



Full Business Case

Adult Level 3 ICU Project:
Glenfield ICU Medium Term
November 2015

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Building Caring at its best

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Glossary of Terms

Abbreviation	Full Heading
BCT	Better Care Together
CCG	Clinical Commissioning Group
CHUGGS	Cancer, Haematology, Urology, Gastroenterology and General Surgery
CIP	Cost Improvement Programme
CMG	Clinical Management Group
CRL	Capital Resource Limit
CSI	Clinical Supporting and Imaging
DCCM	Department of Critical Care Medicine
EFL	External Financing Limit
ESB	Executive Strategy Board
ESM	Emergency and Specialist Medicine
FBC	Full Business Case
FM	Facilities Management
GH	GH
HDU	High Dependency Unit
HPB	Hepato-Pancreato-Biliary
IBD	Interest Bearing Debt
ICNARC	Intensive Care National Audit & Research Centre
ICU	Intensive Care Unit
IFPIC	Integrated Finance Performance and Investment Committee
IM&T	Information Management & Technology
ITAPS	Critical Care, Theatre, Anaesthetic, Pain and Sleep

Abbreviation	Full Heading
ITFF	Independent Trust Financing Facility
I&E	Income & Expenditure
JSNA	Joint Strategic Needs Assessment
LGH	LGH
LRI	LRI
LTFM	Long-Term Financial Model
MSS	Musculoskeletal and Specialist Surgery
PDC	Public Dividend Capital
RRCV	Renal, Respiratory, Cardiac and Vascular
SMART	Specific, Measurable, Achievable, Realistic, Time-related
SRO	Senior Responsible Officer
UHL	University Hospitals of Leicester
VAT	Value Added Tax
VFM	Value For Money
W&C	Women's & Children's
WTE	Whole Time Equivalent

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1 | Executive Summary

1.1. Introduction

This Full Business Case (FBC) addresses the immediate clinical imperative of moving Adult Level 3¹ Intensive Care Unit (ICU) services provided by University Hospitals of Leicester NHS Trust (hereafter referred to as 'UHL' or 'the Trust') from the Leicester General Hospital (LGH) site.

This investment business case proposes an increase in Adult Level 3 capacity at the Glenfield Hospital (GH) site, creating an additional eleven bed spaces by September 2016. These bed spaces will be crucial in enabling the transfer of clinical activities reliant on Adult Critical Care from LGH in line with the Trust's stated deadline of July 2016. There will be a short period from the end of July (when HPB and Renal Transplant move) until September, when the expanded unit comes online, for ICU capacity to be carefully managed at the GH and this has been discussed with the key stakeholders. The development outlined in this business case will ensure that sufficient capacity exists to accept all required activity from re-locating specialties in time for winter 2016.

It is important to note that business cases for imaging capacity at GH as well as ward bed capacity at GH and Leicester Royal Infirmary (LRI) will be presented alongside this business case and that agreement of this business case will require each of those component business cases to be authorised in train. If this is not the case, then the range of enabling actions required at each site will not be delivered in time to enable the movement of adult Level 3 care from LGH to GH, as set out in this business case.

1.2. Strategic Case

1.2.1 Why is immediate change necessary?

In order to support the relocation of Adult Level 3 Critical Care and affected services from the LGH by July 2016 there is an immediate requirement to increase the capacity of the ICU at the GH site. This increased capacity will be crucial in enabling the transfer of clinical activities reliant on Adult Critical Care from LGH in line with the Trust's stated deadline of July 2016.

There is a recognised move towards using Critical Care beds at an earlier stage in a patient's treatment². On an international level, the UK already has a low number of ICU

¹ See Appendix 1 for details of Levels of Care – definitions used throughout this document.

² See (for example) 'Critical care - where have we been and where are we going?', Jean-Louis Vincent, Critical Care 2013, 17(Suppl 1):S2 <http://www.ccforum.com/content/17/S1/S2>: "The first ICUs were established in the late 1950s and the speciality of critical care medicine began to develop. Since those early days, huge improvements have been made in

beds compared to its population, and even within the UK, UHL is notable as an NHS Trust with a low provision of ICU beds per capita served. A report produced by an external company³ that assessed the Trust's current and future requirements for ICU and High Dependency Unit (HDU) beds has indicated that UHL is currently under-resourced for both types of care.

The Trust's five-year strategy for delivering Critical Care services is the creation of two 'super' Critical Care areas by 2019 at LRI and GH. These units will care for Levels 2, 3 and 4 patients. Aligned with this provision will be a robust tier of beds for Level 1 care within specialties throughout the Trust, as well as Critical Care outreach services delivering a 24/7 service.

The first year of the strategy is underway, precipitated by the need to re-locate Adult Level 3 ICU beds at the LGH due to on-going staffing issues. This has driven the need to provide an interim ('Medium Term') solution for an expansion of the Adult Level 3 ICU beds at the LRI and the GH, pending implementation of the longer-term solutions to address the identified gap in capacity over the next ten years. The imperative is to deliver the change as rapidly as possible; a realistic timescale sees delivery by September 2016.

1.2.2 What benefits will it bring?

In addition to enabling the Level 3 dependent specialties at the LGH (HpB and Renal Transplant) to be relocated, the proposed investment in an additional eleven beds for Level 3 care will bring the following benefits:

- ▶ Increased capacity and facilities that are staffed and equipped to current core national standards. This will enable both the local population and referrals for tertiary care benefit from the highest quality care in the most appropriate environment.
- ▶ An ICU of an adequate size at GH will act as an enabler for the Trust's five-year strategy and:
 - ▶ maximise the efficiency of patient flow for Levels 2 and 3 care and stepdown
 - ▶ minimise the occurrence of cancellations on the day of surgery
 - ▶ improve the Trust's capability to meet cancer care waiting time targets
 - ▶ provide flexibility in terms of staff recruitment, retention, motivation and morale (recruitment for ICU specialists is a problematic area for all UK Trusts) – expansion of the unit will attract both junior and senior clinicians to UHL, reducing the particular fiscal drag of junior doctor staffing with premium-rate locums

terms of technological advances and understanding of the pathophysiology and pathogenesis of the disease processes that affect critically ill patients. Progress in therapeutics has been less dramatic, but process of care has improved steadily with important changes, including less iatrogenicity, better communication with patients and families, and improved teamwork, which have helped improve outcomes for ICU patients. Critical care medicine is one of the fastest-growing hospital specialties ... set to occupy an increasingly important place in hospitals worldwide."

³ Brazian Report on UHL ICU capacity November 2014

- ▶ create a better environment for training clinicians – an adequate environment is required to meet national core standards – ensuring appropriate training, including numbers of educators for nurses
- ▶ By expanding GH ICU, the Trust will gain the potential to access regional referrals (or at least, not turn them away) for specialist treatment. This benefit sits alongside the minimisation of cancellation of day surgery as a factor that will have a positive impact on the Trust’s credibility and reputation for tertiary care, underpinning the long-term strategy to expand this element of service provision.

1.3. Economic Case

This business case supports the reconfiguration of Critical Care services across the Trust’s sites. UHL has reviewed its overall position in respect of transferring all services related to LGH Adult Level 3 Critical Care to the LRI and the GH. It has run a high-level economic appraisal that compares a ‘Do Nothing’ scenario with respect to the Critical Care facilities at the LGH with a scenario that moves Critical Care beds and associated services from the LGH (the second scenario includes associated moves between the Trust’s other hospitals.) The option appraisal process has evolved as a result of timescales and funding available.

The overarching ICU strategy, including the recent approval of the Vascular and ICU Level 3 business cases, necessitates the reconfiguration of UHL Critical Care services. Given the fact that the Vascular business case has already been approved, the economic appraisal therefore examines the costs including the Vascular move and excluding the Vascular move. (Even if the Vascular moves weren’t taking place, this Critical Care move would still be preferred over the ‘Do Nothing’ option.)

The result of this appraisal is as follows:

Table 1 Net Present Cost of Each Option

Option	NPC £'000
Do Nothing	409,795
Critical Care and Vascular moves	321,758
Critical Care Moves only	302,256

The ‘Do Nothing’ option is shown to be significantly more expensive than the proposed developments for Critical Care, including and excluding Vascular services. It reflects the loss of Critical Care income at the LGH. (The Trust would clearly make savings in relation to this reduction in activity; it is assumed to be phased over a period of five years. There would also be a decline in inpatient activity as a result of the requirement for some procedures to have a close proximity to a Critical Care bed ceasing. For the purposes of the economic appraisal, the baseline income has been taken as a proxy

for the baseline cost. This includes all Critical Care income and a proportion of inpatient income. The eventual savings from the loss of Critical Care activity relate to the direct staff, non-pay and facilities management (FM) costs. The savings on inpatient loss have been assumed at a 30% marginal rate.)

Table 2 'Do Nothing' Costs

Income Loss Per Annum	£'000
Loss of Income due to Closure of LGH ITU	4,094
Loss of Income due to Closure of LGH ITU (PACU)	814
Loss of Income due to Closure of LGH HDU	2,648
Sub-total	7,556
Loss of Inpatient activity income due to closure of ITU & HDU	6,630
Grand Total Income Loss	14,186
Potential Savings	
Potential medical and nursing staff cost saving	3,496
Non Pay	756
FM and Estates	250
Marginal Cost of Inpatient Services	1,989
Total Savings	6,491
Total Loss	7,695

Using the same baseline as the 'Do Nothing' scenario, the Trust has reflected the costs and savings from each of the Critical Care and Vascular⁴ business cases, along with lifecycle and capital costs collectively. The aggregate position has been considered – a requirement in the economic appraisal because of the interdependence between the investments in an economic sense (although this not sufficient for them to be considered as one collective investment in totality).

The key figures for each of these are as follows:

Table 3 Critical Care and Vascular Additional Costs

Description	Costs
Capital Costs	£30.381m
Lifecycle Costs	£10.286m over 30 years
Workforce Costs	£2.899m pa FYE non recurrent, £243k per annum recurrent
FM costs	£198 k per year recurrent
Other non-pay	£378k per annum

⁴ Costs included in the Vascular business case are different to those approved by the Trust Board as a result of reallocating costs between Vascular and Critical Care business cases. These relate in particular to anaesthetic mid-grade and theatre costs, where some additional costs have now been allocated to Critical Care

Income	£869k per annum FYE
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The costs relating to just the Critical Care business cases are as follows.

Table 4 Critical Care Business Cases – Costs

Description	Costs
Capital Costs	£17.193m
Lifecycle Costs	£2.878 over 30 years
Workforce Costs	£2.045m pa FYE non recurrent
FM costs	£150 k per year recurrent

The initial options used to select the site location were subjected to an options appraisal process based on pre-determined non-financial benefit criteria. The criteria applied within this assessment are as follows:

Table 5 Benefits Criteria

Objectives	Measurement (the degree to which an option is likely to result in...)
A To provide a solution that maximises clinical quality and safety whilst remaining consistent with future configuration	An acute configuration of services that maximises clinical affinities and critical adjacencies minimises clinical risk
B To provide an efficient and effective solution for the immediate ICU requirement	Extra capacity to accept Level 2 and Level 3 activity moving from other sites, enabling reduction in cancellation
C To allow staffing pressures to be minimised in delivering the solution	Ease of effective staffing cover
D To ensure that the quality of the patient environment and experience remains a priority	Enhanced patient experience, safety in terms of infection control and prevention and improvement in the quality of the patient environment; privacy & dignity; single sex areas; single rooms
E To deliver a solution that is achievable and delivers the required capacity within the timescale of July 2016	Achievement of timescale of conversion works/interdependencies
F To deliver a solution that ensures accessibility to patients	Clinical adjacencies and an acceptable overall patient journey

The project team determined the relative importance of each of these categories. The results of the weighting exercise are as follows.

Table 6 Weighting of Benefits Criteria

	Criterion	Weighting	Points Available	Maximum Weighted Points
A	Clinical Quality and Configuration	5%	10	0.5
B	Efficiency & Effectiveness	5%	5	0.3
C	Staffing	20%	5	1.0
D	Quality of the Patient Environment	10%	15	1.5
E	Achievability	50%	5	2.5
F	Accessibility	10%	15	1.5

As clinical safety and quality is necessarily central to the project's aim, it was agreed that the greatest weightings would be attributed to those factors that maximised achievability of a suitable option in line by the deadline of July 2016.

The options to provide expanded Critical Care capacity at GH were assessed in terms of the requirement to provide eleven additional bed spaces. (Activity modelling has shown that this is the minimum number that would be required to deal with variations in activity levels once HPB, Transplant Vascular and Nephrology have moved onto the site.) It was determined that co-location of these additional bed spaces with the existing ICU will be crucial to ensure that they are utilised in the most efficient, effective and safe way possible.

The effects of restrictions around current space on the GH unit as well as the need to retain an efficient and safe configuration are that the only options that can deliver the requisite space for GH ICU by winter 2016 are new build solutions. The site locations assessed are set out below.

Table 7 GH – New Build Options Explored

Option	Description
1. New build option 4A	New build expansion into courtyard adjacent to current Bay
2. New build options B and D	New build areas at several proposed locations around the outskirts of the current ICU department
3. New Build option 4C	New build area that allows the direct expansion of Bay B and increases size of existing unit

Table 8 Options Scores – Potential GH ICU Locations

Criteria/ Scores	New Build		
	1	2	3
Clinical Quality and Configuration	9	9	9
Efficiency and Effectiveness	4	3	5
Staffing	4	3	5
Quality of the Patient Environment	11	11	15
Achievability	3	3	3
Accessibility	14	13	15
OVERALL SCORES	45	42	52
RANK	2	3	1

Table 9 Options Scores – Weighted: Potential GH ICU Locations

Criteria/ Weighted Scores	New Build		
	1	2	3
Clinical Quality and Configuration	0.5	0.5	0.5
Efficiency and Effectiveness	0.2	0.2	0.3
Staffing	0.8	0.6	1.0
Quality of the Patient Environment	1.1	1.1	1.5
Achievability	1.5	1.5	1.5
Accessibility	1.4	1.3	1.5
OVERALL SCORES	5.45	5.1	6.2
RANK	2	3	1

The results of the economic analysis are as follows.

Table 10 Options Appraisal: Non-financial and Financial Scores

Option	Non-Financial Scores £'000	Financial Scores	Cost per Benefit Point £'000
Option 4A	476,255	5.45	87,386
Option 4B&D	479,529	5.10	94,025
Option 4C	478,040	6.25	76,486

The clear preference demonstrated by the qualitative and quantitative options appraisal is for a new build area that allows the direct expansion of Ward 34 Bay B and increases the size of the existing unit.

1.4. Commercial Case

The Commercial Case outlines the proposed procurement strategy in relation to the preferred option. The project requires the provision of, and therefore procurement of, the following key services:

- ▶ Reconfiguration of facilities for ICU inpatient care at GH;
- ▶ Additional workforce resources.

Procurement strategies will be pursued to ensure efficiency and value for money.

The individual work packages associated with this scheme are relatively minor in content. These will be procured within the requirements of standing financial institutions.

