Annex E: Leicester Growth Plans

University Hospitals of Leicester NHS
NHS Trust

UPDATE TO EMCHC GROWTH PLAN
14TH SEPTEMBER 2017

1. EAST MIDLANDS DEMAND FOR CHD SURGERY NOW:

According to NICOR, over the two years 2014/16, 1035 surgical Congenital Heart Disease (CHD) procedures were performed on patients from the East Midlands postcode area (as outlined by NHS England in the 2016 consultation document). This equates to an average of 517 surgical procedures each year where Leicester was the closest Level 1 CHD centre, by travel time, for all these patients.

This was a 7% increase from 2010-3 numbers which averaged 483 per annum and significantly more than the NHS England growth scenarios A and B which anticipated a growth of 2% or 4% respectively.

In 2016/17, EMCHC treated 67%[1] of the patients within the East Midlands region. The opportunity to increase this proportion through network development along with additional caseload from continued natural growth in the region is the key assumptions underpinning the EMCHC Growth plan.

2. ANTICIPATED EAST MIDLANDS DEMAND FOR CHD SURGERY BY 2021:

NHS England published their future projections for demand for CHD surgery in England as part of their 2015 financial impact report. In this they set out two scenarios for growth; a) based on population increases, and b) based on population increases and historic increases in CHD activity based on analysis of NICOR data

Applying these scenarios to the 517 procedures within the NHS England East Midlands catchment area for 2015-16, and assuming our surgical age case-mix will be 19% Adult and 81% Paediatric, indicates that there will be a CHD surgical demand of between 525 and 546 procedures by 2020-21.

Financial year	Scenario A			Scenario B		
	Adults	Paeds	Total	Adults	Paeds	Total
2015-16	97	415	512	97	415	512
2016-17	98	417	515	101	418	517
2017-18	98	419	517	104	421	525
2018-19	99	421	520	108	424	532
2019-20	100	423	523	112	427	538
2020-21	100	425	525	116	430	546

Since the Bristol review national PCHD morbidity rates have improved drastically. As this cohort of patients reach the transition to ACHD services it is likely that the proportion / number of adult cases will rise. NICOR data might suggest that this demand may be even higher if the previous regional trend (see paragraph 1) continues.

[1] EMCHC 2016/17 surgical caseload =345 , Regional caseload = 517 345/517 =67%

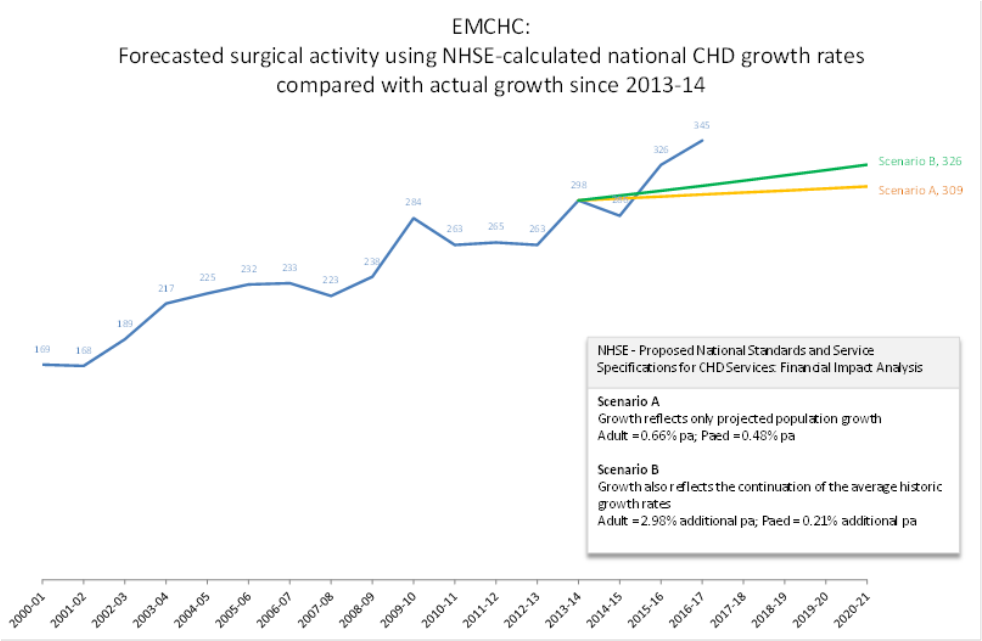
3. EMCHC ACTIVITY TO DATE:

The East Midlands Congenital Heart Centre has one of the fastest growing congenital heart surgery programmes in the UK, far outstripping national projections for increases in activity.

