH, particularly one with the necessary video-conferencing facilities to allow attendance from other spokes from the North West. A capital bid to procure MDT and VC equipment was unsuccessful. A temporary venue has been found and the hope is that an adult MDT can be established at LHCH from April. There is still some uncertainty however as to whether all staff groups will be able to attend and ensure the meeting is quorate.

## **Outpatient Activity at LHCH**

In the original business case, it was envisioned that there would be four LHCH based WTE ACHD consultants and that they would undertake three clinics per week each. The standard clinic template was planned to be eight patients comprising two new and six follow ups.

However, a number of important changes have occurred to this assumption. Firstly, although there have been four ACHD cardiologists in post (fifth additional from February 2019), in effect one FTE is based in Manchester leaving only three for LHCH/Liverpool partnership. Each week one is rostered to the RLUH the majority of the time doing a hot week. It was planned that during the on-call hot week that some urgent clinics would be undertaken at the Royal Liverpool Hospital. Due to operational difficulties at the Royal Liverpool these have not yet been set up. However, we are assured that these will commence imminently. Finally, due to the collapse of the service in Manchester, a significant backlog of patients in Manchester has developed. Many of these patients have not been seen for some time and are now being offered appointments in Liverpool. Due to these delays in review and because many are now being seen as the result of a new referral into the system, these patients are being seen as new patients, thereby changing the balance between new and follow ups. This has also reduced the overall number of patients that can be seen in a single clinic. (Table 5 and 6)



Table 5. Number of new patients seen within ACHD

	Sep	Oct	Nov	Dec	Jan	Total
RA	10	14	24	29	28	105
JD	5	5	17	11	7	45
PJ	3	14	29	1	12	59
VP	6	21	30	28	24	109
Sp Nurse	120	277	143	85	140	765
Total	144	331	243	154	211	1083

Table 6. Number of follow up patients seen within ACHD

	Sep	Oct	Nov	Dec	Jan	Total
RA	9	4	2	7	5	27
JD	3	5	1	1	3	13
PJ	3	0	1	1	2	7
VP	12	3	3	5	6	29
Sp Nurse*	12	10	0	0	0	22
Total	39	22	7	14	16	98

\*The specialist nurse clinic attendances relate mainly to calls to the nurse led helpline.

In addition, there have been 192 ACHD patients seen by the visiting ACHD consultants from Alder Hey.

### Calls to ACHD nurse Led Helpline

There have been a total of 1695 calls received to the help line between September 2018 and the end of January 2019. The majority of these have been non-clinical.

Clinical calls	Non-clinical calls
506	1189

A snapshot audit of calls received in November revealed that there were 154 calls received. In 76 patients, complex advice was given or complex information discussed with the patient. In addition, 30 clinical assessments were made. 3 patients were referred to the cardiac-obstetric service and 3 patients were advised to attend A&E. However approximately 35 hospital/GP attendances were avoided.

Overall the phone line is working well. There is a high administrative burden, particularly if the patient is not known to LHCH and hence needs to be entered onto EPR. There is a high number of non-clinical calls which currently are not attracting tariff income. Further work is ongoing to review this burden and also develop clinical guidelines as to what constitutes a 'clinical call'



## ACHD Electrophysiology and Devices

In total there have been 22 device procedures in ACHD patients since the service went live. The case mix is outlined in table 7.

Pacing	PPM	ICD	CRT	Box Changes	Extractions
Number of Cases	3	3	6	4	4
Complications	2	0	0	0	0

Table 7. Device procedures in ACHD patients

### Waiting times

The average waiting time for elective device procedures is 40 days from listing. Listing of simple cases is relatively straightforward but there are some difficulties in finding theatre space for complex procedures such as system extraction followed by Mustard stent and re-implant. There is limited availability for general anaesthetic cover for pacing lists and this can introduce delays for cases in which this is required. Urgent cases that have required device extraction have been done within a matter of days.

### Theatre Utilisation

Theatre utilisation has been good with no cancellations due to lack of space. An additional theatre capacity or unused general anaesthesia supported sessions have been identified and additional cases listed to avoid these being wasted. The support from cardiac physiology has been very good.

