



Full Business Case Emergency Floor March 2015

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Building Caring at its best

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Glossary of Terms

Abbreviation	Full Heading
ACB	Acute Care Bay
AFU	Acute Frailty Unit
ALOS	Average Length of Stay
BCT	Better Care Together
BREEAM	Building Research Establishment Environmental Assessment
CAP	Conservation Advisory Panel
CAU	Children's Assessment Unit
CCG	Clinical Commissioning Group
CDM	Construction, Design Management
CEM	College of Emergency Medicine
CGA	Comprehensive Geriatric Assessment
CHP	Combined Heat & Power
CMG	Clinical Management Group
CT	Computerised Tomography
DCP	Development Control Plan
DH	Department of Health
DQI	Design Quality Indicator
ECIST	Emergency Care Intensive Support Team
ECN	Emergency Care Network
ED	Emergency Department
EDU	Emergency Decisions Unit
EF	Emergency Floor
EFU	Emergency Frailty Unit

Abbreviation	Full Heading
EMAS	East Midlands Ambulance Service
EPR	Electronic Patient Record
FBC	Full Business Case
FOT	Forecast Outturn
FM	Facilities Management
GEM	Generic Economic Model
GMP	Guaranteed Maximum Price
H&S	Health & Safety
HBN	Health Building Note
HTM	Health Technical Memorandum
GP	General Practitioner
HDU	High Dependency Unit
I&E	Income and Expenditure
IBP	Integrated Business Plan
IM&T	Information Management & Technology
IP	Infection Prevention
IPR	Integrated Performance Report
ITU	Intensive Therapy Unit
JSNA	Joint Strategic Needs Assessment
KPI	Key Performance Indicator
LCC	Leicester City Council
LLR	Leicester, Leicestershire & Rutland
LOS	Length of Stay
LPT	Leicestershire Partnership Trust

Abbreviation	Full Heading
LRI	Leicester Royal Infirmary
LTFM	Long Term Financial Model
MES	Managed Equipment Service
MlaMIEE	Minor Injury and Minor Illness, Eyes, ENT
MRI	Magnetic Resonance Imaging
MSK	Musculoskeletal
NEL	Non-elective
NIHR	National Institute of Health Research
NSF	National Service Framework
NTDA	NHS Trust Development Authority
OBC	Outline Business Case
OJEU	Official Journal of the European Union
ONS	Office of National Statistics
OSC	Overview Scrutiny Committee
PIR	Post Implementation Review
PPE	Post Project Evaluation
PPI	Public & Patient Involvement
PSCP	Principal Supply Chain Partner
PUBSEC.BIS FP	Public Sector, Dept. for Business Innovation & Skills Firm Price (Tender Price Index of Public Sector Buildings (Non-housing))
QIPP	Quality, Innovation, Productivity and Prevention
RAU	Rapid Assessment Unit
SDM	Senior Decision Maker
SI	Site Investigation
SOC	Strategic Outline Case

Abbreviation	Full Heading
SSPAU	Short Stay Paediatric Assessment Unit
UCC	Urgent Care Centre
UHL	University Hospital of Leicester NHS Trust
VFM	Value For Money
YTD	Year To Date

Contents

Document Quality Management	2
Document History	2
Glossary of Terms	4
1 Executive Summary.....	13
1.1 Introduction	13
1.2 Strategic Case	14
1.3 Economic Case.....	23
1.4 Commercial Case.....	29
1.5 Financial Case	30
1.6 Management Case.....	35
1.7 Stakeholder Support	41
1.8 Recommendation	42
2 The Strategic Case.....	43
2.1 Introduction	43
2.2 Structure & Content of the Document.....	45
Part A: The Strategic Context	47
2.3 Introduction	47
2.4 Organisational Overview & Background.....	47
2.5 The Leicester Royal Infirmary Site	51
2.6 Site Specific Constraints	53
2.7 Background to the Redevelopment Requirement for Emergency Care.....	54
2.8 Existing Arrangements	55
2.9 Strategy	60
2.10 Summary	74
Part B: The Case for Change	75
2.11 Introduction	75
2.12 Clinical Drivers for Change.....	75
2.13 The Model of Care	79
2.14 Current Activity & Demand	84
2.15 Schedule of Accommodation to inform the Option Appraisal Process ..	88
2.16 Design Development process	89