Using the two growth scenarios outlined in NHS England's 2015 Financial Impact Analysis, applied from 2013-14, the surgical activity of the East Midlands Congenital Heart Centre was expected to reach between 309 and 326 by 2020-21.

Actual surgical activity for the years 2015-16 and 2016-17 was in fact 326 and 345 operations respectively, exceeding even NHS England's scenario B 2020-21 projections.

EAST MIDLANDS GROWTH VS NHS ENGLAND EXPECTED GROWTH



On 13th September 2017 we were informed of a national recalibration[2] and coding change by NICOR that has increased our 2016/17 surgical activity number to 361.

Due to the late notice we have not amended our tables and illustrations. However, this is an extremely encouraging step towards our compliance with the initial 375 average surgical caseload standard and the subsequent 500 cases standard.

Our surgical growth projections currently do not include an allowance for the recent coding change. Such procedures are likely to be required in future years and we estimate this may provide an additional 10 -15 NICOR attributable cases per annum

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[2] Definition of primary ECMO cannulation
'primary ECMO (not included elsewhere - the ECMO must be the first procedure or >=30 days after a procedure)'

... should be coded as one of the following:
128725. Cardiac support using Extracorporeal Membrane Oxygenation (ECMO) circuitry 128726. Mechanical life support procedure as bridge to transplant 128727. Mechanical life support procedure as bridge to recovery

4. NATIONAL ACTIVITY (FROM NICOR) 2008-2016

Trust	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Increase from 2008-16		Increase from 2013-16	
									n	%	n	%
Birmingham Children's Hospital	**565**	**662**	**549**	**572**	**692**	**663**	**583**	**556**	-9	-1.60%	-107	**-16.14%**
Bristol Royal Infirmary	354	378	422	397	421	400	416	452	98	**27.70%**	52	**13.00%**
Leeds General Hospital	344	374	404	375	441	483	491	494	150	**43.60%**	11	2.28%
Glenfield Hospital	238	284	263	265	263	298	286	326	88	**37.00%**	28	**9.40%**
Alder Hey / Manchester	379	470	532	485	530	495	465	441	62	16.40%	-54	**-10.91%**
Evelina Hospital	420	405	440	472	488	512	492	499	79	18.80%	-13	**-2.54%**
Great Ormond Street / Bart's	**694**	**679**	**720**	**723**	**734**	**804**	**756**	**726**	32	4.60%	-78	**-9.70%**
Royal Brompton Hospital	**534**	**548**	**565**	**500**	**501**	**537**	**512**	**522**	-12	**-2.20%**	-15	**-2.79%**
Freeman Hospital Newcastle	347	323	332	322	324	319	300	328	-19	**-5.50%**	9	**2.82%**
Southampton General Hospital	284	314	402	429	337	387	365	390	106	**37.30%**	3	0.78%

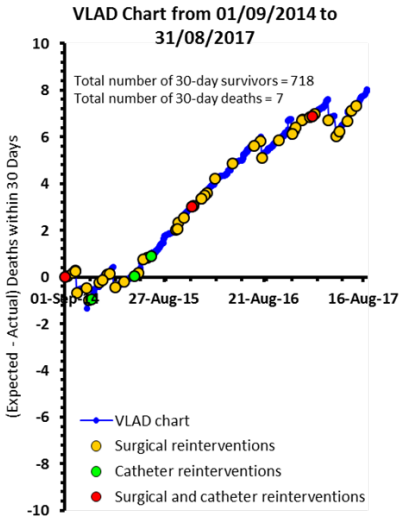
The data also supports the growth assumptions within the EMCHC growth plan, demonstrating sustained growth within the East Midlands region in excess of national trends. This illustrates the importance of using region-specific growth trends to forecast future surgical activity

5. QUALITY

EMCHC received an outstanding CQC rating for outcomes in 2016, and our quality ratings are exemplary. We publish a quality report annually which is shared with all our network partners and stakeholders.

Better than expected surgical survival

Risk-adjusted survival following paediatric surgery is statistically better than expected for the previous 3 years.