### Physiology workload

Compared to the original business model, a higher proportion of devices than anticipated are being implanted in Liverpool. This is probably as a result of the collapse of the ACHD service in Manchester with subsequent drift of cases to Liverpool. Indeed, Manchester has started to refer routine box changes in ACHD patients to Liverpool. This has resulted in a pressure on cardiac physiology services and it is likely we will need to increase the number of physiologists. However, this additional activity was not included in the original business plan so the additional income via tariff should offset this cost. Indeed, the projected income from ACHD devices is £90k above plan for 2018/9.

### Complications

There have been 2 complications with one patient suffering a haematoma that required requiring explantation of the device and another having a lead displacement.

### Areas to address going forward

There is a requirement for more capacity to perform cases under general anaesthesia. Ideally these should be done on days when the cardiac surgeons are on site so that they could provide emergency surgical back up for high risk extraction device extractions. As

outlined above a greater provision of cardiac physiology is required to manage the increased number of procedures that are anticipated to be done at LHCH.

### **Electrophysiology Cases**

Overall there have been 18 cases undergoing ablation procedures with a further 3 undergoing diagnostic EP studies. There was one complication recorded which was a small pericardial effusion that did not require any intervention. The case mix for EP is outlined in table 8.

EP	EPS only	Flutter	AF	Atach
Number of Cases	3	11	6	2
Complications	1	0	0	0

Table 8. The case mix of EP studios undertaken in ACHD patients.

### **Waiting times**

The average time to elective procedure is approximately 2 months but due to some cases being historical, exact times are difficult to estimate. Complex procedures currently only occur on lists staffed by 2 consultants which occur once a fortnight. This limits capacity for complex cases.

### **Theatre Utilisation**

Lists are well scheduled with no cancellations due to lack of space or anaesthetics. All complex sessions have general anaesthetic support

### **Physiology workload**

There has been no additional impact from EP cases as ACHD activity has been accommodated within existing EP lab capacity. There has been some difficulty in accommodating the fact that many patients will need a full haemodynamic study as well as their EP procedure and if there is only 1 physiologist that can be difficult to manage.

### **Summary of EP and devices.**

The EP and devices service is fully up and running with sever complex cases done across both EP and devices. There have generally been good outcomes and a low level of complications. In particular several complex Fontan patients have undergone successful EP procedures with good improvement in symptoms and no arrhythmia recurrence to date. The major challenges going forward are the requirement for increased flexibility of acute cases and the need to consider additional cardiac physiology staff to support the increased work in cardiac devices.

### **ACHD Imaging**

Cardiovascular imaging is essential in the long-term care of adult congenital heart disease (ACHD). Periodic surveillance imaging is important for detecting haemodynamic changes, as the development of symptoms may occur late. The choice and frequency of imaging modality is determined by lesion-specific patient characteristics, strengths, and weaknesses of imaging modality and institutional resources and expertise. A multimodality imaging approach is often required to obtain all the necessary information. Indeed, compared to other areas of cardiology, ACHD patients require a much greater provision of cardiac imaging resources.

In addition, imaging in ACHD patients is often more complex than other areas within cardiology, requiring a higher level of expertise, with scans require longer to perform and report. this is often reflected in higher tariffs for imaging in ACHD patents provided they are correctly coded.

### **Echocardiography**

Currently, the ACHD team offers the following echocardiographic services:

- Transthoracic Echocardiography (TTE)
- Transesophageal Echocardiography (TOE)
- Peri-Surgical TOE
- Peri-Interventional TOE
- Diagnostic TOE
- TOE for direct current cardioversion

The echo services are provided by the ACHD consultants, three full time ACHD echocardiographers and in the perioperative setting by the cardiac anaesthetists. A small number of scans are performed by the general cardiac imaging department. The North-West CHD partnership purchased two dedicated echo machines with additional TOE probes following a successful application to NHS England for capital costs.