The capital works could be procured traditionally through competition; however, the desired programme end date of July 2016 could not be achieved through this procurement approach: time taken for competitive tendering would delay the completion of construction activities. This in turn would have a knock-on effect on the operational commissioning process that would have to be undertaken by the operational team before the facilities could be used.

The best alternative to the traditional competitive approach is procurement of the contractor through a framework agreement – there are a number of suitable framework agreements available in the public sector. Due to time constraints as described above, this is the preferred approach for this investment business case.

UHL has a framework agreement with Interserve FM (IFM) for the provision of various services. IFM has assigned Interserve Construction Limited (ICL) to deliver UHL capital projects on request. ICL is thus the principle contractor for the delivery of UHL projects commissioned through the framework. Commercial arrangements and contracts are pre-agreed to cover commencement of a business case through to final delivery of the asset using an NEC3 Option C form of contract. Any cost savings generated through the development of the project are split between the contractor and the Trust, based on agreed rates/percentages.

The aim of this procurement approach is to engender a spirit of partnering and collaboration across the project team through to the contractor and subsequent supply chain. The risk of any cost increases over and above the agreed Guaranteed Maximum Price (GMP) after the GMP has been agreed and the construction has commenced sits solely with the contractor. The approach therefore leads to a proactive approach to risk management throughout the supply chain

1.4.1 Planning Permission

As this interim scheme for improvements to the existing facilities at GH will be contained within the existing building envelope, planning permission will not be required.

1.4.2 Building Research Establishment Environmental Assessment Method (BREEAM)

The design solution has been developed to meet BREEAM Healthcare “Very Good” standard, meeting the highest achievable standard for a part refurbishment project.

1.5. Financial Case

The Financial Case examines the affordability of the preferred options and sets out the financial implications for the Trust in terms of capital expenditure and cash flow, income and expenditure account and borrowing. The financial position of this business case shows an additional cost of £641,000 per annum. This is shown in the following table.

Table 11 Financial Position of this Investment Business Case

	2016/17 £'000	2017/18 £'000	2018/19 £'000
Operating Costs			
Middle grades	57	86	86
Consultants	78	117	117
Transport Team	93	140	140
Nurses	124	148	148
Facilities Management Costs	100	150	150
Total Operating Costs	452	641	641
Capital Charges			
Interest	77	112	107
Return on Assets	(13)	(25)	(25)
Depreciation	89	179	179
Total Capital Charges	153	265	261
Total Impact on I&E	605	856	852

Non-operating costs have been allowed for in the Trust's Long-Term Financial Model (LTFM), leaving the additional operating costs of circa £452,000 in 2016/17 and £641,000 in 2017/18 and 2018/19 outside the LTFM. If the Trust is to maintain the deficit reduction trajectory in the Financial Strategy, the operating cost revenue impact of this development is only affordable if the development is funded by the £4m per annum allowance made in the Financial Strategy for annual operating cost pressures. This approach has been supported by the Trust Board.

1.5.1 Capital Costs

The capital costs of the development total £4,712,232. Below is an analysis of the total costs.

Table 12 Capital Costs of ICU Reconfiguration

Capital Costs	Total
	£
Works Costs	3,255,595
Equipment	272,000
Fees	708,957
Planning Contingency	475,680
Total	4,712,232

1.5.2 Capital Related Revenue Costs

The other major cost element is the capital costs. The capital itself has been assumed to be funded through Interim Capital Support Loan (ICSL). The revenue consequences represent the interest on the loan provided and depreciation. However as the majority of the capital cost is based on a refurbished asset, it is unlikely to materially add to value, meaning that depreciation is low. Maintenance costs for ventilators are assumed to be allowed for in current budgets as the additional amount of equipment in the Trust does not increase.

The table below shows the basis of the capital charges calculation.

Table 13 Capital Charge Impact of Scheme (ICSL)

Critical Care Capital Charges	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000
Opening Balance		1,571	4,649	4,456
Drawdown	1,571	3,141		
Loan Repayments		(63)	(194)	(194)
Closing loan	1,571	4,649	4,456	4,262
Interest on loan (1 July 2015 rate 2.46%)	19	77	112	107
Return on Asset	0	(13)	(25)	(25)
Depreciation		89	179	179
Total Capital Charges and interest	19	153	265	261

The Trust has modelled the use of Public Dividend Capital (PDC) to fund the development rather than IBD. The position using PDC is as follows.

Table 14 Capital Charge Impact of Scheme (PDC)

ICU Capital Charges PDC	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000
Return on Asset	27	96	134	128
Depreciation		89	179	179
Total Capital Charges (PDC)	27	185	313	306

This analysis assumes an impairment of £698k relating to the fees spent on the development.

Although the Trust would earn a high rate of return if the scheme were funded through PDC, the Trust would also need to pay back the loan required to fund the scheme. It is assumed that £177k per annum loan repayment would be made from late 2016/17. Therefore the impact on I&E is compounded by an even more significant impact on the Trust's cash flow of £177k per annum. With everything else being equal, this would reduce the amount of operational capital available to the Trust by this amount.

1.5.3 Workforce Costs

The capital investment will provide a sustainable physical solution for the location of ICU beds at the Glenfield and LRI. The workforce costs relate to additional midgrade and consultant costs required at the Glenfield and the LRI. They also support an enhanced retrieval service to move any patient needing ICU support at the LGH.

The following changes in costs have been assessed as being necessary to deliver the scheme.

Table 15 Workforce Costs

	WTE	16/17 £'000	17/18 £'000	18/19 £'000
Middle grades	1.00	57	86	86
Consultants	1.00	78	117	117
Transport Team	2.00	93	140	140
Nurses	4.00	124	148	148
Total Staff Costs	8.00	352	491	491
FM Costs for new GH facility		100	150	150
Total Operational Revenue Costs		452	641	641

1.6 Management Case

The programme anticipating completion is set out below.

Table 16 Project Programme

	Description	Activity/ Milestone	Start date	End date
Retrievals Pathway	Share retrievals policy with all interested specialties and answer queries raised	Activity	19-Oct-15	31-Oct-15
Creation of site based implementation groups		Milestone	26-Oct-15	26-Oct-15
Fortnightly Meeting of Implementation Groups and ICU Programme Board		Activity	26-Oct-15	30-Jul-16
Retrievals Pathway	Confirmation of final model and requirements with EMAS	Activity	01-Nov-15	30-Nov-15
Re-Engage with OSC		Activity	01-Nov-15	31-Nov-15
ICU Spaces	Ward 34 handed over to Estates (GH)	Milestone	09-Nov-15	09-Nov-15
ICU Spaces	Conversion of Ward 34 to allow Bay B GH ICU activity to transfer	Activity	09-Nov-15	01-Jan-16
Business Case signed off at ESB		Milestone	17-Nov-15	10-Nov-15
Business Case signed off at CMIC		Milestone	20-Nov-15	13-Nov-15
Business Case signed off at IFPIC		Milestone	26-Nov-15	26-Nov-15
Retrievals Pathway	Specific Recruitment and Training	Activity	01-Dec-15	31-May-15
Identify staff in scope for MoC		Activity	01-Dec-15	31-Dec-15
Business Case signed off at Trust Board		Milestone	03-Dec-15	03-Dec-15
Mobilisation start (in line with FBC approval)		Milestone	mid-Dec 15	mid-Dec 15
LIA events at CMG/Specialty Level		Activity	01-Jan-16	31-Jan-16
Construction start		Milestone	04-Jan-16	04-Jan-16
ICU Spaces	Estates knock through wall of Bay B and transfer ICU beds into Ward 34	Milestone	04-Jan-16	04-Jan-16
ICU Spaces	Construction of Medium term ICU expansion	Activity	04-Jan-16	30-Sep-16
Draft MoC paper and undertake pre-consultation with staffside		Activity	01-Feb-16	28-Feb-16
Retrievals Pathway	New models fully operational	Milestone	01-Jul-16	01-Jul-16
ICU Spaces	Medium term ICU opens	Milestone	30-Sep-16	30-Sep-16

1.7 Conclusion

This business case delivers the best option for:

- ▶ A solution to the immediate clinical need to remove Adult Level 3 Critical Care capacity from LGH
- ▶ Eleven additional bed spaces at GH on Ward 34

- ▶ Equipment to allow these beds to run as functional ICU beds (net of any equipment transferred from LGH)

1.8 Recommendation

The Trust Board is recommended to approve this business case.

2 | The Strategic Case

2.1. Structure & Content of the Document

This business case has been prepared using the agreed standards and format for business cases, as set out in Department of Health guidance and HM Treasury Green Book. The case comprises the following key components:

- ▶ **The Strategic Case** | Sets out the strategic context and the case for change, together with the supporting investment objectives for the scheme
- ▶ **The Economic Case** | Demonstrates that the organisation has selected the choice for investment which best meets the existing and future needs of the service and optimises value for money (VFM)
- ▶ **The Commercial Case** | Outlines the content and structure of the proposed deal
- ▶ **The Financial Case** | Confirms funding arrangements and affordability and explains any impact on the balance sheet of the organisation
- ▶ **The Management Case** | Demonstrates that the scheme is achievable and can be delivered successfully to cost, time and quality

This Full Business Case (FBC) addresses the immediate clinical imperative of moving Adult Level 3 Critical Care services from the LGH site. This investment business case proposes the creation of additional Adult Level 3 capacity at the GH site, creating an additional eleven bed spaces by September 2016. These bed spaces will provide the capacity necessary to transfer clinical activities reliant on Adult Level 3 Critical Care from LGH in line with the Trust's stated deadline of July 2016.

It should be noted that between the end of July 2016 (when HPB and Renal Transplant activity relocates to the GH site) the GH ICU will be required to manage additional activity with three additional bed spaces. This business case sets out the creation of new capacity that will be operational by September 2016 and will provide enough physical bed spaces to cope with peaks and troughs in demand going into the winter period.

Without approval of this case sufficient capacity will not exist at GH to allow the aforementioned specialties to re-locate from the LGH by July 2016 and as a result would see those specialties cease surgical activity that required Adult Level 3 ICU support.

The Business case to provide additional ICU capacity at LRI was approved at CMIC in August 2015 and as such this case addressed the requirements of the GH department only.

The reconfiguration of UHL ICU services forms part of a much larger transformation programme that will deliver sustainable health and social care across Leicester, Leicestershire & Rutland (LLR). The 'Better Care Together (BCT)' programme is managed in partnership with NHS commissioners and providers, local councils and a variety of non-statutory services. To deliver the goals of the BCT Programme, the Trust has developed a five-year strategic plan underpinned by an estates strategy. These

articulate that to ensure future sustainability and affordability, UHL needs to relocate acute services from LGH to LRI and GH. A sum of £327m has been identified to fund the capital reconfiguration programme at UHL.

The outcomes of the BCT programme for UHL will include:

- ▶ Providing a greater focus on specialised care, teaching and research;
- ▶ Significantly smaller acute hospitals overall and fewer acute hospital beds, offering improved care and facilities;
- ▶ Concentrating acute services on two sites rather than three.

2.1.1. Clinical objectives

The primary clinical objective of the project is:

- ▶ To expand IR capacity at GH, thus enabling the movement of activity reliant on Adult Level 3 ICU from LGH to GH by July 2016

However there are secondary benefits that will be delivered which are in line with both the Trust and ICU strategies:

- ▶ To deliver a Critical Care service with the continuing capacity to offer high-quality care that improves patient outcomes
- ▶ Rationalisation of ICU beds in UHL from three to two sites, concomitantly improving quality and safety of care provided
- ▶ Improved patient experience and quality of care through maintenance of the Trust's clinical skills for the care of the most acute patients
- ▶ Sustainable 24/7 consultant cover
- ▶ Creating a more attractive employment opportunity for the next generation of intensivists, providing training opportunities – leading to better staff recruitment and retention
- ▶ Reduction in ICU-driven cancellations
- ▶ Better access to diagnostics, physiotherapy, imaging and pharmacy, by having more ICU beds on the two sites

Part A: The Case for Change

2.2 Introduction

The purpose of this section of the business case is to outline the strategic case for change.

2.3 Clinical Drivers for Change

The biggest risk to the delivery of a high quality ICU services offered by the Trust was identified as the lack of a suitably qualified workforce to maintain safe Level 3 ICU services at the LGH site. Lead clinicians from within Critical Care identified a number of key risks that require immediate action in addressing the long term sustainability of Critical Care across UHL. These risks were presented to a number of clinicians and managers from a range of affected specialties and formed the basis of the case for change. The risks raised were:

- ▶ A gradual movement of high dependency patients from LGH to GH and LRI sites and changes in patient flows restricts opportunities for critical care staff to maintain experience in providing care for critically ill patients. An erosion of skill base presents further risk to the most vulnerable patients in the future. This impacts on both the consultant workforce and the middle grade workforce who cannot gain suitable experiences at the LGH site
- ▶ In addition to eroding the skill base at the LGH site, efforts to recruit Consultant Intensivists have failed to attract suitably qualified clinicians in an already 'difficult to recruit' market. It is predicted this issue will be compounded when three Consultant Intensivists are due to retire in the summer of 2016. In 2014 advertisements for Consultant Intensivists at LGH were re-advertised and attracted a limited pool of applicants. Much greater levels of success are experienced for posts advertised at the LRI and GH sites
- ▶ A shortage of suitably qualified staff is replicated in the nursing workforce who can elect to work from the GH and LRI sites or alternative local hospitals offering more extensive critical care experience

If the sustainability of ICU provision across UHL is not addressed by July 2016, then the Adult Level 3 ICU service on the LGH site will cease to be provided. This course of action will lead to the cancellation of all surgery and emergency activity at the LGH site which is predicted to require level three critical care support. This reduction in activity, whilst unavoidable on the grounds of clinical quality and safety, will see a resultant loss of quality of care for Leicester patients, damaged reputation for the Trust and loss of future income.

It was agreed by the Trust Board, and in discussion with the Overview and Scrutiny Committee (OSC), that responding to the clinical concerns raised above was of

paramount importance and warranted the immediate commencement of work to deliver the relocation of adult Level 3 Critical Care services from LGH.

Upon commencement of the project the Adult Level 3 ICU service was anticipated to be viable until December 2015. However, due to the complexity of the solutions required and the sheer number of stakeholders that required involvement, the project delivery date was revised to July 2016. This has only been possible due to the flexibility and co-operation of staff within ICU at UHL.

It must be noted that until July 2016, interim staffing arrangements are in place to ensure that the ICU provision at the LGH continues to be a safe and high quality service.

While set in the context of the above clinical need, the specific clinical driver for the changes proposed by this business case is:

- ▶ The requirement to move adult Level 3 Critical Care services from LGH and the need to create sufficient ICU capacity to allow this movement of activity

The investment required, is however, in keeping with the Trust's longer term strategic objectives. UHL's Five Year Strategy envisages that HPB, Nephrology and Renal Transplant services would all move to the GH site. Reconfiguration of the Trust's ICU provision to enable a full consolidation of Critical Care and high dependency services at the LRI and GH locations in the long term will facilitate:

- ▶ A greater concentration of the appropriate skill set for Level 3 care
- ▶ Exposure to cutting edge interventions and complex case work
- ▶ Greater efficiency in rotas which will improve recruitment and retention
- ▶ An improvement in a range of measures known to improve staff engagement (such as personal development and opportunities for stretch)

Part B: The Strategic Context

2.4 Introduction

This section provides an overview of the context in which the Trust provides its services and the strategic guiding principles, directives and policies that ensure clinical quality standards are met. The intention is to provide an overview of the Trust and its strategic objectives, to highlight current Level 3 care service delivery and set the context for this business case. It also provides an overview of the policy drivers and technical guidance documents at national, regional and local levels.