100%

Recommendation rate from our Friends and Family test

441 /442 respondents would recommend our services to their family and friends.

(Jun 16 – May 17)

Lower rates of:

- Surgical cancellations
- Complications
- Catheter re-interventions

Specialised Services Quality Dashboards NHS England

Statistically lower rates compared with other Level 1 congenital heart centres in 2016-17 according to our Specialised Quality Dashboards.

6. COMPLEXITYOF SURGERY

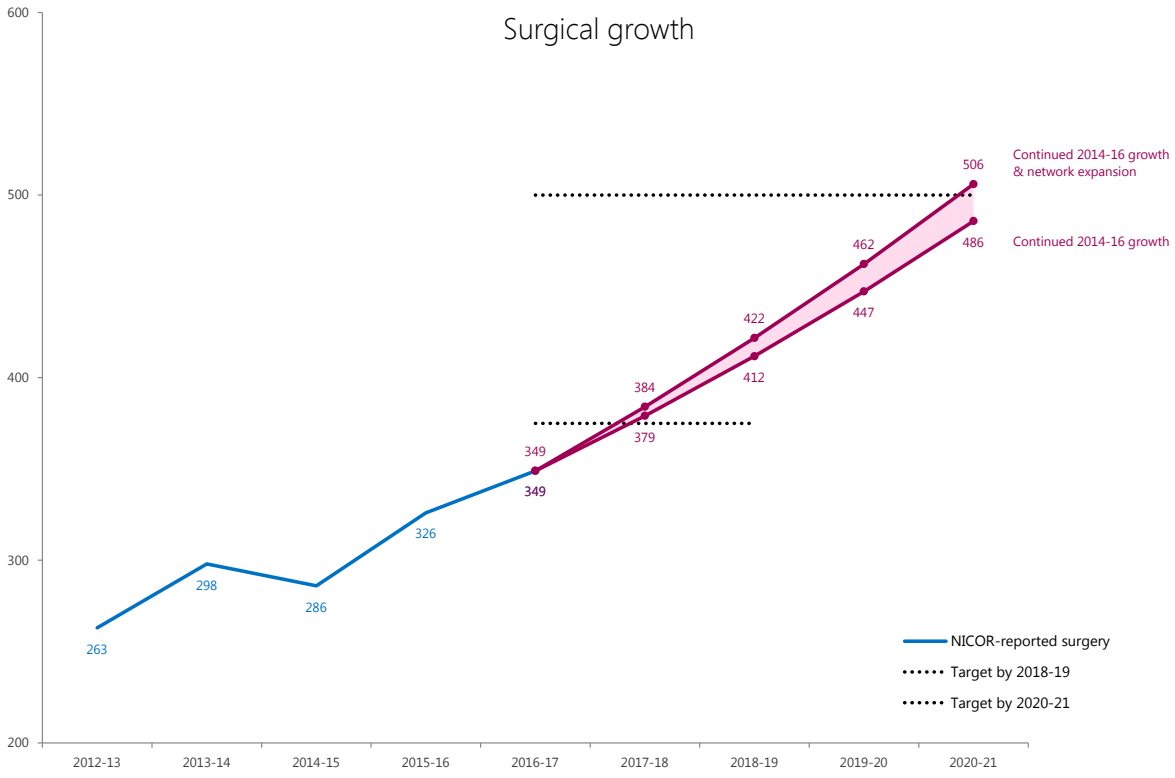
Growth of surgical activity at EMCHC has not been as a result of increasing less complex case mix. In fact, case mix complexity is on a par if not exceeds national trends.

Feature	EMCHC 2016-17	EMCHC 2017-18	Percentage in national NCHDA data 2009-2015
UVH episodes	11%	21%	17%
Congenital comorbidity	14%	20%	12%
Acquired comorbidity	15%	12%	7%
Additional Cardiac Risk Factors	4%	6%	5%
Severity of Illness	14%	8%	11%
More than one additional risk?	10%	8%	6%

7. EMCHC ANTICIPATED GROWTH BY 2020/2021

The graph below shows two possible scenarios for growth at EMCHC,

1. Continued growth at 2014- 2016 rate
2. Continued growth at 2014 -2016 rate with anticipated and supported network development (as detailed in the network letters Appendix 1)



8. EMCHC NETWORK STRATEGY AND CATEGORISATION

We have categorised the partner hospitals within our network based on the geographical location of the hospital, and the catchment area that falls within our network. This categorisation provides us with a clear strategy in respect to our network engagement and development. It also dictates the level of referrals we may be able to achieve by 2021.