Outpatient Trans-thoracic Echocardiogram	464
Inpatient Trans-thoracic Echocardiogram	55
OP Trans-oesophageal Echocardiogram	1
Intraoperative Trans-oesophageal Echocardiogram	42
Periprocedural Trans-oesophageal Echocardiogram	32

Table 9: Echocardiography activity.

### **Summary of echocardiographic services**

Overall the service has developed well. Cardiac physiology is a national shortage specialty and ACHD trained echo sonographers are extremely rare. Despite this we have managed to recruit into the planned three sonographer posts. Echocardiograms are done to a high quality with structured reporting. Currently outpatient echocardiograms are performed on a one stop basis prior to seeing the consultant in the clinic. This means there is no significant waiting time for an echo but limits the number of echocardiograms that can be performed. the development of separate stand-alone echo lists is being considered.

### **Areas for development**

There is work to be done to ensure that all echocardiograms performed are reported on the system and correctly coded as ACHD. This is particularly important as the ACHD echocardiograms attract a significantly higher tariff, paid for by specialist commissioners. Another area for development is support for ACHD inpatients at the Royal Liverpool University Hospital. There is reluctance on the part of the general cardiac sonographers to

perform echocardiograms on these complex ACHD patients and provision needs to be made to facilitate the sonographers supporting the delivery of echocardiograms in these patients.

In addition, increased provision needs to be provided to support specialist echo services such as stress echo, bubble contrast and elective trans-oesophageal echo in ACHD patients. In the medium term as ACHD services increase, there will be additional requirement for more ACHD trained staff. Indeed, it is recommended that for every one WTE consultant, a provision is made for a 0.5 WTE sonographer. However, given the difficulty in recruitment, it is essential that there is high quality in-house training in ACHD echocardiography and a training programme has already been developed with sonographers from LHCH and RLBUHT undertaking training.

### **Cardiac CT & Cardiac CMR**

The current cross-sectional imaging service is provided by

1. Five Cardiac Radiologists
2. Two Imaging Cardiologists

Table 10. Activity from September 2018 until February 2019 (from coding data)

Cardiac MRI scan	82
Cardiac CT scan	7

The figures in table outline the number of scans coded as 'congenital'. However it is likely that these figures are a significant underestimate, particularly for Cardiac CT where there isn't a separate HRG code for congenital CT. There is significant work to be done to ensure that these scans are accurately coded as ACHD for accounting purposes. This is especially important for Cardiac CT to ensure that it is reimbursed by specialist commissioners.