2.17	Quality of Care	91
2.18	Investment Objectives, Key Deliverables & Benefits Criteria	96
2.19	Benefits Realisation	109
2.20	Design Quality & Philosophy	109
2.21	Potential Business Scope & Key Service Requirements	113
2.22	Main Risks	114
2.23	Constraints & Dependencies	115
3 	The Economic Case	117
3.1	Introduction	117
3.2	Estates Annex	117
3.3	Critical Success Factors	118
3.4	Determining the Capacity	119
3.5	Options Appraisal	123
3.6	Economic Appraisal	125
3.7	The Preferred Option – Option 3A Victoria	132
4 	The Commercial Case	135
4.1	Introduction	135
4.2	Procurement Strategy	135
4.3	Key Factors Affecting Outcomes	137
4.4	Potential for Risk Transfer	138
4.5	Proposed Charging Mechanisms	138
4.6	Proposed Contract Lengths	139
4.7	Proposed Key Contractual Clauses	139
4.8	Personnel Implications (including TUPE)	139
4.9	Procurement Strategy & Implementation Timescales	139
4.10	Equipment Strategy	139
4.11	Financial Reporting Standard 5 Accountancy Treatment	141
5 	The Financial Case	142
5.1.	Introduction	142
5.2.	Capital Costs	142
5.3.	Financing	143
5.4.	Income & Expenditure	143
5.5.	Workforce Plan	149
5.6.	Impact on Trust Balance Sheet	153
5.7.	Capital Charges	154
5.8.	Sensitivity	155
5.9.	Affordability	157

5.10.	Comparison of IBD and PDC financing	158
5.11.	VAT Recovery	159
5.12.	Long Term Financial Model	161
6 	The Management Case	162
6.1	Introduction	162
6.2	Project Governance Arrangements	162
6.3	Outline Project Roles & Responsibilities	163
6.4	Use of Special Advisors	170
6.5	Stakeholder Engagement	170
6.6	Outline Arrangements for Change & Contract Management	174
6.7	Outline Arrangements for Benefits Realisation	174
6.8	Outline Arrangements for Risk Management	175
6.9	Outline Arrangements for Post Project Evaluation	178
6.10	Gateway Review Arrangements	180
6.11	Contingency Plans	182
	Appendices	183

Figures and Tables

Figure 1.A	University Hospitals of Leicester NHS Trust Sites	13
Figure 1.B	Resus Functions	16
Figure 1.C	Initial Assessment Functions	17
Figure 1.D	Emergency Floor Case for Change	19
Table 1.1	FBC Scenario - Activity Percentages.....	21
Table 1.2	FBC Scenario - Activity Figures.....	21
Table 1.3	Summary of Economic and Value for Money Appraisal.....	25
Table 1.4	Capital Costs at OBC & FBC.....	26
Table 1.5	Summary of Position compared to OBC.....	28
Table 1.6	Summary of Capital Costs.....	30
Table 1.7	Sources and Applications of Funds	31
Table 1.8	5 Year Financial Summary	32
Table 1.9	Impact on Trust's Balance Sheet.....	34
Table 1.10	Value of Impairments.....	34
Figure 1.E	UHL Capital Governance Framework.....	36
Table 1.11	Emergency Floor Project Board Membership	36
Table 1.12	Emergency Floor Project Team Membership	37
Table 1.13	Project Milestones	38
Table 1.14	External Advisors.....	39
Table 2.1	Trust Services.....	47
Figure 2.A	University Hospitals of Leicester NHS Trust Locations.....	47
Figure 2.B	Analysis of the Trust's Capital Expenditure 2013/14.....	50
Figure 2.C	Leicester Royal Infirmary Photo, Feb 2009.....	51
Figure 2.D	Leicester Royal Infirmary Site Plan.....	52
Figure 2.E	UHL Land Ownership Plan: Leicester Royal Infirmary.....	53
Table 2.2	2013/14 and 2014/15 Penalties	54
Table 2.3	Current Capacity Provision	59
Table 2.4	National Strategies, Programmes and Guidance.....	60
Figure 2.F	Better Care Together Case for Change	68
Figure 2.G	Trust Strategic Objectives.....	70
Figure 2.H	Emergency Floor Case for Change	75
Figure 2.I	Patients in the middle of Majors.....	77
Figure 2.J	Adult Model of Care.....	81
Figure 2.K	Paediatric Model of Care	81
Figure 2.L	Preferred Adjacencies	84
Table 2.5	2013/14 Full Year 4 Hour %	85
Table 2.6	2014/15 Full Year to Date (as per 11/11/14) 4 hour %	85
Figure 2.M	Resus Functions.....	90
Figure 2.N	Initial Assessment Functions	91
Table 2.7	Quality of Care by CQC Domain.....	92