CATEGORY 1

In this category, both the hospital and all of its catchment area geographically fall within our Network and therefore EMCHC is the closest Level 1 centre. We already have excellent established relationships and the majority of CHD surgical cases are already referred to EMCHC.

The strategy for these hospitals is to continue to ensure that as many CHD surgical cases are referred to EMCHC as possible. We will continue to listen to the needs of the referring clinicians, support referrals through outreach clinics and patient information leaflets, continue to facilitate appropriate and accessible MDT dialogue and training, and ensure that we provide timely patient feedback following treatment.

CATEGORY 2

In this category the hospital site is geographically located within our Network but some of the catchment area is not. This means that the hospital currently has a referral relationship with another Level 1 centre, and for some of their patients this will be their closest level 1 centre. We recognise and respect these relationships and our network development strategy only assumes the addition of EMCHC as a referral choice to those patients living closest to us.

We have already had significant support for our development strategy from these hospitals. We have begun the dialogue necessary for EMCHC to understand the clinical requirements to be able to offer choice of referral to EMCHC, especially for those patients where EMCHC is their nearest Level 1 CHD centre. We are providing outreach clinics in some of these hospitals and are in the process of establishing what is most appropriate in others. We have developed a patient information leaflet to support a fetal medicine referral which can carry both EMCHC and the referring Trust's logo and details. As with our level1 hospitals we will ensure appropriate MDT access and training is available to help facilitate appropriate referrals to EMCHC.

CATEGORY 3

In this category the referring hospital actually sits outside our catchment area, but some of the patients within their own catchment are closer to EMCHC than any other Level 1 centre. The recent shift in the catchment area for EMCHC as designated by NHS England in the consultation document identifies a number of hospitals which previously we did not consider were within our network.

All of these hospitals will have referral pathways to another Level 1 centre which are established and respected by the Trust and us. As part of our network development we have identified that approximately 50 -55 cases from this group of hospitals (NICOR 2014/16) that have received CHD surgery in another Level 1 centre but where EMCHC would have been closer.

We already have some clinical relationships with these hospitals, but will be working with the necessary clinical teams to understand what we can do to enable an additional referral pathway to be established for those patients who live closest to EMCHC. These discussions

are in very early stages and as such we cannot be specific about the numbers possible from each hospital. However, based on their desire to offer patient choice and to support the retention of EMCHC as a Level 1 centre within the East Midlands, we have calculated that it is feasible that approximately 45 patients will be referred to EMCHC from this group of hospitals by 2020/21.

OUT OF AREA / OVERSEAS PATIENTS

Each year we treat a number of patients from outside our network. This is usual for all Level 1 centres and can be attributed to a number of reasons:

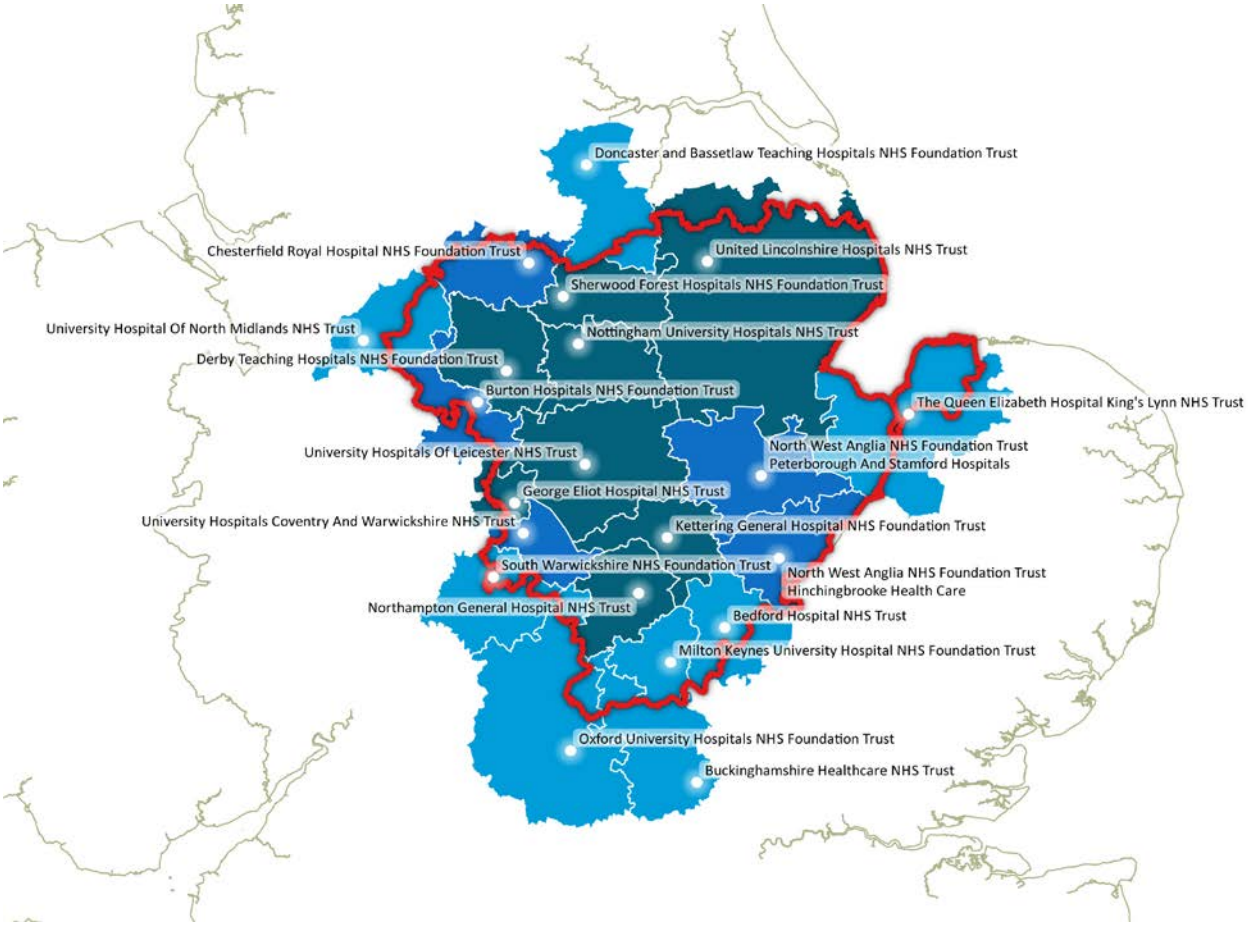
- Lack of available PICU bed in their closest Level 1 centre
- Brought to EMCHC via emergency Mobile ECMO and needing immediate surgery
- Overseas patients referred to us through links with relevant paediatric and adult CHD charities

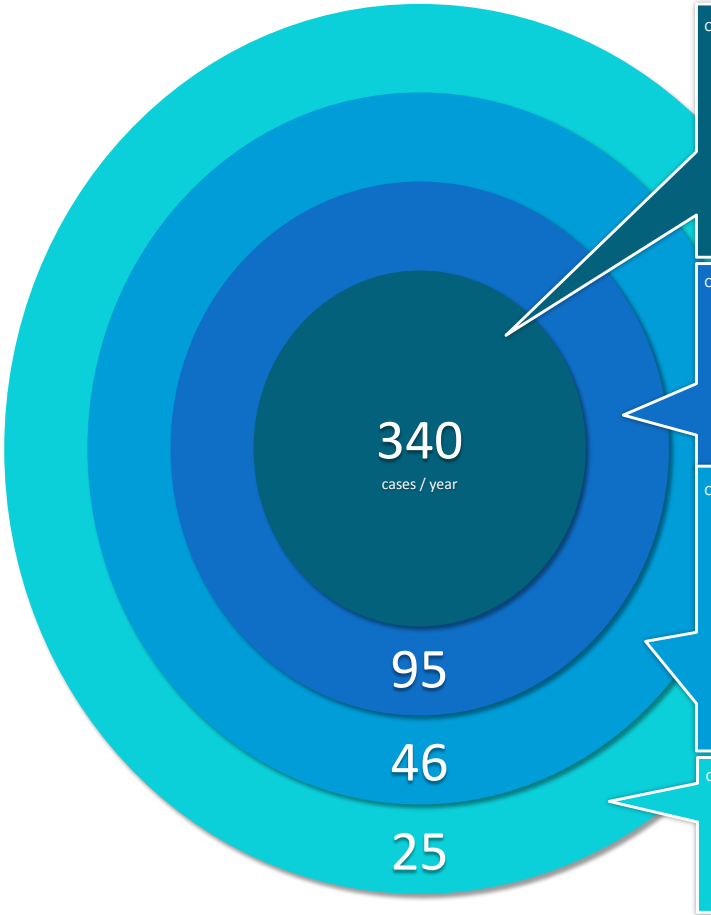
Last year this category accounted for 28 cases. As part of our growth plan we have a strategy to formalise our surgical provision to overseas patients and anticipate by 2021 this will account for 10 - 15 patients. We have assumed that another 10 patients with the above criteria will be treated at EMCHC by 2021.