### **Summary of Cardiac CT and CMR services.**

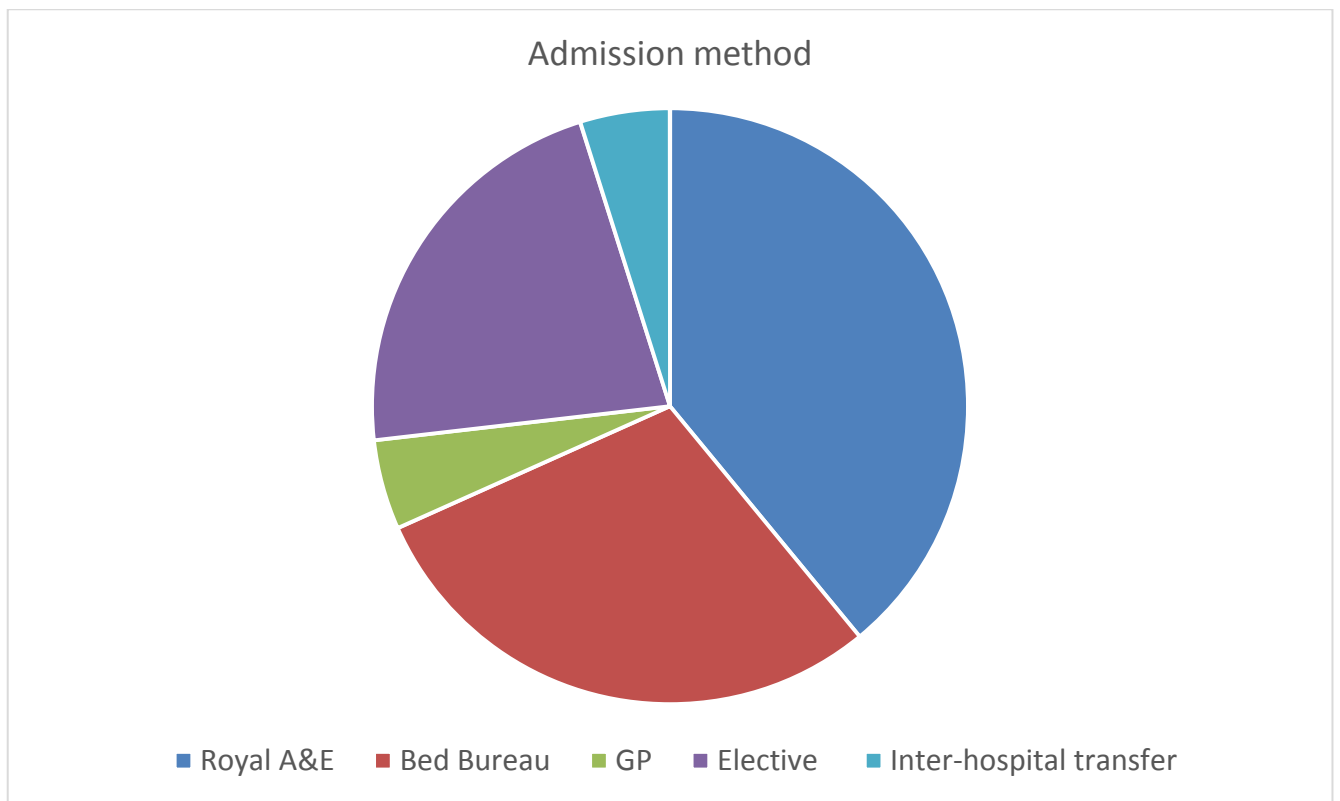
There was already a high volume Cardiac CT and Cardiac MRI service established at LHCH that was performing a relatively high number of scans in congenital patients. As a result there hasn't been any significant problem with the development of this service although there are general capacity pressures within radiology. These will be eased by the introduction of new scanners in 2019.