2.5 Organisational Overview and Background

2.5.1 University Hospitals Leicester NHS Trust

UHL is one of the largest teaching hospitals in the country and operates across three main sites (LRI, LGH, and GH). It is the only acute Trust serving the diverse local population of Leicester, Leicestershire and Rutland (LLR); totalling approximately 1 million residents.

The nationally and internationally-renowned specialist treatment and services in cardio-respiratory diseases, cancer and renal disorders reach a further two to three million patients from the rest of the country.

2.5.2 Clinical Management

Clinical management within the Trust is provided by seven clinical management groups (CMGs), each led by clinical director who in turn reports to UHL's Chief Operating Officer Richard Mitchell. All seven CMGs will be affected by the proposed redevelopment. The groups are as follows:

- ▶ Critical Care, Theatre, Anaesthesia, Pain and Sleep (ITAPS)
- ▶ Cancer, Haematology, Urology, Gastroenterology & General Surgery (CHUGGS)
- ▶ Clinical Supporting and Imaging (CSI)
- ▶ Emergency and Specialist Medicine (ESM)
- ▶ Musculoskeletal and Specialist Surgery (MSS)
- ▶ Renal, Respiratory, Cardiac and Vascular (RRCV)
- ▶ Women's and Children's (W&C)

The CMGs comprise clinicians, nurses, allied health professionals and managers; each one has developed strategies to deliver the Trust's strategic objectives.

2.5.3 Activity and Finance

UHL provides hospital- and community-based healthcare services to patients across LLR. It also provides specialist services to patients throughout the UK. The Trust is actively engaged with key stakeholders to implement NHS policy to improve health services through a range of formal and informal partnerships. The UHL team consists of more than 10,000 staff providing healthcare primarily for the one million-plus LLR residents it serves. The nationally and internationally-renowned specialist treatment and services in cardio-respiratory diseases, cancer and renal disorders reach a further two to three million patients from the rest of the country.

The Trust's main sources of income are derived from:

- ▶ Clinical Commissioning Groups
- ▶ NHS England
- ▶ Education and training levies

The Trust was formed in April 2000 and successfully met its financial targets for the first 12 years. Financial results for 2011/12 and 2012/13 show that the Trust made a surplus of £88k and £91k respectively. However 2013/14 was a challenging year both operationally and financially and the Trust reported a deficit for the first time since the organisation was formed. In 2014/15 there was a £40.6 million deficit against a plan of £40.7 million.

2.5.3.1 Financial review for the year ended 31 March 2015

UHL did not meet all of its financial and performance duties for 2014/15; it failed to break even. This was expected, however, and mitigated by a deficit reduction plan. In respect of the Trust's formal duties:

- ▶ **Balancing the books** – delivery of an income and expenditure deficit of £40.6m
- ▶ **Managing cash** – UHL delivered both the External Financing Limit (EFL) and Capital Resource Limit (CRL)
- ▶ **Investment in buildings, equipment and technology** – the Trust invested £46.2 million in capital developments

2.5.4 Key National Strategies

Key national strategies, programmes and policies relevant to this project are summarised in the table below.

Table 17 National Strategies, Programmes and Policies

Strategy	Aims
<p>DH report “Comprehensive Critical Care: a Review of Adult Critical Care Services” 2000</p>	<p>The report recommends the establishment of adult critical care networks. (It was published in response to national concerns regarding critical care capacity, equity of access and quality of care.)</p>
<p>National Adult Critical Care Stakeholder Forum document, “Quality Critical Care – Beyond Comprehensive Critical Care” 2005</p>	<p>The document recommends that “critical care networks be retained, strengthened and fully developed in line with local priorities and needs”.</p>
<p>Operational Delivery Networks (ODN) established 1st April 2013</p>	<p>From the 1st April 2013 adult Critical Care services across NHS England have been required to be delivered through integrated Operational Delivery Networks (ODN) with services delivered across providers in a pre-determined geographical area.</p>
<p>NHS England Service Specification No. D16 Adult Critical Care 2014</p>	<p>The Service Specification for Adult Critical Care states:</p> <p>“Interdependencies with other services/providers <i>The management of critically ill patients whether commissioned by NHS England or CCGs requires the input of a number of medical and non-medical specialties, and other agencies. Ultimately the nature of core supporting services will be dependent on the patient case mix of the critical care unit but the following shall be considered as minimum interdependencies:</i></p> <p>Co-located Services – to be provided on the same site and to be immediately available 24/7:</p> <ul style="list-style-type: none"> • Competent resident medical practitioner with • advanced airway skills (anaesthetist/Intensive Care Medicine) • General Internal Medicine • Endoscopy • Radiology: CT, Ultrasound, plain x-ray • Echocardiography/ECG • General Surgery for any site with unselected medical admissions. • Access to Theatres • Transfusion Services • Essential haematology/biochemistry service and point of care service • Speciality Intensive Care Units must have their speciality specific

Strategy	Aims
	<p><i>surgical service co-located with other interdependent services e.g. Vascular surgery with interventional vascular radiology, nephrology and interventional cardiology; obstetrics with general surgery</i></p> <ul style="list-style-type: none"> • Informatics support • Physiotherapy • Pharmacy • Medical Engineering Services <p>Interdependent Services, available 24/7 <i>The response time to these specialities will depend on the case mix of the patient population and will range from available within 30mins to a maximum of 4 hours. For services not immediately available on site service level agreements need to specify response times.</i></p> <ul style="list-style-type: none"> • Interventional Vascular and non-vascular Radiology • Neurosurgery • Vascular Surgery • General Surgery • Nephrology • Coronary Angiography • Cardiothoracic Surgery • Trauma and Orthopaedic Surgery • Plastic Surgery • Maxillo-facial Surgery • Ear, Nose and Throat Surgery • Obstetrics and Gynaecology • Organ Donation Services • Acute/Early Phase Rehabilitation Services • Additional laboratory diagnostic services”
<p>NHS England guidance</p> <p>“NHS Commissioning: Specialised services: National Programmes of Care and Clinical Reference Groups Internal Medicine – Group A A15 Interventional Radiology”</p>	<p><i>“The service specifications are important in clearly defining what NHS England expects to be in place for providers to offer evidence-based, safe and effective services. They have been developed by specialised clinicians, commissioners, expert patients and public health representatives to describe core and developmental service standards. Core standards are those that any reasonable provider of safe and effective services should be able to demonstrate, with developmental standards being those that really stretch services over time to provide excellence in the field.</i></p> <p><i>Documents will be published online shortly at https://www.england.nhs.uk/commissioning/spec-services/npc-crg/group-a/a15/”</i></p>

Strategy	Aims
<p data-bbox="245 992 443 1223"> Intensive Care Society “Guidelines for the provision of intensive care services” 2015 </p>	<p data-bbox="491 333 1337 389">The guidelines include the following guidance pertinent to this business case:</p> <p data-bbox="491 427 1366 607"> “Interactions with other services <i>Intensive Care Medicine presents an interesting paradox. It owns few, if any, unique therapies or interventions; it has an impressive track record of negative clinical trials; and yet ... there has been an inexorable improvement in case-mix adjusted mortality rates from critical illness over the years.</i> </p> <p data-bbox="491 645 1353 882"> <i>Broad inspection of the research literature suggests that most gains are to be made from interventions which facilitate earlier diagnosis and treatment, minimise the harmful effects of organ support, enhance communication, and promote a proactive system-wide approach to the care of patients at risk of critical illness. The ‘art’ of intensive care therefore lies more in integrating multi-professional care and complex interventions over time, across locations and between teams, than in the delivery of any single treatment.</i> </p> <p data-bbox="491 920 1366 1496"> <i>Consequently, intensivists must be systems experts, both in terms of physiology and of healthcare delivery. Interaction with ‘other services’ starts with the multi-professional teams in the Intensive Care unit: doctors, nurses, advanced Critical Care practitioners, physiotherapists, dietitians, infection control and microbiology, and pharmacists; with further input by occupational therapy, speech and language therapy, and clinical psychology. The morning and evening rounds are key opportunities to draw together information about the patients, to establish daily goals and determine main risks and communication tasks, using a standardised data collection sheet or an electronic equivalent. Given the size of the ICU team, and the impact of staff rotations and shift-working, it helps cohesion and flattens hierarchies if the morning round starts with each member introducing themselves by name and rank, including the consultants. Interaction with microbiology is best conducted with relevant laboratory data available and at a consistent time each day. The appropriateness, dose, and duration of antimicrobial therapies may be reviewed, together with the ecology of the ICU, screening practices, and patterns of resistance. Ideally a senior member of the nursing staff should also be present.</i> </p> <p data-bbox="491 1534 1366 1895"> <i>The timing of interactions with visiting medical or surgical teams will need to accommodate their other commitments. One approach is to establish, as a routine, a brief early morning case review with a trainee member of the visiting team (to determine dischargeability for example) which may then be followed in the middle of the day by consultant-to-consultant discussion, informed by available laboratory or imaging tests. Continuity of care between teams and over time is essential. Radiological investigations should be planned in discussion with the radiologist performing the procedure. Ideally the consultant intensivist should review imaging results directly with the radiologist rather than receiving the report at a later stage, particularly if interventional radiology is a possibility.”</i> </p>

2.5.5 Key Regional Strategies

2.5.5.1 The Leicester Joint Strategic Needs Assessment (JSNA)

A Joint Strategic Needs Assessment (JSNA) is a statutory requirement (Health & Social Care Act 2012) placed upon the Directors of Public Health, Adult and Children's Services in all local authorities to guide the commissioning of local health, well-being and social care services. The JSNA provides a systematic method for reviewing the short and long term health and well-being needs of a local population. This JSNA is an important starting point for strategy development and commissioning decisions.

The latest available JSNA for Leicester (2012) states that:

“People in the city die early, particularly from circulatory diseases, cancers and respiratory disease. Poor health is largely driven by deprivation and exacerbated by lifestyle factors embedded within communities. The inequalities gap in health between Leicester and England is not narrowing and the gap between the more deprived and the more affluent communities within Leicester has remained a stubborn inequality. We want to improve the health and wellbeing of the poorest fastest.”

Leicester is ranked 25th worst out of 326 local authority areas in England on the national Index of Deprivation (2010). There are also areas of deprivation outside the city – notably certain wards of North West Leicestershire.

In general, the next 20 years is forecast to see an increasingly ageing population, particularly in the county areas. Of the total population growth of 32,000 to 2019, 22,000 will be in the over-65 group. This is largely a challenge in the county areas. By contrast, the key challenge in Leicester City will continue to be premature preventable death and disability.

As people grow older, there is a higher preponderance of long term illness and disability. The number of people living with long term conditions will grow as a population ages. Furthermore, many people will have multiple conditions, meaning their care needs are more complex. From a health need perspective there is a marked variation in life expectancy across LLR with the main factors contributing to mortality being cardio-vascular disease (CVD) and respiratory. Any plans for service improvement must respond to these challenges and make a significant contribution towards better outcomes.

2.5.6 Key Local Strategies

2.5.6.1 Better Care Together: A Blueprint for Health & Social Care in LLR 2014 - 2019

For (LLR) a Long Term System Model (the “Model”) has been constructed to articulate what would happen when faced with the challenges described in the “A Call to Action” (published by NHS England). If no action were to be taken to improve the quality, outcomes and value for money of services currently provided to patients, or to develop new services, then the model predicts a financial gap over the next five years that rises to £398m by 2018/19.

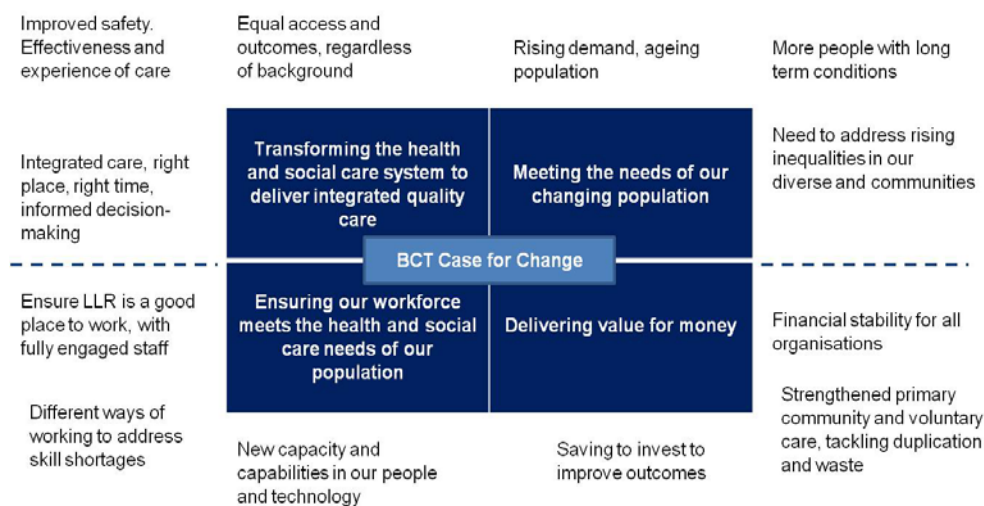
In response, the BCT programme represents the biggest ever review of health and social care across LLR. The programme represents a partnership of NHS organisations and local authorities across LLR, working together to achieve major transformation in the current and future delivery of services that are of the highest quality and are capable of meeting the future needs of local communities.

The programme is underpinned by a clear case for change with the aim of focusing on a significant increase in community based prevention and care and delivering only the most complex care from an acute hospital setting. As a consequence of the shift to community settings the Trust intends to consolidate acute services onto a smaller footprint and to grow its specialised, teaching and research portfolio, only providing in hospital the acute care that cannot be provided in the community. In doing this the Trust expects to significantly increase the efficiency, quality and, ultimately, the sustainability of key services; shrink the size of the required estate; significantly rebalance bed capacity between acute and community settings; provide alternative solutions to traditional in-patient care and thus reduce total costs. The impact of this on UHL could include:

- ▶ Delivering better care to fewer patients
- ▶ Making more of our specialist expertise available to primary and social care and delivering more of our non-specialist services to the community
- ▶ Play a much bigger role in preventing illness and supporting patients before they reach a point of crisis
- ▶ A greater focus on specialised care, teaching and research
- ▶ Redevelopment of the Emergency Department at the LRI
- ▶ Significantly smaller acute hospitals overall
- ▶ Fewer acute hospital beds
- ▶ Concentrating acute services on two sites rather than three
- ▶ Reshaping services on the LGH site including community beds and the Diabetes Centre of Excellence.
- ▶ Financially sustainable

The BCT case for change is summarised in the diagram below.