Table 2.8	Investment Objectives & Wider Benefits Realisation Plan	97
Table 2.9	Metrics for Performance Management	106
Table 2.10	Main Risks and Counter-Measures	114
Table 3.1	Critical Success Factors	118
Table 3.2	FBC Scenario - Activity Percentages.....	120
Table 3.3	FBC Scenario - Activity Figures.....	121
Table 3.4	Results of Qualitative Options Appraisal	124
Table 3.5	Summary of Economic and Value for Money Appraisal.....	125
Table 3.6	Capital Costs at OBC & FBC	126
Table 3.7	Risk Summary	128
Table 3.8	OBC Revenue Costs	129
Table 3.9	FBC Revenue Costs.....	130
Table 3.10	Changes between OBC and FBC.....	131
Table 3.11	Assessment of Sensitivities	132
Table 4.1	Key External Advisors & Construction Services	135
Table 4.2	Summary of Capital Equipment Costs	140
Table 5.1	Summary of Capital Costs.....	142
Table 5.2	Sources and Applications of Funds	143
Table 5.3	Activity Assumptions.....	143
Table 5.4	5 Year Financial Summary	144
Table 5.5	Changes in Income & Expenditure	145
Table 5.6	20 year scenario Income and Expenditure	147
Table 5.7	Impact on Trust's Balance Sheet.....	153
Table 5.8	Value of Impairments.....	154
Table 5.9	Calculation of Impairment Value.....	154
Table 5.10	Capital Charge Summary	155
Table 5.11	Sensitivity Analysis on Revenue Assumptions	156
Table 5.12	Revenue impact of IBD vs PDC.....	159
Table 5.13	Cash impact of IBD vs PDC.....	159
Table 5.14	VAT Recovery	160
Figure 6.A	Project Governance.....	162
Table 6.1	Emergency Floor Project Board Membership	164
Table 6.2	Emergency Floor Project Team Membership	165
Table 6.3	Emergency Floor Project Steering Group Membership	167
Table 6.4	Project Milestones	169
Table 6.5	External Advisors.....	170
Table 6.6	Key Project Stakeholders	170
Table 6.7	Gateway 3 Recommendations.....	181

1 | Executive Summary

1.1 Introduction

This Full Business Case (FBC) is for the redevelopment of the Emergency Department (ED), creating a new Emergency Floor (EF) on the Leicester Royal Infirmary site of University Hospitals of Leicester NHS Trust (hereafter referred to as 'UHL' or 'the Trust'). It proposes to develop an Emergency Floor that will address the demand challenges faced by both ED and medical assessment services, with the intention of developing a future proofed solution that will flexibly meet future demand over the next 20 years.

The Trust is one of the largest teaching Trusts in the country and operates across three main sites; Leicester Royal Infirmary, Leicester General Hospital and the Glenfield Hospital, and is the only acute Trust serving the diverse local population of Leicester, Leicestershire and Rutland (LLR); equating to approximately 1 million residents.



Glenfield Hospital



Leicester General Hospital



Leicester Royal Infirmary

Figure 1.A University Hospitals of Leicester NHS Trust Sites

Leicester Royal Infirmary provides Leicestershire's only Emergency Department (ED), as well as being the base for the Trust's Children's Hospital and Urgent Care Centre (UCC).

In 2012 the Trust identified a number of services requiring redevelopment/development across their three sites to ensure ongoing enhancement and maintenance of essential health services to the local community. As a consequence, the Trust has updated its 5 year Estates Strategy to provide an integrated and strategic approach to developing its estate and infrastructure; aligned to and reflecting the Clinical Strategy and Integrated Business Plan, and is consistent with the LLR system wide strategic plans.

This business case focuses on the Emergency Floor Reconfiguration project; the first of the main reconfiguration projects for the Trust. It highlights that current arrangements do not meet the current activity demands or the projected requirements over the next 20 years.

In line with the national concern about the ability of emergency services to cope with demand, UHL has experienced a rise in attendances to its ED. This has resulted in many patients waiting for excessive periods and performance being well below the national standard of 95%; this reflects poor quality of care for patients, reduced clinical

effectiveness, an unacceptable delay in treatment, increased clinical risk and compromised patient safety.

In partnership with local commissioners, UHL has instigated a number of short term measures to improve performance, such as the addition of adult medical assessment beds and a new GP assessment clinic to alleviate current pressures. UHL has set out a clear vision for the future of the emergency care pathway and is undertaking a programme of change to redesign processes within the existing footprint and built environment, but there is still an issue with the design and size of the current ED and associated medical assessment areas in their entirety. They are deemed totally inadequate to cope with demand, as previously stated by the Emergency Care Intensive Support Team (ECIST) and more recently by external consultant Dr. Ian Sturgess. Appendix 2A highlights the ECIST review of the LRI ED, undertaken in March 2013.

Their findings identified that 12,600 patients were seen annually in a 6 bedded resuscitation area where 10 beds were deemed to be more appropriate; and 52,000 ambulance patients passed through a 16 cubicled majors area. Inadequate space results in patients being lined up in trolleys in the open floor space in majors and doubled up in cubicles. Size and poor adjacencies therefore inhibit the Trust's ability to smoothly move patients through the department to associated floors and medical assessment areas, resulting in delays to the patient journey and a poor patient experience. In addition, the medical assessment service (Rapid Assessment Unit (RAU) & Acute Care Bay (ACB)) is currently on the 5th floor of the Balmoral building and there is no access to X-ray or CT services within the ED, all of which further hinders an efficient patient pathway and increases risk to patients.

This FBC highlights the urgent need for change to the physical estate currently supporting the ED and associated medical assessment areas in order to improve patient flows, address capacity issues, optimise clinical adjacencies, reduce mortality and harm, and increase staff efficiencies.