9. EXPECTED GROWTH BY HOSPITAL

Hospital	Market / yr (2014-16)	Market / yr est. (2020-21)	Activity / yr est. (2020-21)
Category 1	344	366	340
University Hospitals Of Leicester NHS Trust	106	114	108
United Lincolnshire Hospitals NHS Trust	50	53	51
Nottingham University Hospitals NHS Trust	56	60	58
Derby Teaching Hospitals NHS Foundation Trust	43	46	44
Sherwood Forest Hospitals NHS Foundation Trust	29	31	30
Northampton General Hospital NHS Trust	25	26	13
Kettering General Hospital NHS Foundation Trust	24	25	25
George Eliot Hospital NHS Trust	11	11	11
Category 2 - (Surgical numbers only from within our catchment area)	114	119	95
North West Anglia NHS Foundation Trust	45	47	38
University Hospitals Coventry And Warwickshire NHS Trust	29	30	24
Burton Hospitals NHS Foundation Trust	22	23	19
Chesterfield Royal Hospital NHS Foundation Trust	18	19	14
Category 3 - (Surgical numbers only from within our catchment area)	52	54	45
Oxford University Hospitals NHS Trust			
Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust			
Buckinghamshire Healthcare NHS Trust			
University Hospital Of North Midlands NHS Trust	52	54	45
Milton Keynes University Hospital NHS Foundation Trust			
Bedford Hospital NHS Trust			
The Queen Elizabeth Hospital King's Lynn NHS Trust			
Total	**510**	**539**	**480**
Out of Area patients	**Actual**		**Est 2020/21**
Overseas patient programme Mobile ECMO patients requiring surgery Out of area patients requiring emergency treatment	28	n/a	25
Total including out of area patients			**505**
Primary Cardiac ECOMO decannulations as per NICOR new definitions	12		12
Total			**517**

NETWORK MAP SHOWING HOSPITALS AND CATCHMENT AREAS





Category 1 — Hospitals wholly within our catchment

- University Hospitals of Leicester NHS Trust
- Nottingham University Hospitals NHS Trust
- Sherwood Forest Hospitals NHS Foundation Trust
- Derby Hospitals NHS Foundation Trust
- Kettering General Hospital NHS Foundation Trust
- United Lincolnshire Hospitals NHS Trust
- George Eliot Hospital NHS Trust
- Northampton General Hospital NHS Trust

Category 2 — Hospitals geographically within our catchment but some of their patients are not

- North West Anglia NHS Foundation Trust -Peterborough and Stamford Hospitals and Hinchingbrooke Hospital
- Burton Hospitals NHS Foundation Trust
- University Hospitals Coventry and Warwickshire NHS Trust
- Hinchingbrooke Health Care NHS Trust
- Chesterfield Royal Hospital NHS Foundation Trust

Category 3 — Hospitals geographically outside our catchment but some of their patients are within our catchment

- University Hospital of North Midlands NHS Trust
- South Warwickshire NHS Foundation Trust
- Milton Keynes University Hospital NHS Foundation Trust
- Doncaster and Bassetlaw Hospitals NHS Foundation Trust
- Oxford University Hospitals NHS Foundation Trust
- The Queen Elizabeth Hospital King's Lynn NHS Trust
- Bedford Hospital NHS Trust
- Buckinghamshire Healthcare NHS Trust

Category 4 — Patients from outside our catchment area

- Overseas patient programme
- ECMO cannulation as per New NICOR categorisation / Mobile
- ECMO patients requiring surgery
- Out of area patients requiring emergency treatment

10. NETWORK ENGAGEMENT AND APPROACH

Over time, (in common with many other centres) our approach to our referring centres has changed to be much more of a partnership and joint approach than previous top-down structures. This has been facilitated by the much more widespread appointment of specialised paediatricians with expertise in cardiology (many of whom have trained within our centre) to our referring hospitals where they have been able act as a conduit for communication and dissemination of learning and expertise. We were one of the first UK centres to embrace this approach and have in fact trained paediatricians with expertise now employed right across the UK.