Figure 1 Better Care Together Case for Change



2.5.6.2 UHL's 'Caring at its Best' strategy

In the next five years, UHL will become a Trust that is internationally renowned for placing quality, safety and innovation at the centre of service provision.

The Trust will build on its strengths in specialised services, research and teaching, offer faster access to high quality care, develop its staff and improve patient experience.

UHL recognises the significant challenges it faces alongside others in the LLR health and social care system, including:

- ▶ The long-term financial pressures facing all public sector organisations;
- ▶ Rigorous regulation of healthcare providers within a competitive landscape;
- ▶ Changes in the wider health and political landscape;
- ▶ Focus on choice;
- ▶ Greater patient and community involvement;
- ▶ The inherent inefficiency of the Trust's current physical configuration;
- ▶ Fiscal drag of ageing estate reflecting incremental development over decades.

The UHL team consists of more than 10,000 staff providing healthcare primarily for the one million-plus LLR residents it serves. The nationally and internationally-renowned specialist treatment and services in cardio-respiratory diseases, cancer and renal disorders reach a further two to three million patients from the rest of the country.

UHL works with partners at the University of Leicester and De Montfort University providing world-class teaching to nurture and develop the next generation of doctors, nurses and other healthcare professionals, many of whom go on to spend their working lives with the Trust.

The Trust focuses on being at the forefront of many research programmes and new surgical procedures, in areas such as diabetes, genetics, cancer and cardio-respiratory diseases. UHL is now the home of three National Institute of Health Research (NIHR) Biomedical Research Units and during the year carried out over 800 clinical trials, bringing further benefits to thousands of patients.

The heart centre at GH continues to lead the way in developing new and innovative research and techniques, such as TAVI (Trans-Catheter Aortic Valve Insertion) and the use of the suture-less valves in heart surgery.

UHL also has one of the best vascular services nationally, with more patients surviving longer after following an aneurysm repair (to fix a life threatening bulge in a blood vessel).

The Trust has some of the lowest rates of hospital-acquired infections, such as C. Difficile and MRSA, in the country; the hospital standardised mortality rates are very good, demonstrating a high clinical quality; with the provision of food has also been rated as 'excellent' by an independent panel.

UHL's purpose is to provide 'Caring at its Best' and staff have helped to create a set of values, which are:

Figure 2 *Caring at its Best*



UHL patients are at the heart of all that is done at the Trust. 'Caring at its Best' is not just about the treatments and services provided but about giving patients the best possible experience.

Each element of the objectives and supporting strategy are performance-managed through the Trust Board scorecard, regularly reported to Board through the Integrated Performance Report (IPR).

2.5.7 The Trust's Strategic Objectives

The strategic objectives of the Trust are to provide:

- ▶ Safe, high-quality, patient-centred healthcare

- ▶ An effective and integrated emergency care system
- ▶ Services which consistently meet national access standards
- ▶ Integrated care in partnership with others (local and specialised)
- ▶ Enhanced delivery in research, innovation and clinical education
- ▶ A caring, professional and engaged workforce
- ▶ A clinically sustainable configuration of services, operating from excellent facilities
- ▶ A financially sustainable NHS organisation
- ▶ Enabled by excellent IM&T

Figure 3 UHL's Strategic Objectives



2.5.8 UHL Five Year Integrated Business Plan 2014 – 2019

The Trust's Five Year Integrated Business Plan 2014-2019 was developed through four key phases: evidence gathering; analysis, synthesis; and planning. In developing the strategy, the Trust has identified that it operates predominantly in two core markets:

- ▶ Local services for LLR where it is the major provider of local secondary care services
- ▶ The wider Midlands and East regional economy where the Trust is a key provider of specialised adult and children's services
- ▶ In order to deliver financially sustainable, high quality services in the future, UHL's hospitals will need to become smaller and more specialised whilst supporting delivery of care in the community

2.5.9 The Trust's Five Year Estate Strategy (June 2014)

The Trust's current Estate Strategy identifies the need for flexibility, to move property from being a constraint to being an enabler for change.

The Trust has undertaken an exercise to review the strategic future of its estate, with a view to creating a development control plan that looks twenty years ahead, recognising that "The quality and fitness for purpose of the NHS Estate and the services that maintain it are integral to delivering high quality, safe and efficient care"⁵. Of course the estate is also an area of significant spend: the budget for Estates and FM Services across the Trust in 2013/14 was £31m.

UHL has also developed a 'Hospitals Estate Transformation Plan', which is based on a strategy that consolidates the estate, develops new facilities, disposes of surplus land and buildings and encourages third party partnerships that will raise income for the Trust. This plan will be a cornerstone of service reconfiguration and improved utilisation of the Trust's estate. This must be balanced by organisational and public expectations about the provision of highly specialised services alongside local access to primary and secondary care, in the context of high levels of public support for the associated hospitals. It is in this context that any opportunities for significant and far-reaching estate transformation will be determined.

The Hospitals Estate Transformation Plan will:

- ▶ Underpin the strategic direction of the Trust through the transformation of the physical estate
- ▶ Support the clinical strategy to improve patient pathways and to improve the quality of care
- ▶ Support the Strategic Outline Case for reconfiguration across the sites
- ▶ Show a clear implementation programme over five years for transformation with tangible benefits
- ▶ Improve the patient and staff built environment, investing in improved facilities and infrastructure; greatly aiding recruitment and retention
- ▶ Identify capital developments that will unlock the embedded value of Trust assets
- ▶ Support the Trust's capability to deliver clinical transformation and achieve QIPP efficiency savings

Efficient estate solutions will improve frontline service provision as well as achieving improved utilisation of the estate. This will be achieved by delivering a high-quality

⁵Treasury Value for Money Update, 2009

clinical and working environment for patients and staff – resulting in better levels of recruitment and retention, productivity, flexibility and patient and staff satisfaction.

The Transformation Plan will also support cross-CMG strategies that maximise optimisation of the estate resources across UHL. It will set out detailed strategies for the Trust's three main hospital sites. The Estates Strategy will be updated during 2015/16.

2.5.10 Stakeholder Engagement

Owing to the urgent clinical need to expedite this reconfiguration, in the early part of 2014 the Overview and Scrutiny Committee (OSC) was informed of the clinical need and supported the Trust's intention to proceed with the programme at pace and without the need for public consultation.

The over-arching ICU project has seen a wide variety of engagement from across the Trust and also further reaching:

Over-arching ICU programme:

- ▶ Involvement of key service leads from all affected areas through planning
- ▶ Representation of Healthwatch patient representative on ICU Board
- ▶ Communication with OSC at key points within the project
- ▶ Site based communication events

Staff currently working at the LGH site in Level 3 will be affected by this change due to the change in location of this service. This will be managed through a robust and transparent change management process to ensure that high quality services can continue to be provided and that disruption to staff is minimised.

In order to ensure that an optimal working environment is achieved the following specialties were consulted during the design process and have signed off the design:

- ▶ Infection Prevention Team
- ▶ Clinical Teams (Consultants, Matrons)
- ▶ Fire Officer

The undertaking of such a wide ranging set of engagement activities has been crucial in ensuring that clinical staff have been heavily involved in planning, crucial in such a complex project. The input of patient representatives has also ensured that decisions taken have remained centred around the best interest of patients.

2.5.11 The Trust's Clinical Strategy

UHL is focused on delivering high-quality, patient-centred services in the most appropriate setting with excellent clinical outcomes. There is a process of continual

quality improvement for clinical outcomes, morbidity and mortality rates and other clinical indicators to ensure that the Trust remain the provider of choice for patients.

The strategy reflects the changes in population demographics, placing the patient at the centre of service planning and design, ensuring that holistic, patient-centred care remains at the heart of everything we do. For example, services will be tailored to meet the challenges of a rising elderly population; ensuring integrated care is provided across primary, community and social care.

The Trust will work with partners to develop the infrastructure and networks to offer expertise across the health community to ensure that care for the older person is as seamless as possible.

- ▶ **Developing a more flexible and integrated workforce**
 - ▶ The model of clinical practice will be to provide consultant-delivered (rather than consultant-led) patient care.
 - ▶ The Trust will seek and exploit opportunities for service integration across health and social care by removing the historical barriers to change.
 - ▶ Training and education will play an integral part in ensuring staff have the right skills now and for the future. Training opportunities to support self-care in long-term condition management and carers will be explored.
 - ▶ UHL will create a sustainable workforce for the delivery of responsive multi-disciplinary clinical services seven days a week that meets the needs of patients and clinicians.
 - ▶ UHL will ensure that appropriate staffing is recruited and retained to achieve the identified standards.

- ▶ **Consolidating and making better use of finite resources**
 - ▶ People are living longer, and the NHS' ability to treat and help to manage conditions that were previously life-threatening continues to improve. Alongside this, the NHS faces a potential funding gap of around £30 billion by 2020/21 meaning that the NHS will need to radically transform the way it has traditionally provided care to new and innovative models necessitating a significant shift in activity and resource from the hospital sector to the community.
 - ▶ UHL will meet this funding gap by working collaboratively with its LLR Health & Social Care partners to re-design patient care pathways to ensure that they continue to provide high quality care, outcomes and patient experience whilst delivering value for money.
 - ▶ The Trust has an on-going operating deficit in part related to the current configuration of its clinical services which do not optimise clinical adjacencies and patient pathways.
 - ▶ In order to deliver financially sustainable, high quality services in the future, UHL's hospitals will need to become smaller and more specialised whilst supporting delivery of care in the community.

- ▶ As a consequence UHL has developed a clinical and estates strategy that optimises where and on which site its services are located as care pathways are changed to meet the financial challenge. The methodology about future location of services is clinically driven, evidence based, inclusive, open and transparent, and involve patients and the public in a meaningful way however will necessitate tough decisions for the health community if it is to meet the 'value for money' test.
- ▶ The Trust is proactively responding to the national drive towards fewer regional centres of excellence for specialised services by ensuring its services deliver innovative, high quality patient care through robust research and development programmes that enable patients to benefit from leading edge developments in the care of specific conditions.
- ▶ The Trust will specifically seek to ensure it remains as a national centre of excellence for its work in Cardiac, Respiratory, Vascular, Renal, Cancer and Diabetes and significantly strengthen its portfolio of other key services to ensure they are sustainable in the future.

2.5.12 The Trust's ICU Strategy

Whilst this case is based upon the clinical imperative to relocate Adult Level 3 Critical Care services from the LGH by July 2016 it is important to note that the actions set out within this business case also support the overarching strategy for delivering ICU care at UHL and both the national and local imperatives identified above.

There is a recognised move towards using critical care beds at an earlier stage in a patient's treatment. On an international level the UK already has a low number of ICU beds compared to its population, and even within the UK UHL is notable as a Trust with a low provision of ICU beds per capita.

The Trust's five-year strategy for delivering critical care services is the creation of two super critical care units by 2019 at the LRI and GH. These will care for Level 2, 3 and 4 patients staffed and delivered to the national core standards to ensure that the local population and referrals for tertiary care have the highest quality care in the most appropriate environment. This will be supported by a robust tier of Level 1 care beds within specialties throughout the organisation which will, in turn, be supported by critical care outreach services delivering 24/7 service.

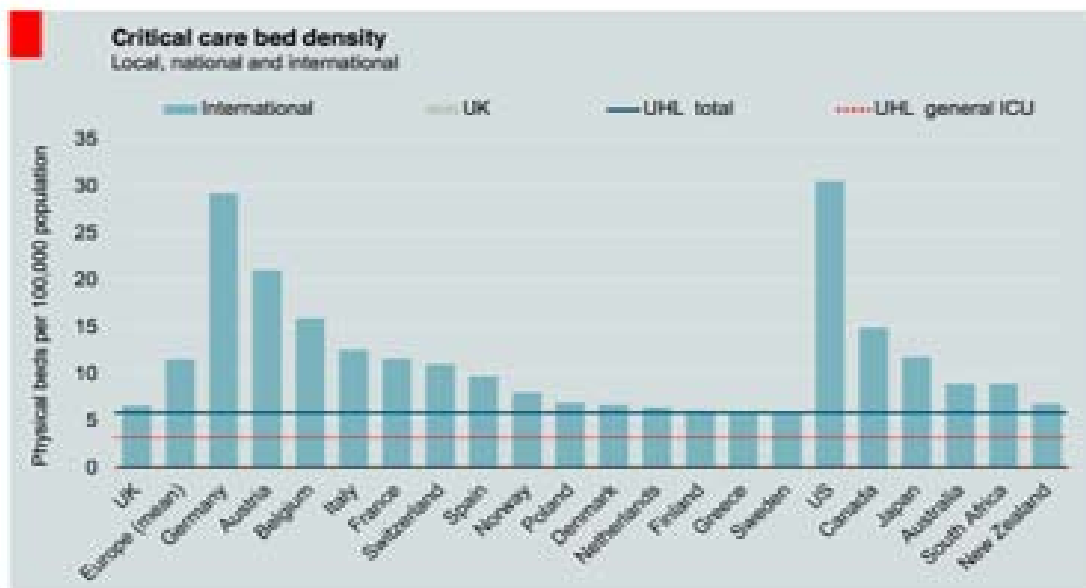
The first year of the strategy is underway, precipitated by the need to re-locate adult Level 3 ICU beds at the LGH due to on-going staffing issues. This has driven the need to provide an interim solution for an expansion of the adult Level 3 ICU beds at the LRI and the GH, pending implementation of the longer-term solutions to address the identified gap in capacity over the next ten years.

The imperative is to deliver the change as rapidly as possible; the realistic timescale sees delivery by July 2016.

The strategy for delivering ICU care at UHL supports both the national and local imperatives identified above.

Figure 4 Critical Care UK and International Capacity Benchmarks

UHL is at the lower end of the range of UK and international critical care capacity benchmarks



To inform the strategy a number of process reviews were considered by the Trust including the West Midlands Quality and Standards Peer Review – quality and standards (October 2011); UHL Expansion of Adult Critical Care Services (2012); EMPACT – commissioning paper (July 2011); Guidelines for Provision of Intensive Care Services (2015).

The Trust’s ICU strategy also takes into consideration the revised core standards published by the National Society of Intensive Care Medicine (NSICM) in 2013. These were adapted by NHS England to develop their draft service specification for adult Critical Care facilities (D16). D16 has key ‘dashboard’ standards that provide commissioners with the opportunity to performance manage provider services to ensure that compliance with standards is achieved. The proposal from specialised and local commissioners is that all Critical Care services within UHL, including satellite HDU areas, will be monitored against these standards as part of the annual contract.

In addition, the strategy responds to a report produced by an external company (Brazian Ltd) in November 2014, which assessed the Trust’s current and future requirements for ICU and HDU beds. It indicated that UHL is under-resourced for HDU and ICU beds. The company recommended the following:

- ▶ With the case mix of patients treated currently in UHL there would be substantial benefits from merging smaller units to create larger units where economies of scale can be achieved.
- ▶ There will be a limit on what can practically be done as moves of HDUs will require movements in the specialities too. Phasing of capital expenditure is also a consideration.
- ▶ Merging HDU units is recommended for quality and governance reasons. This could be undertaken in the medium term (1-5 years).
- ▶ If reconfiguration can be achieved in five years it is recommended that at least a 15% increase in capacity is planned for every 10 years. More precise predictions will depend on the effect of new interventions on length of stay. Remodelling in 2018/19 is recommended.