1.2 Strategic Case

1.2.1 Design Development process

The operational policy and the model of care have been visible in influencing the design process throughout the delivery of the Emergency Floor business case, from capturing the design brief, to massing the site for the preferred option through to influencing the size and quantum of the functional content.

In capturing the design brief the project team had to consider a number of competing issues which included;

- ▶ The model of care for UHL's new Emergency Floor in particular the need to respond to the percentage of elderly and dementia care contained within the planned 200,000 attendees and the need to stream throughput prior to entering the department through the "big front door" concept

- ▶ Health Building Note 22 - accident and emergency departments 2003
- ▶ Health Building Note 15-01 - accident and emergency departments April 2013
- ▶ The work developed since the inception of NHS P21 framework in producing standard room design

The resultant design brief for the Emergency Department equated to a Gross Internal Floor Area (GIFA) of 4,500m². This provided the project team with a critical floor area against which to appraise the short listed options. The physical development constraints of the preferred option provided a design solution with a GIFA of 4,200m²; derogation against the design brief of 5%.

The model of care included within the Emergency Floor Business Case, aligned to the current and projected attendance figures, consider the concept of the "Front Door" as outlined in HBN 15-01. This facilitates greater levels of patient streaming to occur to ensure that patients enter the correct level of care and functional area to assist clinical processes.

The design further responds to support clinical operations in that the functional content can be categorised as follows;

- ▶ Fixed acuity - For example the function of the resuscitation space and the adjacency to ambulance access and imaging equipment
- ▶ Adaptable - Generic space that can flex up or down dependant on the acuity of care required, for example ensuring that we design into the generic space the ability to care for the patient either within minors or majors avoiding the need for the patient to move location
- ▶ Chair centric - The design has acknowledged that a patient does not need to be located on a bed/trolley when their care is only for a short period time, therefore, the sizing and spatial requirements of our initial assessment rooms has given consideration of this.

The estates annex for the Emergency Floor (section 6.7, scheme derogations) has considered our model of care along with the spatial standards as described in HBN 22, HBN 15-01 and from the research carried out by Principal Supply Chain Partners (PSCPs) since the inception of the P21 pilot projects in 2002 in support of our clinical operations.

From this the trust has derogated from HBN 22 recognised space standards in support of a space allowance that reflects the manner in which we intend to deliver our model of care, for example;

- ▶ Resuscitation - The design of this space is evidenced through the locating of such functions as the near patient testing and wash hand basin outside of the room, which in the HBN are assumed to be located within the room. This adds further evidence to the functionality of the space. This is shown below:

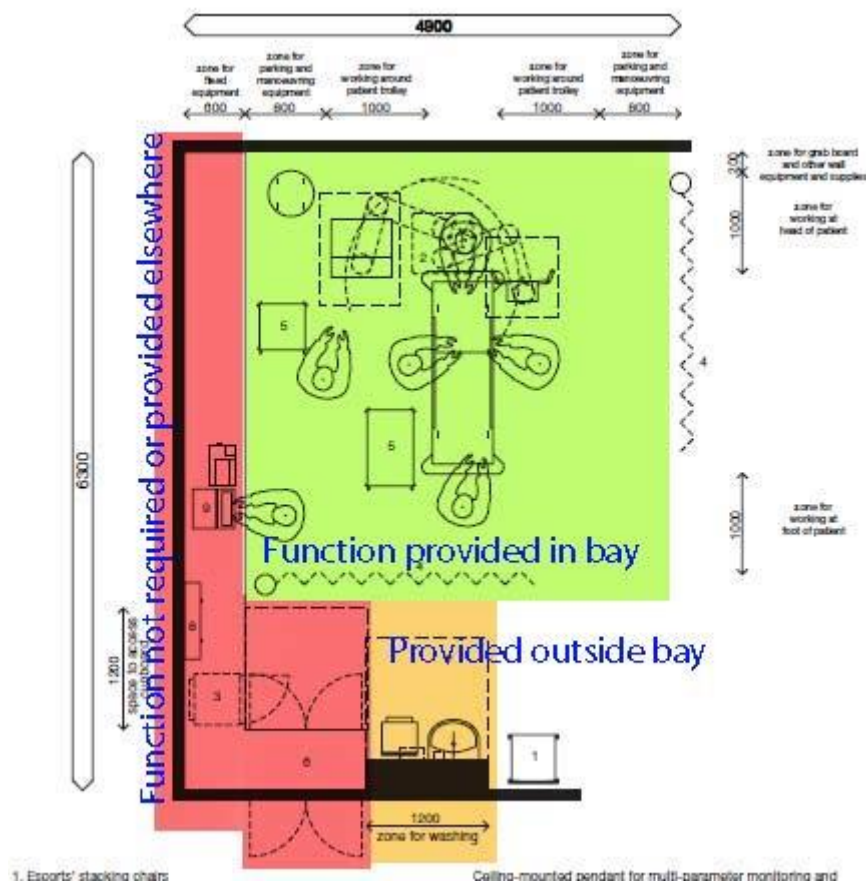


Figure 1.B Resus Functions

- Initial Assessment rooms - The space standards of this room would generally be categorised as a standard treatment room at 14m², however, the function of the space in "chair centric" form, has enabled the Project Team to evidence the design to be delivered within a 10m². Again, further evidence of functionality is evidenced once those functions that would be within the standard treatment room are identified as being carried out elsewhere:

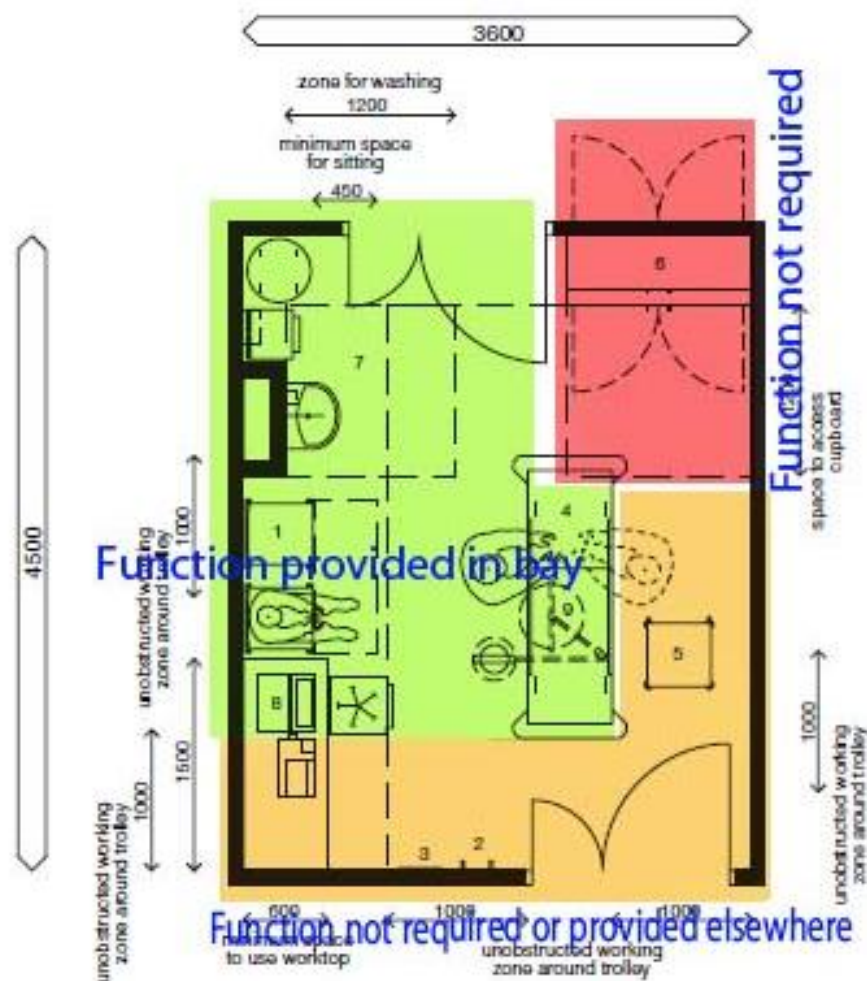


Figure 1.C Initial Assessment Functions

1.2.2 The Strategic Context

The Trust's organisational objectives are:

- ▶ High quality care for all – patient safety, improve outcomes & patient experience
- ▶ Quality Commitment – save lives, reduce harm, patient centred care
- ▶ 7 day a week consultant delivered services
- ▶ Optimising clinical service adjacencies to reduce avoidable deaths
- ▶ Reducing time patients avoidably spend in hospital
- ▶ Care closer to home through better integration with Community services
- ▶ Providing high quality services in a financially affordable & sustainable way
- ▶ Understand potential impact of alliances of care at local, regional & national levels

These objectives are underpinned by the following Investment objectives of this project:

- ▶ To provide the Trust with increased capacity for emergency services to meet the demands of population growth, changing service models and improved efficiency targets.
- ▶ To increase the productivity of the emergency care pathway at the LRI.
- ▶ To develop a centre of excellence, enhancing the Trust's reputation for training, service delivery and treatment, through the provision of a centralised service in modern accommodation.
- ▶ To ensure that the changing needs and expectations of a growing population are met in line with Trust clinical strategy and national guidance.
- ▶ To improve the clinical effectiveness and safety of urgent and emergency care service across Leicester.
- ▶ To improve the clinical adjacencies of services to optimise clinical safety and reduce clinical risk.
- ▶ To facilitate the modernisation of services, including streamlining patient pathways and efficient working practices providing an Emergency Floor that ensures adequate infrastructure and capacity for supporting services that are conducive to the needs of a modern workforce.
- ▶ To equip the Emergency Floor to respond effectively to existing and known commissioning requirements, as well as to respond flexibly to future changes in service direction and demand.
- ▶ To improve the environment and the experience of users (patients, visitors and staff) of Leicester Royal Infirmary Hospital's Emergency Department.
- ▶ To provide a solution that is aligned to the Trust 5 Year Estates Strategy DCP plan and Trust organisation as a whole.
- ▶ To deliver the development on time with minimal disruption to current service delivery.