In 2014, as a unit we commissioned an external and independent peer review of outcomes and unit practice, as part of our overall quality improvement work stream. From this we have addressed some areas of network approach and interactions which were identified as limiting our network relationships and might benefit from further development. A comprehensive action plan was developed and monitored regularly by our regional specialised commissioners. As a team we have also engaged in some individual and group work with an external facilitator to enhance this.

We have encouraged our network partners to tell us what they need from us, how they want us to communicate and work together, and have listened and responded in every way possible. We have hosted two International conferences in the last two years and celebrated the success of the CHD profession with our network colleagues.

Not unreasonably, NHS England have asked us to ask each Trust within our network to confirm their support for the specific assumptions in our growth plan. The time available to achieve this has been very short, especially during the peak holiday season, but we have had a very encouraging response. We have received written support for our assumptions from all our level 1 hospitals. Of particular significance is that Northampton General Hospital are included in this endorsement. We have also thus far received confirmation from a good number of level 2 and 3 trusts and we will share with NHS England colleagues further letters of endorsement as they are received.

Letters received to date can be found in Appendix 1

11. OUR COMMITMENT TO OUR PLAN

We believe that a positive decision from the NHS England Board will lift an era of uncertainty that has been surrounding EMCHC for many years. The energy and commitment of our team over these difficult years has been incredible, and the success and results achieved in spite of the circumstances is extraordinary.

We will refocus the teams from defending our service to developing and growing to the benefit of our patients in accordance to the standards. We have managed to attract significant interest from applicants to vacant posts despite the uncertainty to date, but fully anticipate this to be invigorated and enhanced for all professions in light of a positive decision.

We will relocate our Paediatric CHD service to join the Children's Hospital at the Leicester Royal Infirmary by July 2019. We have submitted a robust project plan demonstrating the governance and financial investment. Our new facilities will be located with the appropriate adjacencies, and will be future proofed to enable our continued growth to meet the 2020/21 requirements of a minimum 4 surgeons and 500 surgical cases.

By April 2019 our 3 surgeons will each have delivered an average of 125 cases per annum totalling 375 cases.

By April 2021 we will have 4 surgeons all of whom are delivering an average of 125 surgical cases.

This anticipated growth will only be possible if our network partners and our staff fully believe that the commissioning of Level1 CHD services at EMCHC is secure. Our growth plan is dependent upon the development of relationships which will not all happen at a linear rate. Monitoring of compliance to standards is an expectation of any service and we would hope that EMCHC would be treated in the same way as any other service, with close liaison with our regional commissioning team regarding our compliance with all the CHD standards. In other words, if a decision is taken to continue to commission EMCHC as a Level 1 Centre we would anticipate that the commissioning approach would to seek to assist the future growth and development of EMCHC rather than hinder it. Otherwise, there is a strong risk that our network relationships will not develop as anticipated and the service will falter.

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John Stewart
Interim Director of Specialised Commissioning
NHS England

BY EMAIL

26th October 2017

Dear John

Thank you for your email dated 16th October. As you suggest, we have been able to utilise the additional time from the delay to engage more fully with our network hospitals and have now secured letters of support from all Category 1 and 2 hospitals. Discussions with the Category 3 hospitals are progressing well, and I am sure you will understand will take longer due to the fact we are still in the process of establishing the necessary relationships to facilitate the commitment.

I have updated your table below, and attach the additional letters of support we have received since our previous communication. Where we have not had a letter of support I have indicated the status of our discussions. I have also updated you on the conversations with Milton Keynes which I hope will answer your concerns.