2.6 Current Activity and Demand

UHL currently provides Level 3 adult Critical Care services at each of its three acute sites. This provision enables a range of specialties, each requiring a co-location with Level 3 Critical Care to be delivered across all three acute sites.

Currently GH Adult Intensive Care (AICU) admits over 1,600 patients per annum with approximately 75% of these being planned or unplanned cardiac surgery admissions. The majority of emergency admissions are from the cardiology and respiratory wards.

GH AICU is also a regional tertiary centre for severe acute respiratory failure (SARF) and extra-corporeal membrane oxygenation (ECMO) admissions.

The LRI unit admits nearly 1,400 patients per annum with approximately 85% of these being emergency/unplanned admissions. The emergency admissions come from three sources: the emergency department, from theatres and from the ward base at LRI. The majority of the planned cases consist of expedited major surgery for cancer and vascular surgery.

The LGH Department of Critical Care Medicine (DCCM) admits 900 patients per annum with approximately 60% of these being planned surgical admissions. Emergency admissions come from general surgery, nephrology, urology, renal transplant and obstetrics & gynaecology. These come to the unit from general wards, SACU, nephrology wards and renal HDU but, in addition, LGH DCCM accepts tertiary referral hepatobiliary patients from surrounding DGHs.

The patient population across GH and LRI will change following the movement of Vascular surgery from LRI to GH in April 2016 and a subsequent reconfiguration of services in July 2016 within UHL (with HPB, and Renal Transplantation services being transferred to GH). The section below sets out how the numbers of physical spaces on each site were determined to feed into the estates brief.

2.6.1 Demand and Capacity Modelling

Models of care take into account factors including patient type, specialty and modality (Appendix 2). Capacity and demand planning will ensure that activities are performed at the relevant sites so as to meet clinical and organisational waiting times.

Detailed work has been undertaken using Intensive Care National Audit & Research Centre (ICNARC) data for 14/15, based on final assumed destinations of specific services and patients post reconfiguration of the ICU departments

In order to make this analysis as robust as possible two complementary pieces of analysis were undertaken to:

- ▶ Review overall bed days proposed on each site and also;
- ▶ Analysis of patients in beds on a daily basis

Undertaking both methods has ensured that peaks in demand have been allowed for in terms of physical space deemed to be required.

Growth

The Trust has seen growth in both cardiothoracic activity and cancellation figures, as evidenced below:

Cancellations

- ▶ Cancellations have been added based on April 2014 – Dec 2014 data, extrapolated for 12 months. Bed day requirement is based on ICU average length of stay of 4.4 days as per ITAPS internal reports.

Table 18 Number of Cancellations by Hospital

Hospital (Cancellations)	Apr	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-Mar	Total	Additional bed days
GH							1	9	3	13	59
LGH	1	1	4	2	1	1	2	4	5	21	94
LRI	1	2	2	1	8	3	2	10	10	39	170
Grand Total	2	3	6	3	9	4	5	23	23	78	323

Increased Cardiothoracic activity

- ▶ Cardiac operating lists at GH have increased from 13 to 14 per week. One list equates to 100 cases per year or 250-300 ICU bed days
- ▶ Thoracic surgery similarly has seen an increase from 3 to 4 WTE consultants, an increase that would equate to 27 extra ICU admissions with 140 Level 2 and Level 3 combined bed days

In total GH is deemed to require capacity for around 125 additional cardiothoracic cases, needing up to 450 bed days (1.4 beds modelled at 90% occupancy).

Required capacity overall

The table below summarises the daily profiled data and shows that a total of 58 physical bed spaces is required across UHL in the future. This factors in:

- ▶ Current activity, increased cardio-thoracic activity and the ability to absorb bed requirements of previously cancelled patients.

Table 19 Current Configuration of Beds by Hospital

Site	Current Configuration	Post Reconfiguration			Total beds required
	Beds Required (based on 1.5SD)	Beds Required (based on 1.5SD)	Additional beds for cancellations	Additional beds for increased cardiothoracic activity	
GH	21.57	28.55	0.20	1.40	30.15
LRI	21.06	23.40	0.50		23.90
LGH	11.65	2.76			2.76
Total	54.28	54.71	0.70	1.40	56.81

As a consequence of the increased activity as described above, physical bed spaces will need to:

- ▶ Increase by 9 (from 22 to 31) at GH
- ▶ Increase by 2 (from 22 to 24) at the LRI
- ▶ Reduce by 9 (from 12 to 3) at the LGH (however this number will need to represent the safest configuration as set out by the ICU clinical leads)

Table 20 Required Future Bed Spaces by Hospital

Site	Required Physical Bed Spaces		
	Required Beds (rounded up)	Current physical bed spaces	Additional physical bed spaces required
GH	31	22	9
LRI	24	22	2
LGH	3	12	-9
Total	58	56	2

2.6.2 Vision of ICU throughout relocation of LGH activity

For more information on the estates elements of this project please see the Estates Annex at Appendix 3.

2.6.2.1 Proposed interim AICU Expansion (January – August 2016)

In order to accommodate movement of services from LGH to GH, an expansion of the AICU is scheduled for January – August 2016. During building works to develop the AICU, the main unit will close four physical bed spaces (three beds in bay B and one side room). It is proposed that six beds in Ward 34 (currently a cardiac surgery ward) will be temporarily used as a Level 2 area during the building works. This will provide a net gain of two physical spaces for Critical Care allowing flexibility and managing flow.

Thus, the interim AICU during this time will comprise of a main AICU with 18 beds (of which six are side rooms) and a satellite AICU with six beds (of which two are side rooms). The total number of beds will be 24 beds of which eight are side rooms.

Owing to its remote location from the main unit, ward 34 will require its own dedicated resident medical and nursing team (including a supernumerary nurse). It is to be utilised flexibly in the same way as the main unit; however, the Trust would avoid admitting Level 3 or unstable Level 2 patients in this area if at all possible. The satellite area is to be run clinically as if it were within the walls of the existing unit (i.e. it is part of AICU). It will therefore be subject to the same philosophy, principles of care and access as the main unit.

Before completion of the AICU expansion, Vascular surgery is expected to transfer to GH in April 2016. Capacity for two beds for Vascular surgery has been planned with the net gain of two beds in Ward 34.

2.6.2.2 Transfer of services from LGH to GH (late July 2016)

All elective HPB and Renal Transplant services with anticipated Level 2 and 3 requirements will be transferred to GH in late July 2016.

These service moves may precede completion of the AICU expansion and may put additional pressure on the AICU capacity until the building works are complete. Additional capacity for provision of post-operative Level 2 care is planned in theatre recovery (two more recovery beds with overnight staffing).

The expanded AICU following the building works will comprise of 33 physical bed spaces, of which 10 will be either side rooms or isolation rooms. As with before the expansion, the whole bed base will be used flexibly depending on patient need and to ensure efficient use of the staffing capabilities with no ring fencing of beds for a particular level of care or type of service.

The final configuration of GH will result in provision of Critical Care services to support:

- ▶ Cardio-respiratory medicine
- ▶ Cardiac surgery
- ▶ Thoracic surgery
- ▶ Vascular surgery
- ▶ HPB surgery
- ▶ Acute Nephrology and Renal Transplantation

- ▶ SARF
- ▶ ECMO

Because of the nature of these services, there will be an anticipated increase in elective and emergency admissions to the GH AICU. A booking process to manage elective flow will be introduced to minimise cancellations on the day of surgery.

Once these patients are stepped down to Level 1 care, they will be discharged back to their referring speciality and followed up by the Critical Care outreach team.

2.6.2.3 LGH Current DCCM (Present – July 2016)

The main LGH Critical Care Unit has 12 physical beds of which three are single (isolation) rooms. The remaining nine beds comprise of a five-bedded ICU area and a four-bedded HDU area (although all beds may be used flexibly according to demand for Level 2 and Level 3 care).

The single rooms are used to isolate patients either for infection prevention reasons (both transmission of and/or exposure to infections) or for privacy and dignity reasons (particularly in the case of the dying patient). Once patients are stepped down to Level 1 care, they are referred back to their referring speciality. All patients who are discharged to Level 1 or ward beds are reviewed by the Critical Care outreach team.

2.6.2.4 LGH Interim period (July 2016 to completion of reconfiguration)

This Critical Care Unit is planned to comprise of a six-bedded HDU to manage ongoing demand for Level 2 care for Urology, Obstetrics and Gynaecology, Nephrology, General Surgery and Orthopaedics. It will be located within existing DCCM space. It will be subject to the same philosophy, principles of care and access as a Level 3 Intensive Care Unit. In addition to the six Level 2 beds, there will be one Level 3 bed available for unplanned intensive care patients.

The LGH will be staffed with medical and nursing staff to ensure patients requiring escalation to Level 3 care will receive appropriate treatment immediately. Patients at LGH who unexpectedly require Level 3 care will be admitted here for stabilisation prior to transfer to either LRI or GH when clinically safe.

In order to continue to provide high-quality Level 2 and 3 care, the unit will be staffed by consultant Intensivists during weekday daytimes. It is anticipated that the majority of decision-making, investigations and interventions will take place under the care of the consultant Intensivist. Out-of-hours medical cover will be provided by a rota of consultant Intensivists and consultant general duties anaesthetists (with support from consultant Intensivists and LRI and GH when required). The unit will continue to require its own dedicated resident medical and nursing team (including a nurse in charge).

2.6.2.5 Retrievals and transport

A robust system to transport patients will be introduced as part of the arrangements to support the specialties remaining at the LGH in part or whole until the site is fully released. This transport team will be based at the GH and run in conjunction with the staffing planned for the interim and long term AICU models of care.

Patients at LGH requiring Level 3 support will be stabilised by the attending anaesthetic team (consultant or middle grade level) at LGH who will subsequently contact the Intensive Care Consultant on-call for GH or LRI (depending on the patient's base speciality). The LGH team will remain with the patient, undertaking further stabilisation as dictated by the patient's condition until formal handover to the transport team occurs. The on-call consultants at GH and LRI, in collaboration with the on-call ICU consultant at LGH, will decide whether the patient will be best managed on Adult Intensive Care in GH or LRI.

A transport team will then be dispatched from the GH AICU to retrieve the patient and transfer either to LRI or GH. The lead transport clinician will be an ICU consultant. The transport personnel will be an ICU/anaesthetic registrar or an ECMO/transport fellow accompanied by an ICU nurse – both will be experienced in the transport of the critically ill. The consultants who are on-call for AICU and/or ECMO at GH may be required to provide cover to AICU in GH (enabling the registrar or fellow to undertake the transfer while maintaining safe levels of cover in the ICU).

It will be the responsibility of the on-call consultant at GH (Consultant A) and senior sister/nurse in charge to decide upon the most appropriate clinician and nurse team to undertake the transfer. This will depend upon local resources, timeframes and patient condition at the time of referral. Transfers will be undertaken only when the patients' conditions have been stabilised. If transfer is essential for emergency intervention at GH or LRI and patients are deemed very unstable by the referring team, the most senior experienced transfer clinician will be sent to retrieve.

2.7 UHL Quality Commitments

The Trust is committed to improving the quality and safety of care for all the patients it serves. The quality commitment articulates three key aims:

- ▶ **To provide effective care – to improve patient outcomes**
“To deliver evidence based care/best practice and effective pathways and to improve clinician and patient reported outcomes.”
- ▶ **To improve safety – to reduce harm**
“To reduce avoidable death and injury, to improve patient safety culture and leadership and to reduce the risk of error and adverse incidents.”
- ▶ **Care and Compassion – to improve the patient experience**

“To listen and learn from patient feedback and to improve patient experience of care.”

2.8 Investment objectives, key deliverables and benefits criteria

In the context of the above and the Trust’s corporate objectives, the ‘SMART’ investment objectives for this project are detailed below as part of the wider Benefits Realisation Plan.

- ▶ To move Level 3 activity off the LGH site (continuing to provide the ability to stabilise and transfer where this is required)
- ▶ In delivering the above ICU reliant surgical specialties will be enabled to continue undertaking activity that requires Adult Level 3 ICU input
- ▶ To improve the clinical adjacencies of ICUs and dependent specialties to optimise clinical safety and reduce clinical risk
- ▶ To develop a centre of excellence, enhancing the Trust’s reputation for training, service delivery and treatment through the provision of a more streamlined ICU service
- ▶ To create a design that is fit for purpose
- ▶ To deliver the development in time for anticipated increased clinical demand over winter 2016
- ▶ To deliver the development with minimal disruption to the current provision of service to current ICU areas

3 | The Economic Case

3.1 Introduction

This chapter describes the options for delivering improved Critical Care provision on the GH and LRI sites in terms of their relative benefits and costs. It highlights the preferred option after each shortlisted option has been appraised on a financial and non-financial basis.

3.2 Overall Economic position for Critical Care

This business case supports the reconfiguration of Critical Care services across the Trust's sites. UHL has reviewed its overall position in respect of transferring all services related to LGH Critical Care to the LRI and the GH. It has run a high-level economic appraisal that compares a 'Do Nothing' scenario with respect to the Critical Care facilities at the LGH with a scenario that moves Critical Care beds and associated services from the LGH. (The second scenario includes associated moves between the Trust's other hospitals.) The option appraisal process has evolved as a result of timescales and funding available.

The overarching ICU strategy, including the recent approval of the Vascular and ICU Level 3 business cases, necessitates the reconfiguration of UHL Critical Care services. Given the fact that the Vascular business case has already been approved, the economic appraisal therefore examines the costs including the Vascular move and excluding the Vascular move. (Even if the Vascular moves weren't taking place, this Critical Care move would still be preferred over the 'Do Nothing' option.)

3.2.1 The 'Do Nothing' Scenario

The 'Do Nothing' option is shown to be significantly more expensive than the proposed developments for Critical Care, including and excluding Vascular services. It reflects the loss of Critical Care income at the LGH. (The Trust would clearly make savings in relation to this reduction in activity; it is assumed to be phased over a period of five years. There would also be a decline in inpatient activity as a result of the requirement for some procedures to have a close proximity to a Critical Care bed ceasing. For the purposes of the economic appraisal, the baseline income has been taken as a proxy for the baseline cost. This includes all Critical Care income and a proportion of inpatient income. The eventual savings from the loss of Critical Care activity relate to the direct staff, non-pay and facilities management (FM) costs. The savings on inpatient loss have been assumed at a 30% marginal rate.)

This is demonstrated in the table below.

Table 21 'Do Nothing' Costs

Income Loss Per Annum	£'000
Loss of Income due to Closure of LGH ITU	4,094
Loss of Income due to Closure of LGH ITU (PACU)	814
Loss of Income due to Closure of LGH HDU	2,648
Sub-total	7,556
Loss of Inpatient activity income due to closure of ITU & HDU	6,630
Grand Total Income Loss	14,186
Potential Savings	
Potential medical and nursing staff cost saving	3,496
Non Pay	756
FM and Estates	250
Marginal Cost of Inpatient Services	1,989
Total Savings	6,491
Total Loss	7,695

For the purposes of the economic case, the loss highlighted above has been added to the baseline costs of Critical Care.