Each of the project objectives has been formulated based upon the drivers for change and national, regional and local strategic directions, promoting efficiencies in practice and ensuring statutory, national, regional and local targets are achieved.

1.2.3 The Case for Change

Emergency Medicine is a secondary care specialty which provides immediate care for patients of all ages presenting with illness and injury of all severities¹.

Utilising the Better Care Together Case for Change Framework, the case for change for the Emergency Floor has been summarised in Figure 1B below:

¹ The College of Emergency (2011, February). What is Emergency Medicine? A guide.

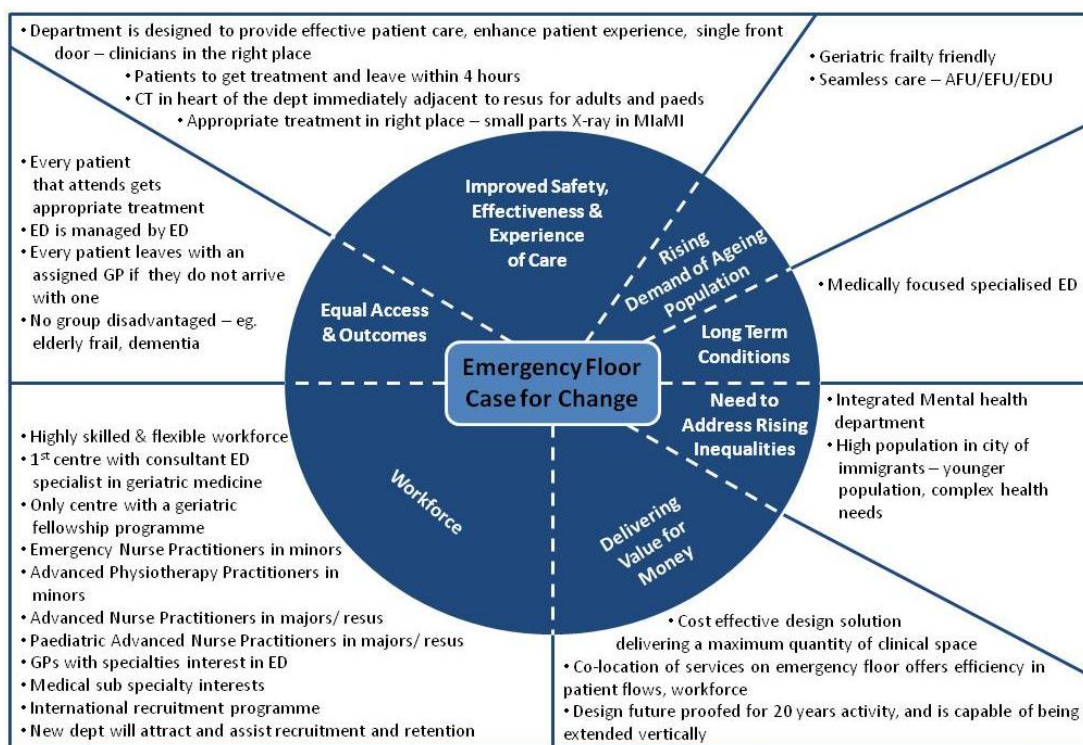


Figure 1.D Emergency Floor Case for Change

In order to provide the level of high quality emergency care and medical assessment services that comply with regulatory standards, it is essential that the Trust ensures that its patients can receive treatment and staff can work in a safe environment, and that patient treatment is efficient and timely in its delivery.

The following are key drivers for change:

- ▶ The increasing demand for emergency services is greater than the current capacity can provide. Historic trends in growth suggest a 5% annual growth in ED activity and 3.5% annual growth in medical assessment activity
- ▶ Requirement for single floor Emergency and Medical Assessment Department that incorporates key adjacencies and presence of diagnostics and medical assessment unit services on the same floor. This enables implementation of the developed model of care for both adults and children accessing emergency services
- ▶ Changes in the local and national demographics combined with the Trust's plan to remain an Emergency Care Centre for Leicester is impacting on increased emergency care demand
- ▶ The Trust requires additional capacity to reflect NHS national guidance. The Emergency Floor project reduces the risk of compromising compliance of other standards of care such as quality, infection control, privacy and dignity, emergency and urgent care standards and commissioning standards
- ▶ The Trust needs to be in a position to be named as a 'Major Emergency Centre' as outlined in the Urgent and Emergency Care Review November 2013 – End of Phase 1 Report (Keogh)