	Trust	Letter received?
Category 1	Leicester	
	Lincolnshire	Y
	Nottingham	Y
	Derby	Y
	Sherwood	Y
	Northampton	Y
	Kettering	Y
	Nuneaton	Y
Category 2	Peterborough	Y
	Coventry	Y
	Burton	Y
	Chesterfield	Y
Category 3	Oxford	N We have spoken to the lead cardiologist at Oxford who is very supportive of EMCHC retaining Level 1 commissioning and recognises that some patients from MK and Northampton are closer to EMCHC. We are arranging for a team from Oxford to visit EMCHC to see the

		facilities and have the necessary discussions regarding appropriate referral.
	Doncaster	Y
	Buckingham	N We have received a letter from Buckingham Healthcare Trust who have declined to change their current referral pathways. Our plan only included a small area around Buckingham Cottage Hospital and did not include Stoke Mandeville patients , so we feel confident that the small number of patients this would deliver can easily be provided from our other hospitals
	Stoke	Y
	Milton Keynes	Y We have spoken to MK team and they have agreed to refer as long as we liaise with Oxford in the process. We will ensure the MK team are also included in the visit to EMCHC by the Oxford team. We are also in dialogue with the MK fetal team to discuss opportunities for fetal referrals
	Bedford	N Bedford have said they are not happy to commit to a formal agreement due to the merger with Luton and Dunstable but adhoc referrals will continue from the team as appropriate based on patient choice
	Kings Lynn	N We have had dialogue with the Senior Paediatrician who is happy to facilitate referrals, especially as some of their patients come from well into our catchment area. They are discussing with the medical director and arranging for both clinical teams to meet to agree a more formal protocol.

As you will see we now have an ongoing dialogue with every Category 3 hospital, and with the exception of Buckinghamshire Trust they are all engaging with us to discuss the most appropriate way forward. Even Bedford, who are not able to commit officially due to the impending merger with the Luton and Dunstable Hospital, have agreed to continue with the adhoc referrals we currently receive. I emphasise that this group of hospitals only account for 45 cases per annum or 8.5% of our target..

Our recent level of referrals, MDT confirmation to waiting list and surgical activity is the highest it has ever been, and completely on track to meet the growth plan predictions for this year and to meet the 500 caseload standard. We are also now able to add the additional cases made possible from the change in NICOR validation regulations which will easily mitigate any risk (however small) associated with our Category 3 hospitals.

For the purpose of our plan, we have distributed the anticipated additional ECMO cannulations now possible due to the NICOR change across all hospitals;, this is obviously very difficult to identify by individual hospital.

For ease I have summarised our revised position following our recent communications below;

Hospital	Market / yr (2014-16)	Market / yr est. (2020-21)	Activity / yr est. (2020-21)	projected cases from New NICOR regulations on ECMO cannulations
Category 1	344	366	340	18
University Hospitals Of Leicester NHS Trust	106	114	108	
United Lincolnshire Hospitals NHS Trust	50	53	51	
Nottingham University Hospitals NHS Trust	56	60	58	
Derby Teaching Hospitals NHS Foundation Trust	43	46	44	
Sherwood Forest Hospitals NHS Foundation Trust	29	31	30	
Northampton General Hospital NHS Trust	25	26	13	
Kettering General Hospital NHS Foundation Trust	24	25	25	
George Eliot Hospital NHS Trust	11	11	11	
Category 2 - (Surgical numbers only from within our catchment area)	114	119	95	7
North West Anglia NHS Foundation Trust	45	47	38	
University Hospitals Coventry And Warwickshire NHS Trust	29	30	24	
Burton Hospitals NHS Foundation Trust	22	23	19	
Chesterfield Royal Hospital NHS Foundation Trust	18	19	14	
Category 3 - (Surgical numbers only from within our catchment area)	50	52	45	
Oxford University Hospitals NHS Trust				
Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust				
University Hospital Of North Midlands NHS Trust	50	52	45	
Milton Keynes University Hospital NHS Foundation Trust				
Bedford Hospital NHS Trust				
The Queen Elizabeth Hospital King's Lynn NHS Trust				
Sub total category hospitals	**510**	**539**	**480**	**25**
Out of Area patients	Actual 2016/17		Est 2020/21	
Overseas patient programme				
Mobile ECMO patients requiring surgery	28	n/a	25	
Out of area patients requiring emergency treatment				
Total surgical numbers for 2020/2021		**530**		

I hope that this latest update further strengthens our evidence of a robust plan to meet the standards within the timescales required and informs your recommendations appropriately.

Please do let me know if there is any further information you need.

Kind regards

Yours Sincerely

John Adler

Chief Executive

Cc: Catherine O'Connell