3.2.2 Critical Care Costs

Using the same baseline as the 'Do Nothing' scenario, the Trust has reflected the costs and savings from each of the Critical Care and Vascular⁶ business cases, along with lifecycle and capital costs collectively. The aggregate position has been considered – a requirement in the economic appraisal because of is the interdependence between the investments in an economic sense (although this not sufficient for them to be considered as one collective investment in totality). The key figures for each of these are as follows.

Table 22 Critical Care and Vascular Additional Costs

Description	Costs
Capital Costs	£30.381m
Lifecycle Costs	£10.286m over 30 years
Workforce Costs	£2.899m pa FYE non recurrent, £243k per annum recurrent
FM costs	£198 k per year recurrent

⁶ Costs included in the Vascular business case are different to those approved by the Trust Board as a result of reallocating costs between Vascular and Critical Care business cases. These relate in particular to anaesthetic mid-grade and theatre costs, where some additional costs have now been allocated to Critical Care

Other non-pay	£378k per annum
Income	£869k per annum FYE

The costs relating to just the Critical Care business cases are as follows:

Table 23 Critical Care Business Cases – Costs

Description	Costs
Capital Costs	£17.193m
Lifecycle Costs	£2.878 over 30 years
Workforce Costs	£2.045m pa FYE non recurrent
FM costs	£150 k per year recurrent

3.2.3 Results of Overall Economic appraisal

Using the methodology identified above, the net present costs of the ‘Do Nothing’ scenario, the Critical Care move including and excluding Vascular services are as follows:

Table 24 Net Present Cost of Each Option

Option	NPC £'000
Do Nothing	409,795
Critical Care and Vascular moves	321,758
Critical Care Moves only	302,256

The ‘Do Nothing’ option is significantly more expensive than the proposed developments for Critical Care, including and excluding Vascular services.

3.3 Benefits appraisal process

The initial options used to select the site location above were subjected to an options appraisal process based on pre-determined non-financial benefit criteria. The benefit criteria applied within this assessment were as follows:

Table 25 Benefits Criteria

Objectives	Measurement (<i>the degree to which an option is likely to result in...</i>)
A To provide a solution that maximises clinical quality and safety whilst remaining consistent with future configuration	An acute configuration of services that maximises clinical affinities and critical adjacencies minimises clinical risk
B To provide an efficient and effective solution for the immediate ICU requirement	Extra capacity to accept Level 2 and Level 3 activity moving from other sites, enabling

Objectives		Measurement (<i>the degree to which an option is likely to result in...</i>)
		reduction in cancellation
C	To allow staffing pressures to be minimised in delivering the solution	Ease of effective staffing cover
D	To ensure that the quality of the patient environment and experience remains a priority	Enhanced patient experience, safety in terms of infection control and prevention and improvement in the quality of the patient environment; privacy & dignity; single sex areas; single rooms
E	To deliver a solution that is achievable and delivers the required capacity within the timescale of July 2016	Achievement of timescale of conversion works/interdependencies
F	To deliver a solution that ensures accessibility to patients	Clinical adjacencies and an acceptable overall patient journey

The project team met to determine the relative importance of each of these categories. The results of the weighting exercise are shown below.

Table 26 Weighting of Benefits Criteria

	Criterion	Weighting	Points Available	Maximum Weighted Points
A	Clinical Quality and Configuration	5%	10	0.5
B	Efficiency & Effectiveness	5%	5	0.3
C	Staffing	20%	5	1.0
D	Quality of the Patient Environment	10%	15	1.5
E	Achievability	50%	5	2.5
F	Accessibility	10%	15	1.5

As clinical safety and quality is necessarily central to the project's aim, it was agreed that the greatest weightings would be attributed to those factors that maximised achievability of a suitable option in line by the deadline of July 2016.

Each of these key categories contained a number of sub-elements to ensure robust decision-making.

Participants then scored the options against each of the criteria, applying the measurement criteria listed above. Each option was scored as detailed in the following section.

3.4 Options development

The options to provide expanded Critical Care capacity at GH were assessed in terms of the requirement to provide eleven additional bed spaces. (Activity modelling has

shown that this is the minimum number that would be required to deal with variations in activity levels once HPB, Transplant Vascular and Nephrology have moved onto the site.) It was determined that co-location of these additional bed spaces with the existing ICU will be crucial to ensure that they are utilised in the most efficient, effective and safe way possible.

The effects of restrictions around current space on the GH unit as well as the need to retain an efficient and safe configuration are that the only options that can deliver the requisite space for GH ICU by winter 2016 are new build solutions. The site locations assessed are set out below.

Table 27 GH – New Build Options Explored

Option	Description
1. New build option 4A	New build expansion into courtyard adjacent to current Bay
2. New build options B and D	New build areas at several proposed locations around the outskirts of the current ICU department
3. New Build option 4C	New Build area that allows the direct expansion of Bay B and increases size of existing unit

These locations were subject to a qualitative options appraisal as set out below.

Table 28 Options Scores – Potential GH ICU Locations

Criteria/ Scores	New Build		
	1	2	3
Clinical Quality and Configuration	9	9	9
Efficiency and Effectiveness	4	3	5
Staffing	4	3	5
Quality of the Patient Environment	11	11	15
Achievability	3	3	3
Accessibility	14	13	15
OVERALL SCORES	45	42	52
RANK	2	3	1

Table 29 Options Scores – Weighted: Potential GH ICU Locations

Criteria/ Weighted Scores	New Build		
	1	2	3
Clinical Quality and Configuration	0.5	0.5	0.5
Efficiency and Effectiveness	0.2	0.2	0.3
Staffing	0.8	0.6	1.0
Quality of the Patient Environment	1.1	1.1	1.5
Achievability	1.5	1.5	1.5
Accessibility	1.4	1.3	1.5
OVERALL SCORES	5.45	5.1	6.2
RANK	2	3	1

The results of the economic analysis are as follows:

Table 30 Options Appraisal: Non-financial and Financial Scores

Option	Non-Financial Scores £'000	Financial Scores	Cost per Benefit Point £'000
Option 1 4A	476,250	5.45	87,385
Option 2 4B&D	470,151	5.10	92,186
Option 3 4C	468,662	6.25	74,986

This is largely driven by:

- ▶ Factors around the required area (which precluded consideration of Option 1 within existing courtyard space)
- ▶ Consideration of the patient environment and ease of staffing cover (all options except for Option 3 saw either a reduction in natural light entering the unit or produced a build which would be awkward to staff given the sight lines involved)

Only one option generated provided a suitable environment as well as the number of beds required.

The clear preference demonstrated by the qualitative and quantitative options appraisal is for:

- ▶ **New build area that allows the direct expansion of Ward 34 Bay B and increases the size of the existing unit.**

3.5 Financial & Economic appraisal

The options were then subjected to a financial appraisal. The options were considered over a period of 30 years. The financial appraisal reflects the following:

- ▶ Capital costs excluding VAT for each option on each site including equipment
- ▶ Lifecycle costs
- ▶ Revenue workforce costs for each site

3.5.1 Capital Costs

Capital costs for each option are shown below.

Table 31 Capital Costs

	Option 4A £	4B and D £	Option 4C £
Departmental Costs	1,434,000	2,737,200	3,255,595
Equipment	272,000	272,000	272,000
Fees	405,358	622,558	708,957
Planning Contingency	209,364	399,631	475,680
Total	2,320,722	4,031,389	4,712,232

3.5.2 Lifecycle Costs

Lifecycle costs are derived from the capital costs reflecting replacement of individual elements of the capital scheme.

3.5.3 Revenue Costs

The assessed baseline of Critical Care expenditure across the Trust has been used in developing the revenue costs. This is broken down as follows:

Table 32 Baseline Revenue Costs

	£'000
Direct Costs	16,720
Indirect and Non-pay costs	3,943
Overheads	3,099
Total recurrent annual cost of Critical Care	23,762

3.5.4 Changes in revenue costs

The following changes in costs have been assessed as being necessary to deliver the scheme.

Table 33 Changes in Revenue Costs

	WTE	16/17 £'000	17/18 £'000
Middle grades	0.80	57	86
Consultants	1.00	78	117
Transport Team	2.00	93	140
Nurses	4.00	124	148
Total Staff costs	7.80	353	491
FM Costs for new GH Facility		75	150
Total Revenue Costs		428	641

The middle grades position reflects two additional rotas at GH. Offsetting this is the saving of 15 WTE middle grades on the LGH site. Additional middle grades will be needed to support the isolated unit on the LRI site. The net increase is offset by that already allowed in the Vascular business case.

Table 34 Breakdown of Middle Grade Costs

	WTE	16/17 £'000	17/18 £'000
Additional Middle Grades	15.2	710	1064
Additional ANNP	4.00	197	296
Less savings from rota on LGH site	(15.00)	(700)	(1,050)
Less share of anaesthetic middle grade allocated to Vascular	(3.20)	(149)	(224)
Total	1.00	57	86

There is a requirement for 10 additional consultant PAs resulting from the inefficiency of overseeing a smaller unit at the LGH and to support the retrieval service that needs to be enhanced to cover the additional transfers from the LGH to the Glenfield and LRI ITUs. In addition to the additional PAs there is a need for two Clinical fellows to support the retrieval service.

As a result of the overall reconfiguration of ICU there is requirement for additional critical care nursing to support the isolated HDU particularly at the LRI. Although the HDU staffing has been assumed to be 1 staff to 2 beds, allowance has been made for additional staff to cover any absences from the ward as a result of patient movements.

The additional space required will increase the need for FM costs. A provisional sum of £150,000 has been allowed for.

The revenue costs for each option are assumed to be the same. However on Option A it has been assumed that there will be a loss of income as a result of not having enough capacity to manage the current level of demand or critical care beds. This relates to 40 bed days per year. A saving in relation to this has also been assumed.

3.5.5 Results of economic appraisal

The result of the economic appraisal is as follows.

Table 35 Economic Appraisal Summary

Option	NPC £'000	Rank
Option 1 (A)	476,255	1
Option 2 (D1)	479,529	3
Option 3 (D2)	478,040	2

From a financial perspective Option 1 is better than Option 2. However the margin is small (0.4%) Options D1 and D2 deliver additional capacity, for which no additional

income and costs have been allowed for in this analysis. Option A does assume the loss of 40 days of activity per annum as a result of the reduced capacity. If additional income and costs related to the additional capacity were assumed (at 50% occupancy) the position would change to the following:

Table 36 Economic Appraisal Sensitivity use of spare capacity

	NPC £'000	Rank
Option 1 A	476,250	3
Option 2 D1	470,151	2
Option 3 D2	468,662	1

With this sensitivity Option D2 becomes the preferred financial option.

The financial and non-financial scores were combined on a cost-per-benefit point basis. The results of this are as follows.

Table 37 Cost benefit analysis

Cost per benefit score	NPC £'000	Benefit Score	Cost per benefit Score £'000	Rank
Option 1	476,250	5.45	87,385	2
Option 2	470,151	5.10	92,186	3
Option 3	468,662	6.25	74,986	1

Cost-benefit analysis shows that by combining the financial and non-financial scores, Option 3 is the preferred option. Although the financial score is slightly worse, the non-financial scores are significantly better. If allowance is made for additional income is made then Option 3 is the best financially.

3.6 Preferred option

As a result of combining the financial and non-financial option appraisals Option 3 is significantly better than the other 2 options. Using sensitivities reflecting Option 3's higher capacity would also make Option 3 the preferred option from a financial perspective.

4 | The Commercial Case

4.1 Introduction

This section of the FBC outlines the proposed procurement strategy in relation to the preferred option outlined in the Economic Case.

4.2 Procurement Strategy

Given the large differences between design solutions at each site, different procurement strategies will be pursued to ensure efficiency and value for money.

LRI: The ICU build area is adjacent to the new Theatre Recovery Project construction site, and the work is inextricably linked to the ICU redevelopment programme. Consequently the Trust will aim to extend the existing NEC construction contract for the Theatre project under a compensation event with Interserve Construction.

Under the bespoke framework, Interserve Construction has been appointed. Interserve are currently undertaking work on the theatre complex and this additional work has been treated as a compensation event as part of contract

GH: The individual work packages associated with this scheme are relatively minor in content. These will be procured within the requirements of standing financial institutions.

4.3 Risk

All projects are subject to risk and uncertainty. Successful project management should ensure that major foreseeable risks are identified, their effects considered and actions taken to remove, or mitigate the risks concerned.

Risks will be classified as:

- ▶ Client – these will be the responsibility of the Project Board to manage and monitor
- ▶ Contractor – a project specific risk register will be set up for the Project. These will be the responsibility of the Contractor to monitor and will form part of the GMP

The qualification of the costs of identified risks will enable the calculation of a realistic client contingency.

A pro-active risk management regime will be employed throughout the project. It is essential on any project that the risk management process involves all key members of the project team.

The following risks have been identified for this project:

Table 38 Identified Project Risks

Risk description	Likelihood (1-5)	Impact (1-5)	RAG	Risk mitigation	RAG post mitigation	Risk Owner
Beds:- Capacity constraints within system to enable moves (including failure of Left shift to deliver bed space required) could require a costly solution to create capacity or risk increased operational pressure	4	5	20 Red	Requirement for beds at LRI is dependent upon preceding ward moves but not out of hospital shift. At present Wards 28 and 29 are being planned to be vacated at GH site. A backup plan is being formulated to ensure that these beds are free by March 2016. Impact of plans to close GH theatre capacity gap is being worked through operationally with service leads	Amber	ICU Board / Trust Exec
Tight nature of timescale means that any delays risk the project exceeding the deadline of July 2016. This will have a negative reputational impact on the Trust.	4	5	20 Red	Risks to timely delivery are escalated through ICU board and safe operational resolutions found as rapidly as possible	Amber	CA/JJ
Theatres:- Capacity risk for theatres around delivery of Glenfield between July 2016 and December 2016 (when the hybrid theatre comes online) could mean a reduction in flow and cancellations if not managed properly	3	5	15 Red	14 of 14 required sessions have been identified. However more work is required to understand impact on support services and HDU	Amber	ICU Board / Trust Exec
Ability to staff vacancies and recruit/retain staff where split site coverage is required may make delivery of services more difficult	3	5	15 Red	There will be a need to go out to recruit to vacancies rapidly. This will be addressed through Workforce determining a critical path for recruitment and progressing high risk areas first	Amber	ICU Board / Specialties concerned
Required staffing is costed at substantive rate. If there is an inability to recruit to vacancies then premium pay spend may be incurred above the originally agreed budget	3	5	15 Red	Early engagement of workforce team to build a clear workforce recruitment plan will be required to identify and target likely risk areas rapidly.	Amber	ICU Board / Specialties concerned

Risk description	Likelihood (1-5)	Impact (1-5)	RAG	Risk mitigation	RAG post mitigation	Risk Owner
Any additional increases in revenue costs, as a result of issues as yet undetected, may make the project unaffordable	3	5	15 Red	Rigorous application of the Trust Change control process will be required for any future alterations.	Amber	ICU Board
In the absence of a formal agreement the Trust will need to establish how the capital programme will be managed in order to keep the works to programme and achieve the tight delivery framework.	3	5	15 Red	This is managed through the capital monitoring & delivery group and ongoing discussions with the TDA. Failing this internal capital will be required to be re-prioritised to fund the ICU project.	Amber	ICU Board
Increased bed pressures on the 2 busiest sites.	2	5	10 Amber	Detailed modelling to identify likely capacity needed at both sites. LRI and GGH work stream to agree co-location possibilities. Movement off LRI and GGH site of all specialities not needing to be on these sites. Consider ring-fencing of surgical beds	Amber	CA/JJ
Further delay in ICU reconfiguration process meaning that the project is subsumed into BCT consultation	2	5	10 Amber	Any remaining issues to be escalated for decision by the trust as soon as practically possible. Clear communication required with HealthWatch throughout	Amber	ICU Board
On call staff could be up all night, very few lists dropped at present the next day. Need to ensure work done in the daytime is efficient	2	4	8 Amber	Impact to be assessed and managed throughout implementation and any actions that can be taken in advance to sensibly negate this risk will be applied	Amber	ICU Board
It has been assumed that conversion of existing Trust-owned space for capital works will see any increase in residual asset value offset by a corresponding impairment. If this is not the case then capital charges will be higher than assumed within this business case	2	4	8 Amber	Early involvement of valuers will be required to ensure that UHL's case for impairment is understood and that any subsequent risk can be identified early in the process	Amber	ICU Board

5 | The Financial Case

5.1 Introduction

The Financial Case examines the affordability of the preferred options and sets out the financial implications for the Trust in terms of capital expenditure and cash flow, income and expenditure account and borrowing. The purpose of this section is to set out the forecast financial implications of the preferred options as set out in the Economic Case and the proposed deal (as described in the Commercial Case).