- ▶ The requirement to address the 4 hour target and ambulance to trolley transfer times will have a significant impact on Trust financial performance if capacity issues are not resolved
- ▶ Redevelopment and increased capacity will provide opportunities for the Trust to fulfil its strategic redevelopment programme

1.2.4 Capacity & Demand

The Trust has undertaken extensive work as part of the Better Care Together (BCT) programme, projecting ED and Medical Assessment activity for the next 5 year period. This work has concluded that UHL will see a 7.8% reduction in ED attendances over the next 5 years. This reduction is not applied uniformly across all areas of the department as high acuity resus/ majors patients are not likely to be diverted from the acute hospital setting into community services. However lower acuity patients such as those with minor injuries or minor illnesses could be diverted and therefore this is where the reduction in overall activity will be achieved.

At the time of writing the Developed OBC (August 2014), the Trust's Long Term Financial Model (LTFM) was not aligned to the BCT planning assumptions, as the LTFM had been submitted to the NTDA prior to the release of the BCT information. Therefore the two activity projections were not aligned, and the NTDA agreed that the Developed OBC would reflect two activity scenarios. However, it was subsequently agreed with the NTDA and CCGs that work would be carried out in advance of the FBC to develop one model which aligned to the BCT programme.

The Trust's ED attendances have continued to increase during 2014/15 and consequently neither model proposed in the Developed OBC reflected a realistic way forward. Following discussions with the CCGs (Better Care Together Programme Stakeholders), a pragmatic approach has been agreed which uses the forecast outturn activity for 2014/15 as the baseline; and then applies the BCT assumptions over the subsequent 5 years using 2015/16 as year 1. Years 6-20 will follow demographic growth in line with the Office of National Statistics (ONS); an annual increase of 1% for ED and Clinic activity, and 1.5% annually for medical assessment activity. This is the single model reflected in this FBC which is outlined in more detail in Section 3.3. This agreement is confirmed in the letter of support for the FBC from the CCGs (Appendix 1A).

In addition to the activity projections, the Trust has also undertaken activity analysis relating to hourly arrival percentiles. The 85th percentile number of hourly arrivals across the entire unit is in the region of 40 patients per hour. On occasions this volume may recur for two or three hours at a time. For the purposes of planning the new department, the capacity requirement was based on 95th percentile hourly arrivals. However as part of the Developed OBC this requirement was revised following NTDA feedback and is now based on 85th percentile hourly arrivals. It is important to note that efficiencies are impacted by the extent that patients occupy clinical spaces – resus bays, majors cubicles, etc – purely for the purpose of waiting (e.g. waiting for diagnostics or transfer, rather than for clinical intervention). In addition to capacity it is essential that adjacency requirements are considered and the associated impact on efficiencies and patient experience. This is particularly relevant for both the medical assessment and diagnostic services.

The UCC contract is currently held by George Eliot NHS Trust. The impact of this contract being held outside of UHL has been modelled in the FBC I&E through the reductions in activity, consistent with CCG assumptions regarding the activity shift that will occur. While the design has been based on the total activity figures (ED & UCC), the activity modelling in respect of a revenue position must exclude the UCC activity as it is not currently provided by UHL. It should be noted that additional workforce efficiencies over and above those identified in the Workforce Plan could be achieved if there was a single clinical management structure for the ED and UCC. When the UCC contract is put to market (new contract to commence in April 2016), UHL will bid to provide this element of the emergency pathway but this has not been assumed in the FBC.

The agreed activity model (percentage and actual numbers) for the FBC is shown in the Tables 1.1 and 1.2 below. As explained above, this excludes UCC activity.

Table 1.1 FBC Scenario - Activity Percentages

	Baseline	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20
ED & CAU	FOT 2014/15	-8.30%	1.60%	-0.20%	0.00%	0.30%
Medical Assessment		-3.10%	-5.40%	-6.60%	-2.10%	-1.00%
Clinic Activity		0.00%	1.00%	1.00%	1.00%	1.00%

Table 1.2 FBC Scenario - Activity Figures

	Baseline FOT 2014/15	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20
ED	145,837	133,733	135,873	135,601	135,601	136,008
CAU	11,773	10,796	10,969	10,947	10,947	10,980
Medical assessment	8,963	8,685	8,216	7,674	7,513	7,438
Clinic Activity	15,248	15,248	15,400	15,554	15,710	15,867
TOTAL	181,822	168,462	170,458	169,776	169,771	170,292

1.2.5 Future Flexibility

A key principle of the design of the new Emergency Floor is flexibility of space. This is important to allow the floor to respond to variations in patient flow, acuity & type (e.g. age) both on a day to day basis and into the future. A core component of the design solution will be the standardisation of the design of rooms within individual streams where possible, so that a wide range of practitioners can use any room for patient examination and treatment. A standardised design will also ensure that all staff are familiar with the location of equipment and facilities in any space.