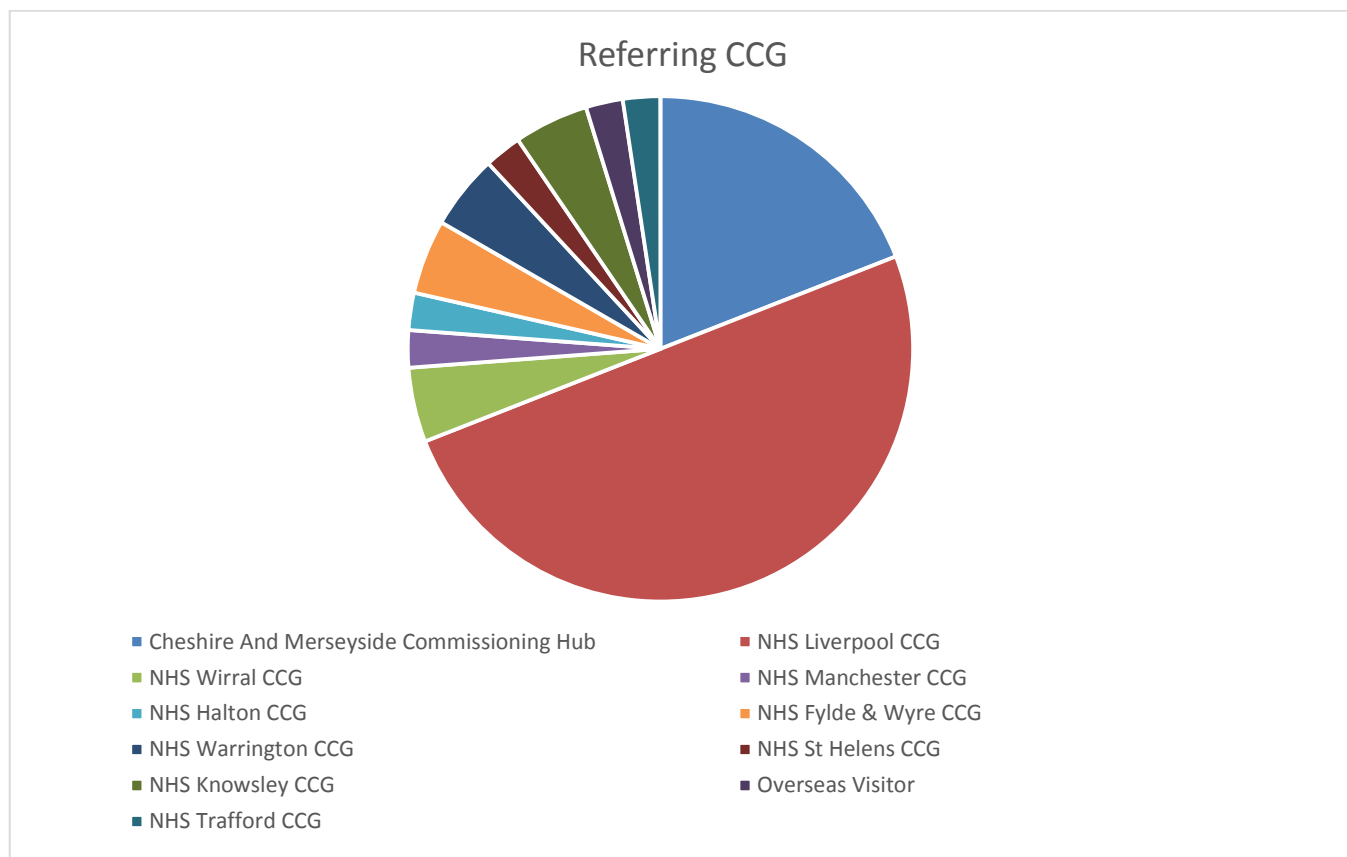
There needs to be further work in standardisation of protocols not only within LHCH but across the North-West network. There are some challenges in supporting ACHD imaging,

particularly out of hours at the Royal Liverpool hospital and further training and support of the radiographers is required. A better way to identify ACHD patients undergoing CT and CMR would be important to ensure accurate coding and accounting.

### Admissions to the Royal Liverpool Hospital

Based on coding data there have been 51 admissions to the Royal Liverpool with an ACHD diagnosis (Q-code) since the service went live in September 2018. However, 10 of these patients were incorrectly coded and did not have ACHD. The majority of these patients were admitted via A&E at the Royal Liverpool (39%) with 29% coming via Bed Bureau. There were 9 elective admission and a small number of direct inter-hospital transfers.





Of the patients admitted, half were from the Liverpool CCG with only 6 patients from outside Cheshire and Merseyside.

#### Overview of admissions to the Royal Liverpool

It was originally anticipated that the on call ACHD consultant and specialist nurse would be predominantly based at the Royal Liverpool when on call and that this is where the majority of inpatients beds would be. However due to a lower than expected number of admissions and the fact that outpatient clinics and echo lists have not yet commenced at the Royal Liverpool, the ACHD team have returned to LHCH in the afternoon. This has limited the visibility of the ACHD team and reduced the opportunity for ongoing training of the nursing and junior staff within the Royal. Due to the low number of admitted patients, there has been some uncertainty regarding the admissions pathways and further work is ongoing to re-embed these.

## Financial Review

### Background

The activity and finance plan for ACHD in 2018/19 was set in line with the first transitional year set out in the ACHD business case. The service transferred to LHCH in August 2018, with Outpatients and Diagnostic activity commencing in September and Surgical and Medical Interventions beginning part-way through October. The Medical team TUPE-ed across in April 2018 and the Nursing team TUPE-ed across in June 2018. The medical and nursing team continued to deliver a service in Manchester and Blackpool, resulting in re-charges to both organisations.

NHS England supported the transition of the service through non-recurrent pump-prime funding in 2018/19 of £652k, recognizing the time required to train staff and for activity levels to build up to capacity. They also provided £531k funding for capital items.