The Trust was formed in April 2000 and has achieved its financial targets for the first 12 years of its existence. The UHL financial results for 2011/12 and 2012/13 show that the Trust made a surplus of £88k and £91k respectively. However 2013/14 was a challenging year, both operationally and financially, and the Trust reported a deficit for the first time since the organisation was formed in 2000. In 2014/15 there was a £40.6 million deficit against a plan of £40.7 million.

UHL provides hospital and community based healthcare services to patients across Leicester, Leicestershire and Rutland and specialist services to patients throughout the UK. As such, the Trust's main sources of income are derived from Clinical Commissioning Groups, NHS England, and education and training levies. UHL is actively engaged with key stakeholders to implement NHS policy to improve health services in the local area through a range of formal and informal partnerships.

Financial review for the year ended 31 March 2015

UHL did not meet all of its financial and performance duties for 2014/15 as it failed to break even. This was in line with the Trust's plans. In respect of our duties:

- **Balancing the books** – delivery of an income and expenditure deficit of £40.6m.
- **Managing cash** – we delivered both the External Financing Limit (EFL) and Capital Resource Limit (CRL)
- **Investment in buildings, equipment and technology** – UHL invested £46.2 million in capital developments.

The financial position of this business case shows an additional cost of c£850,000 per annum. This is shown in the following table.

Table 39 Financial Position of this Investment Business Case

	2016/17 £'000	2017/18 £'000	2018/19 £'000
Operating Costs			
Middle grades	57	86	86
Consultants	78	117	117
Transport Team	93	140	140
Nurses	124	148	148
Facilities Management Costs	100	150	150
Total Operating Costs	452	641	641
Capital Charges			
Interest	77	112	107
Return on Assets	(13)	(25)	(25)
Depreciation	89	179	179
Total Capital Charges	153	265	261
Total Impact on I&E	605	856	852

Non-operating costs have been allowed for in the Trust's Long-Term Financial Model (LTFM), leaving the additional operating costs of circa £452,000 in 2016/17 and £641,000 in 2017/18 and 2018/19 outside the LTFM. If the Trust is to maintain the deficit reduction trajectory in the Financial Strategy, the operating cost revenue impact of this development is only affordable if the development is funded by the £4m per annum allowance made in the Financial Strategy for annual operating cost pressures. This approach has been supported by the Trust Board.

5.2 Capital Costs

The capital costs of the preferred option total £4,712,232. A summary table of the total costs can be found below.

Table 40 Summary of Capital Costs

Capital Costs	Option 4C
	£
Departmental Costs	3,255,595
Equipment	272,000
Fees	708,957
Planning Contingency	475,680

Total	4,712,232
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5.2.1 Financing

The Trust has assumed the scheme will be funded through Interim Capital Support Loan (ICSL) in line with DH guidance. (This assumption would not be the Trust's preferred option but guidance dictates that ICSL must be considered as the primary funding source in a business case.) The Trust requires funding in 2015/16 & 2016/17.

5.3 Income and Expenditure

5.3.1 Summary

The projected impact on the Trust's income and expenditure (I&E) position is summarised in the table below.

Table 41 Income & Expenditure Changes

	2016/17 £'000	2017/18 £'000	2018/19 £'000
Operating Costs			
Middle grades	57	86	86
Consultants	78	117	117
Transport Team	93	140	140
Nurses	124	148	148
Facilities Management Costs	100	150	150
Total Operating Costs	452	641	641
Capital Charges			
Interest	77	112	107
Return on Assets	(13)	(25)	(25)
Depreciation	89	179	179
Total Capital Charges	153	265	261
Total Impact on I&E	605	856	852

It has been assumed that dual running costs will be set to a minimum as a result of closing beds on one site simultaneously as opening them on the other sites. A detailed transition plan will identify the operational requirements for minimising patients being transported without increasing revenue costs.

5.3.2 Methodology

The additional costs have been based on the proposed service reconfigurations reflecting restructure services and rotas. The workforce costs have all been through confirm and challenge process and they have been identified as legitimate increases in

costs as a result of the reconfiguration. All these costs are deemed to be transitional costs incurred until the Trust consolidates on to two sites. The costs reflect nurse staffing at mid-point with appropriate on costs and enhancements. Middle grades have been assumed to have an average cost of £70,000 per annum.

A key assumption is that the Trust is able to recruit staff. If there is any difficulty in recruiting and there is a requirement for recruiting at premium rates. Then there would be an additional cost pressure. Currently the full year effect of the business case in workforce terms is £491,000, a 50% premium cost in relation to failure to recruit would be as much as £246,000 per annum.

No additional income has been assumed as a result of increasing critical care capacity. However a sensitivity has been run on the economics reflecting additional income.

5.3.3 Workforce

The capital investment will provide a sustainable physical solution for the location of ICU beds at the Glenfield and LRI. The workforce costs relate to additional midgrade and consultant costs required at the Glenfield and the LRI. They also support an enhanced retrieval service to move any patient needing ICU support at the LGH.

The following changes in costs have been assessed as being necessary to deliver the scheme.

Table 42 Workforce Costs

	WTE	16/17 £'000	17/18 £'000	18/19 £'000
Middle grades	1.00	57	86	86
Consultants	1.00	78	117	117
Transport Team	2.00	93	140	140
Nurses	4.00	124	148	148
Total Staff Costs	8.00	352	491	491
FM Costs for new GH facility		100	150	150
Total Operational Revenue Costs		452	641	641

The middle grades position reflects two additional rotas at the GH. Offsetting this is the savings of 15.00 WTE at LGH. It also reflects some of the funding coming from the Vascular ward business case.

Table 43 Middle Grades Position

	WTE	16/17 (£'000)	17/18 (£'000)	18/19 (£'000)
Additional Middle grades at GGH	15.20	709	1,064	1,064
Additional CTs/ ANNPs at LRI	4.00	197	296	296
Savings from the LGH site	(15.00)	(700)	(1,050)	(1,050)
Less Vascular allocation	(3.20)	(149)	(224)	(224)
Total	1.00	57	86	86

There is a requirement for 10 additional consultant PAs resulting from the inefficiency of overseeing a smaller unit at the LGH and to support the retrieval service that needs to be enhanced to cover the additional transfers from the LGH to the Glenfield and LRI ITUs. In addition to the additional PAs there is a need for two Clinical fellows to support the retrieval service.

From a medical perspective anaesthetics have run successful recruitment campaigns internationally and these links will be used to recruit to the additional vacancies for trainees.

As a result of the overall reconfiguration of ICU there is requirement for additional Critical Care nursing to support the isolated HDU particularly at the LRI. Although the HDU staffing has been assumed to be 1 staff to 2 beds, allowance has been made for additional staff to cover any absences from the ward as a result of patient movements.

In addition to this, the isolated nature of the ICU beds means that there will need to be a float of an additional member of staff to ensure there is cover at all times. From April, this cost has been identified in the Vascular business case; however the cost will be incurred from January 2016 when the new unit becomes available. This cost will be £37,000 in 2015/16. This additional cost may be mitigated if cardiac beds destined to be transferred to ward 32 can remain on ward 34 until April. This may also reduce the additional cardiac cost.

5.3.3 Capital Related Revenue Costs

The other major cost element is the capital costs. The capital itself has been assumed to be funded through Interim Capital Support Loan (ICSL). The revenue consequences represent the interest on the loan provided and depreciation. However as the majority of the capital cost is based on a refurbished asset, it is unlikely to materially add to value, meaning that depreciation is low. Maintenance costs for ventilators are assumed to be allowed for in current budgets as the additional amount of equipment in the Trust does not increase.

The table below shows the basis of the capital charges calculation.

Table 44 Capital Charge Impact of Scheme (ICSL)

Critical Care Capital Charges	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000
-------------------------------	---------------	---------------	---------------	---------------

Opening Balance		1,571	4,649	4,456
Drawdown	1,571	3,141		
Loan Repayments		(63)	(194)	(194)
Closing loan	1,571	4,649	4,456	4,262
Interest on loan (1 July 2015 rate 2.46%)	19	77	112	107
Return on Asset	0	(13)	(25)	(25)
Depreciation		89	179	179
Total Capital Charges and interest	19	153	265	261

The Trust has modelled the use of Public Dividend Capital (PDC) to fund the development rather than IBD. The position using PDC is as follows:

Table 45 Capital Charge Impact of Scheme (PDC)

ICU Capital Charges PDC	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000
Return on Asset	27	96	134	128
Depreciation		89	179	179
Total Capital Charges (PDC)	27	185	313	306

This analysis assumes an impairment of £698,000 relating to the fees spent on the development.

Although the Trust would earn a high rate of return if the scheme were funded through PDC, the Trust would also need to pay back the loan required to fund the scheme. It is assumed that £194,000 per annum loan repayment would be made from late 2016/17. Therefore the impact on I&E is compounded by an even more significant impact on the Trust's cash flow of £194,000 per annum. With everything else being equal, this would reduce the amount of operational capital available to the Trust by this amount.

5.4 Impact on Trust Income, Cash Flow & Balance Sheet

The table below sets out the impact on the Trust's balance sheet.

Table 46 Impact on the Trust's Balance Sheet

	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000
Opening Balance		1,571	3,914	3,735
Capital Expenditure	1,571	3,141		
Impairment		(709)		
Depreciation		(89)	(179)	(179)

Closing Balance	1,571	3,914	3,735	3,556
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5.5 Affordability

The scheme identifies increases in recurrent revenue costs aside from capital charges and interest payments on the loan funding. All the workforce costs identified are viewed to be non-recurrent and will not be incurred after the Trust consolidates its acute services on to two sites.

The Trust Financial Strategy, approved by the Trust Board on 4th June 2015, assumes that the operating cost impact of site reconfiguration will be zero and the non-operating costs impact will be as per the capital programme.

Therefore, if the Trust is to maintain the deficit reduction trajectory in the Financial Strategy the operating cost revenue impact of this development is only affordable if either:

- ▶ CIP targets are increased to offset these costs; or
- ▶ Transitional income is secured to offset these costs; or
- ▶ The development is funded by the £4m per annum allowance made in the Financial Strategy for annual operating cost pressures.

5.5.1 Long Term Financial Model (LTFM)

The current five year LTFM which reflects the detail of the Financial Strategy approved by the Trust Board on the 4th June 2015 is constructed in a way which aggregates this development as part of the general site rationalisation service development. The assumptions regarding this service development include the premise that the operating costs impact of the developments will be zero.

As shown above, the case identifies additional operating costs of circa £452k in 2016/17 and £641k in 2017/18 and 2018/19. The revenue costs will need to be managed as described above and potentially reduced as a result of further investigation.

5.5.2 Capital Affordability

The scheme is included in the reconfiguration programme's capital cost allowance. Due to the urgency of the scheme the funding of this will be reviewed in terms of budget allocations for critical care and beds at the LRI and Glenfield. This review will take place in November 2015.

6 | The Management Case

6.1 Introduction

The Management Case provides a summary of the arrangements which have been put into place for the successful delivery of the GH Imaging Programme; the associated other service relocations required as a result of decanting moves; service operation changes; and to secure the benefits sought through the investment.

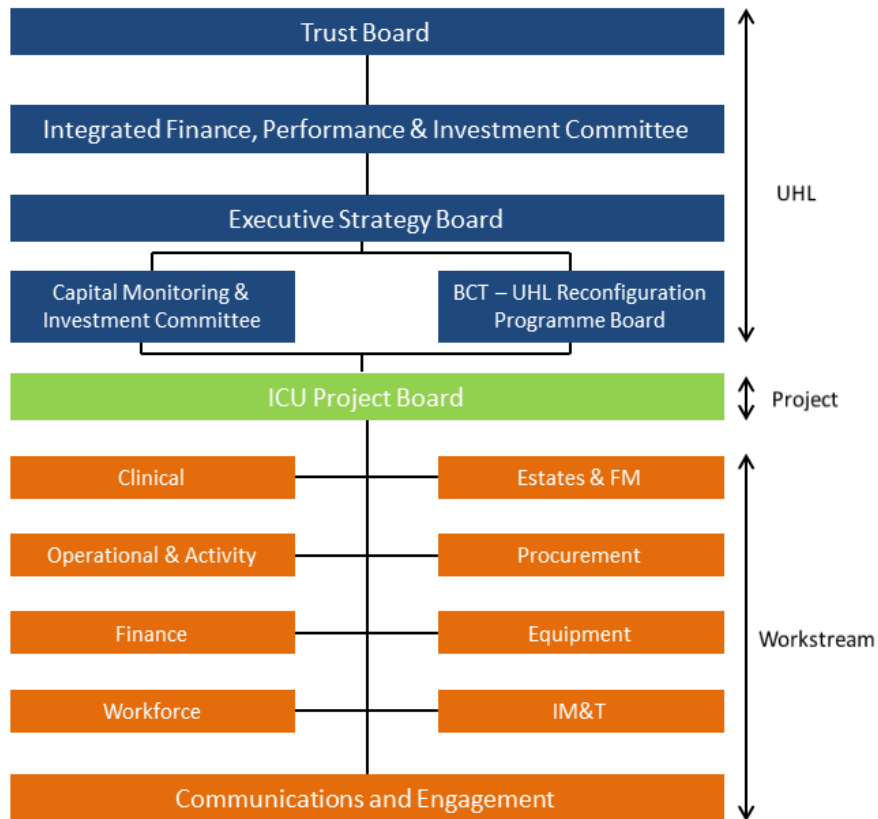
The project will be managed using PRINCE2 compliant methodology and project management tools such as Gantt charting and critical path analysis.

Project direction and management will be determined by the Project Board.

6.2 Project Governance Arrangements

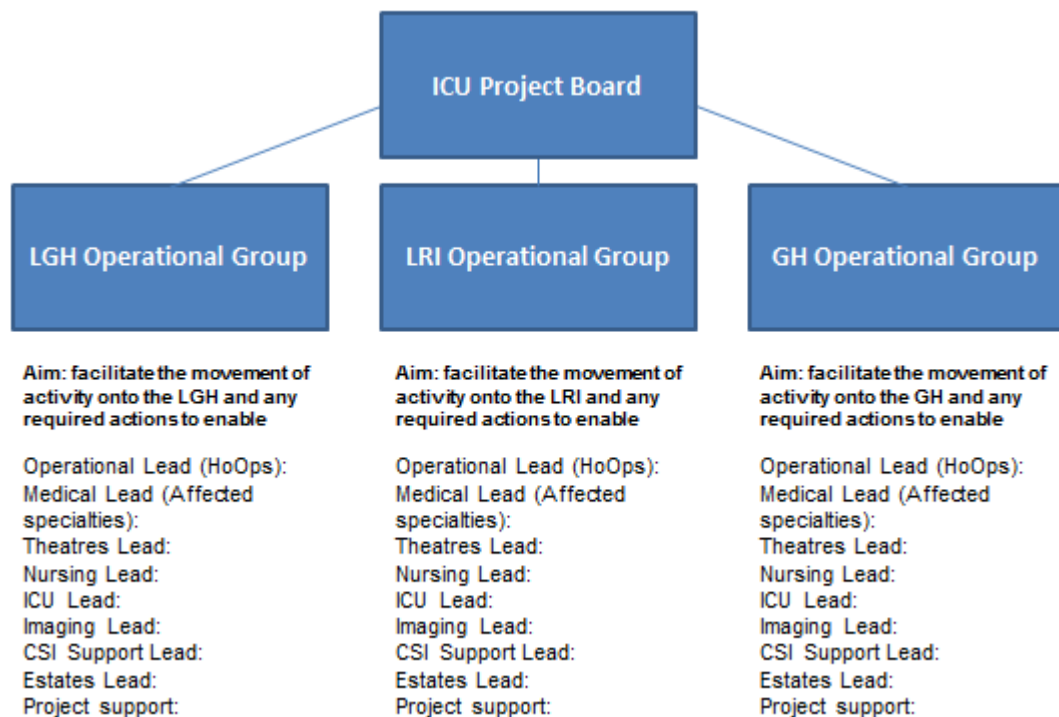
Project Governance arrangements have been established to reflect national best practice guidance and the Trust's own Capital Governance Framework, as shown in the diagram below.

Figure 5 Project Governance Arrangements – Project Structure



This structure was used during the strategic planning phase of this investment business case and has ensured that all decisions have been made with appropriate due diligence and rigour. To enable operational delivery it has been changed to the site-based governance arrangements in the figure below.

Figure 6 Project Governance Arrangements: Site-based Delivery Structure



6.2.1 Project Roles and Responsibilities

The ICU Project Board

The project reports to the ICU Project Board. Key roles and responsibilities include:

- ▶ Responsibility for delivering the project within the parameters set within the business case
- ▶ Providing high level direction on stakeholder involvement and monitoring project level management of stakeholders
- ▶ Providing the strategic direction for the project
- ▶ Ensure continuing commitment of stakeholder support
- ▶ Key stage decisions
- ▶ Progress monitoring

The key project roles and responsibilities are outlined below.

Table 47 Project Board

Role	Name	Responsibilities
Senior Responsible Officer	Kate Shields, Director of Strategy	Responsibility to the Executive Trust Board for delivery of the project to meet their terms of reference. Chair of the Project Board.
Project Manager	Chris Green	Day to day responsibility for administration of the development of the project, within the delegated role permitted by Project Board.
Project Clinical Leads	Chris Allsager/John Jameson	Overall clinical responsibility for models produced and structures determined suitable for inclusion within relevant business cases. Also responsible for offering clinical challenge to models put forward.
Clinical Leads	Rakesh Vaja / Jacqui Redfern	Responsibility for ensuring that design process reflects needs and requirements of ICU within this business case and reflecting these into the Clinical Models Group
Estates Lead – ICU Expansion GH	Leigh Gates	Responsible for delivering design solution upon receipt of suitable project brief and offering Estates expertise to the project. Responsible for reporting to the project board and delivery of the build stage
Finance Lead	Tim Pearce	Responsible for translating plans into cost and benefits and maintaining financial challenge around assumptions. Responsible for reporting to the project board.
Workforce Lead	Louise Gallagher	Responsible for challenging workforce plans and assumptions and providing strategic workforce context. Responsible for reporting to the project board.

Regular progress reports are also submitted to the UHL Reconfiguration Board for review and then onward reporting and management to the Executive Strategy

The project will move rapidly towards the creation of a mobilisation team or teams. This will be constructed of suitable management and clinical representatives to allow the production of detailed implementation plan to operationally deliver the ICU Level 3 project. The team/s will operate within the existing governance of the project.

The end stage of the project will result in the completion, handover and commissioning of the new facilities. The Project Board is responsible for providing assurance that the project has been delivered in terms of product and quality in line with the business cases.

UHL Reconfiguration Board

This group is a designated committee appointed by the Trust Board, with responsibilities which in summary, include:

- ▶ Keeping overall responsibility for reconfiguration activities within the Trust

- ▶ Ensuring that developments are consistent with the Trust's strategic direction and BCT plans

The Executive Strategy Board (ESB)

This group is a designated committee appointed by the Trust Board, with responsibilities which in summary, include:

- ▶ To advise the Trust Board on formulating strategy for the organisation;
- ▶ To ensure accountability by holding each other to account for the delivery of the strategy and through seeking assurance that all systems of control are robust and reliable
- ▶ To lead the Trust executively, in accordance with our shared values, to deliver our vision and, in doing so, help shape a positive culture for the organisation

Integrated Finance, Performance and Investment Committee (IFPIC) and Capital Monitoring & Investment Committee (CMIC)

These groups are designated committees appointed by the Trust Board, with responsibilities which in summary, include:

- ▶ Ensure that strong financial governance and control is adhered to in business case preparation
- ▶ To ensure that capital and revenue implications of all business cases are fully understood
- ▶ To ensure that business cases represent best value for the Trust

6.2.2 Work Streams

A number of work streams have been set up to take responsibility for driving the key objectives and to report back to the Project Board on a regular basis.

Key roles and responsibilities will include:

- ▶ Day to day responsibility for the delivery of the project to meet the parameters described within the business case
- ▶ Provision of appropriate reports on status to the Project Manager
- ▶ Management of risks and issues and escalation of appropriate matters for executive direction/ approval
- ▶ Providing working groups with detailed briefs
- ▶ Monitoring, co-ordinating and controlling the work of the Working Groups
- ▶ Drawing together the outputs of the Working Groups
- ▶ Ensure continuing commitment of stakeholders, both internal and external

6.3 Project Plan

The project will be managed in accordance with the principles of PRINCE2 methodology. The project manager will have support from the capital projects team, and external consultants.

6.3.1 Project Programme

The Project Programme is intended to deliver the project by December 2015. The milestones for the whole ICU redevelopment programme are set out below:

Table 48 Project Programme

	Description	Activity/ Milestone	Start date	End date
Retrievals Pathway	Share retrievals policy with all interested specialties and answer queries raised	Activity	19-Oct-15	31-Oct-15
Creation of site based implementation groups		Milestone	26-Oct-15	26-Oct-15
Fortnightly Meeting of Implementation Groups and ICU Programme Board		Activity	26-Oct-15	30-Jul-16
Retrievals Pathway	Confirmation of final model and requirements with EMAS	Activity	01-Nov-15	30-Nov-15
Re-Engage with OSC		Activity	01-Nov-15	31-Nov-15
ICU Spaces	Ward 34 handed over to Estates (GH)	Milestone	09-Nov-15	09-Nov-15
ICU Spaces	Conversion of Ward 34 to allow Bay B GH ICU activity to transfer	Activity	09-Nov-15	01-Jan-16
Business Case signed off at ESB		Milestone	17-Nov-15	10-Nov-15
Business Case signed off at CMIC		Milestone	20-Nov-15	13-Nov-15
Business Case signed off at IFPIC		Milestone	26-Nov-15	26-Nov-15
Retrievals Pathway	Specific Recruitment and Training	Activity	01-Dec-15	31-May-15
Identify staff in scope for MoC		Activity	01-Dec-15	31-Dec-15
Business Case signed off at Trust Board		Milestone	03-Dec-15	03-Dec-15
Mobilisation start (in line with FBC approval)		Milestone	mid-Dec 15	mid-Dec 15
LIA events at CMG/Specialty Level		Activity	01-Jan-16	31-Jan-16
Construction start		Milestone	04-Jan-16	04-Jan-16
ICU Spaces	Estates knock through wall of Bay B and transfer ICU beds into Ward 34	Milestone	04-Jan-16	04-Jan-16
ICU Spaces	Construction of Medium term ICU expansion	Activity	04-Jan-16	30-Sep-16
Draft MoC paper and undertake pre-consultation with staffside		Activity	01-Feb-16	28-Feb-16
Retrievals Pathway	New models fully operational	Milestone	01-Jul-16	01-Jul-16
ICU Spaces	Medium term ICU opens	Milestone	30-Sep-16	30-Sep-16

6.4 Stakeholder Engagement

Methods of communicating information about the project to various stakeholders are listed below. See Appendix 4 'Communications Strategy and Action Plan' for more information.

6.4.1 Internal

- ▶ Face to face briefings: used as the primary source of communication with staff
- ▶ INsite pages
- ▶ Display boards/ Hoardings around building work
- ▶ Hospital Hopper: Information can be displayed aboard and on the exterior of the Hospital Hopper buses, which travel between the three UHL hospital sites
- ▶ Factsheet-style newsletter
- ▶ Blueprint & Chief Executive's Briefings: Utilise Blueprint reconfiguration newsletter for staff (bi-monthly) to update staff on progress

6.4.2 External

- ▶ Social media: Utilising the Trust's Twitter and Facebook accounts
- ▶ Website: A section on the EMCHC project can be included on the UHL website, with a link from the homepage
- ▶ Local media
- ▶ Leicester Mercury Patient Panel: Panel made up of members of the public who provide comment on local issues
- ▶ Annual public meeting (September): Use this as an opportunity to share what has been accomplished and what is planned next
- ▶ Patient information leaflet

The over-arching ICU project has seen a wide variety of engagement from across the Trust and also further reaching communications activities:

- ▶ Involvement of key service leads from all affected areas through planning
- ▶ Representation of HealthWatch patient representative on ICU Board
- ▶ Communication with OSC at key points within the project
- ▶ Site-based communication events

The undertaking of this wide-ranging set of engagement activities has been crucial in ensuring that clinical staff have been heavily involved in planning, which is essential in such a complex project. The input of patient representatives has also ensured that decisions taken have remained centred around the best interest of patients.

6.4.3 Infection Prevention, Health & Safety, Fire and Privacy & Dignity

Representatives from UHL's Infection Prevention (IP) team have been fully engaged throughout the design development. IP representatives have provided guidance on all relevant aspects of the design.

Representatives from UHL's Health and Safety team are being thoroughly consulted on the project and design solution. The size and layout of rooms throughout were reviewed in specific detail to ensure compliance for patient and staff safety.

Infection Prevention, Health & Safety, Fire Officer and Privacy & Dignity teams will sign-off the detailed design and fully support the business case.

6.5 Outline arrangements for change and contract management

Change management associated with the project will be managed through Project Board, under the chairmanship of the Senior Responsible Owner (SRO). Day to day change management issues will be discussed at the Project Team level and any resultant contract and/or cost changes will need to be approved by the Project Board.

The Trust has introduced a new Change Management process to promote consistency and deter changes outside of the governance structure of each project. This will impact upon all business cases where there is a need to:

- ▶ Change assumptions in an approved business case
- ▶ Change costs impacting the capital plan
- ▶ Change the reconfiguration delivery programme
- ▶ Change scope which impacts upon another project

This process will require any changes detailed above to be authorised by the Project Board, Business Case team meeting and then the Reconfiguration Board.

6.6 Outline Arrangements for Benefits Realisation

The delivery of benefits will be managed through the Project Board. The Benefits Realisation Plan sets out who is responsible for the delivery of specific benefits, when they will be delivered, and how achievement of them will be measured. The key opportunity is presented by the new design for facilities, which will ensure capacity meeting demand, efficiencies in service delivery, compliance to standards and minimised disruption to overall Trust operations.

Work will be undertaken to identify and track any benefits that may arise from the LGH (in terms of reduced FM costs or efficiency benefits realised through a change in usage

on the site). This will also be required on the GH and LRI sites where revised staffing models may offer initially originally unintended benefits.

6.7 Contingency Plans

The Trust has a framework for Business/Service Continuity. The Trust's framework ensures the Trust can comply with the business continuity provisions of the Civil Contingencies Act 2004. Contingency plans have been developed to ensure the Trust can continue to deliver an acceptable level of service of its critical activities in the event of any disruption.

In terms of financial contingency, the Financial Case highlights the planning contingency, including fees and equipment, for short-listed options.

6.8 Conclusion

This business case sets out the immediate clinical need to reconfigure Adult Level 3 Critical Care provision on the GH site to allow the transfer of activity from the LGH in line with the required July 2016 deadline. It will also support delivery of a number of identified benefits, including to:

- ▶ Allow the re-location of Adult Level Three Critical Care from LGH by July 2016
- ▶ Creation of a more centralised and consolidated acute unit that offers staff the required experience for training and improves the ICU department's ability to recruit staff as a result

Secondary benefits also exist which, although not the primary focus of this project will support both longer term Trust and ICU strategy. These benefits will be to;

- ▶ Improve patient care
- ▶ Meet and aim to exceed national, regional and local policy objectives and standards
- ▶ Improve the Trust's environment and sustainability
- ▶ Provide equality of access, the necessary links and adjacencies, co-locations with other departments; manage flows into and out of departments (and achieve separation of clinical, public and FM flows)
- ▶ Provide flexibility of use to meet patient dependency (right patient, right place, right time) in a configuration that is capable of meeting changing demands in service
- ▶ Provide a long-term solution with future expansion/adaptability to change
- ▶ Provide a good strategic fit with the Trust's goals currently and in the future
- ▶ Provide a good strategic fit with planning for other departments and the Trust-wide reconfiguration programme

- ▶ Provide a practical physical and service-oriented solution with appropriate timescales for implementation including phasing, decants and incremental strategies.

Appendices

Appendices are attached as separate documents and consist of the following:

Appendix 1	What is Intensive Care?
Appendix 2	AICU Operational Policy
Appendix 3	Estates Annex
Appendix 4	Communications Strategy and Action Plan

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