Capital Investment	£
Willow Suite/LRAC renovation	78,647
4D Echo Machine	253,000
TOE	51,000
Heart and Lung machine	121,000
Other - instruments etc	27,353
<b>Total Capital Expenditure</b>	<b>531,000</b>

Table 11. Capital set up costs

### Income and Expenditure performance

The table below sets out the 2018/19 full year plan, Month 10 performance, as well as a full year forecast.

As outlined above there are a number of key differences from the original plan

1. Medical and nursing staff continuing to carry out work at Manchester and Blackpool Foundation Trusts, resulting in re-charges to those organisations.



However there is a corresponding decrease in activity at LHCH due to reduced number of staff undertaking elective work at LHCH.

2. Increased requirement for Electrophysiology, resulting in device expenditure and more medical interventional work than expected
3. Classification and identification of Outpatient procedures such as complex and simple echocardiograms remains ongoing.
4. Inpatient case mix has been lower than expected, coding reviews are ongoing.

We expect to use the full pump-priming monies of £652k by the end of the financial year

		2018/19 Plan		Month 10 actuals		2018/19 Forecast		2018/19 Variance	
Income		Activity	£	Activity	£	Activity	£	Activity	£
Surgical	IP	21	267,609	14	129,201	23	221,522	2	-46,087
	Critical Care	63	79,305	43	52,931	69	84,017	7	4,712
Medicine	IP	50	222,783	88	261,235	135	410,454	85	187,671
	Devices	0	0	16	61,621	22	90,377	22	90,377
OP and Diagnostics	First	457	77,832	421	230,048	1,993	314,894	1,536	237,062
	Follow-up	1,774	147,508	199	31,442	283	44,714	-1,491	-102,794
	Procedures	2,037	426,808	538	35,874	1,076	71,748	-961	-355,060
	Diagnostic Imaging	100	40,972	9	3,385	17	6,326	-83	-34,646
Pump-priming	NHS England		652,000		508,566		652,000	0	0
Staff re-charges	Manchester UFT		0		202,735		220,548	0	220,548
<b>TOTAL INCOME</b>			<b>1,914,817</b>		<b>1,517,038</b>		<b>2,116,600</b>		<b>201,783</b>
Expenditure									
Intervention	Pay		131,722		46,153		48,055		-83,668
	Non-Pay		92,500		242,285		372,294		279,794
	<b>Total</b>		<b>224,222</b>		<b>288,438</b>		<b>420,349</b>		<b>196,127</b>
OP and Diagnostics	Pay		894,242		743,560		736,587		-157,655
	Non-Pay		54,232		50,241		58,818		4,586
	<b>Total</b>		<b>948,474</b>		<b>793,801</b>		<b>795,405</b>		<b>-153,069</b>
Surgical	Pay		399,423		189,491		447,921		48,498
	Non-Pay		146,647		118,041		161,264		14,617
	<b>Total</b>		<b>546,069</b>		<b>307,532</b>		<b>609,185</b>		<b>63,115</b>
Programme Support	Pay		150,092		111,705		228,601		78,510
	Non-Pay		48,327		15,562		63,060		14,733
	<b>Total</b>		<b>198,419</b>		<b>127,267</b>		<b>291,661</b>		<b>93,243</b>
	Pay		1,575,478		1,090,909		1,461,164		-114,315
	Non-Pay		341,706		426,129		655,436		313,730
	<b>Total</b>		<b>1,917,185</b>		<b>1,517,038</b>		<b>2,116,600</b>		<b>199,415</b>
<b>I &amp; E position</b>			<b>-2,368</b>		<b>0</b>		<b>0</b>		<b>2,368</b>

### 3. Conclusion

Transition of the NW ACHD service to the Liverpool Partnership has been challenging but has successfully implemented. The level one service at LHCH has been established and proves safe and effective.

The level two service at Manchester has been supported and future plans for the northwest include a full network model.

Reviewing and managing the substantial out patient population is a priority.

Future financial models are being explored.

#### **4. Recommendations**

The Board of Directors is asked to note progress in implementing the service which is now established.

Further updates will be presented on request.