Within the new build ED, the Majors department has been designed as two identical halves which allows half to be closed at quieter times. It also helps mitigate the risk associated with a lack of outflow from the department; as if this were to occur half of

Majors could flex and become a temporary short stay assessment area. The bays are large enough for ED trolleys to be replaced with beds, the doors at the front of each bay ensure adherence to same sex compliance and infection prevention measures, and there are sufficient WC facilities. The MIaMI area is also a flexible space as the Minor Injuries and Minor Illness rooms are identical in design & content meaning the services can flex up and down to respond to activity levels. The MIaMI has also been designed to run as a completely independent ED e.g. in response to a flu epidemic the MIaMI could become the “flu ED”, thereby reducing infection risks to “non-flu” patients attending the main ED.

Within the Medical and Geriatric Assessment areas, all beds except the Acute Care Bay have been planned as generic spaces with identical provision of medical gases, examination lighting etc. While the design recognises the need to have certain distinct areas, it also responds to the requirement for flexing up and down in response to activity levels e.g. the Acute Frailty Unit and Emergency Frailty Unit work closely together with co-management of patients by both ED and Geriatric Medicine staff; while catering for different levels of patient acuity, with all AFU patients in beds highly likely to be admitted, and EFU patients in chairs or beds highly likely to be discharged.

In addition the structural design is such that it can take an additional floor at a later stage, in line with the Trust’s Development Control Plan.

1.2.6 Constraints & Dependencies

The constraints and dependencies relevant to the project are:

- ▶ **Better Care Together Programme:** the whole health economy has a strategy for improving Emergency Processes which this project must align to. This will include changing models of care to encourage fewer attendances to the Emergency Department
- ▶ **Budget:** the Trust has a limited capital budget, and must seek approval from the NTDA for any expenditure of over £5m of Treasury capital (i.e. excluding funds from donations).
- ▶ **Workforce:** the Trust has a strategic workforce plan as part of its 5 year Integrated Business Plan; assumptions for workforce changes, recruitment and retention within this project must align with the Trust’s overall workforce plan.
- ▶ **Physical:** the existing accommodation is heavily occupied, making the splitting of the project into two phases an essential component of this project and the potential for disruption to the Trust organisation and infrastructure as a whole
- ▶ **Phasing:** difficult, and potentially reducing the ability to comply with national guidance
- ▶ **Timeliness:** the hospital will see continued pressure, both in terms of Urgent Care and ED attendances. From an operational perspective, the new facility must be ready as soon as practicably possible
- ▶ **Trust Transformation Programme:** Trust wide schemes for redevelopment of the Trust sites are all interdependent. This is the first scheme in a number of site-wide reconfiguration schemes.

- ▶ **Capital:** The project overall is dependent on the Trust securing the majority of capital through support from the NTDA
- ▶ **IM&T:** The project is dependent on the implementation of the Trust's Electronic Patient Record (EPR) project prior to opening.

1.3 Economic Case

The project comprises a new build Emergency Department and refurbishment of the existing emergency department to create a new medical assessment unit. Both the ED and medical assessment unit will have suitable adjacencies to ITU, Theatres and Base Wards.

The overall project is to be delivered in three phases:

- ▶ **Service Isolation / Diversion and Demolition:** part of the existing Victoria Building will be demolished to make way for the new build phase 1, including:
 - ♦ Moving substation 6 (currently serves A&E and Balmoral Building)
 - ♦ Moving substation 2 (currently serving Victoria Building)
 - ♦ Asbestos strip to service ducts
 - ♦ Isolation and diversion of services to ensure mains services are maintained to remaining buildings
 - ♦ Demolishing the Langham wing of the Victoria Building whilst ensuring connectivity and interfaces between remaining buildings
 - ♦ Demolishing St Luke's Chapel
 - ♦ Demolishing and de-commissioning mechanical plant areas adjacent to St Luke's Chapel
 - ♦ Demolishing the Link bridge from Jarvis

During the demolition works the existing below ground services duct will be protected and maintained to ensure continuous operation of the adjacent building serviced by the site infrastructure running within these ducts.

- ▶ **Phase 1 New Build ED Construction:** construction of a new purpose built ED, extending over the current location of Car Parks A and B, the Langham Wing of Victoria Building and St Luke's Chapel to create a new building for the ED, including the following departments for both Adults and Paediatrics:
 - ♦ Initial Assessment
 - ♦ Resuscitation
 - ♦ Majors
 - ♦ Minor Illness and Minor Injuries, Eye Casualty and Emergency ENT (MIaMIEE)
 - ♦ Diagnostic Imaging

- ▶ **Phase 2 Assessment Refurbishment:** once the ED has moved from its existing location to the new build, the vacated area will be refurbished /remodelled to create the medical assessment and geriatric assessment units. This area will include the following departments:

- ♦ GP assessment area, acute medical clinics and ambulatory care centre (DVT & TIA)
- ♦ RAU (Rapid Assessment Unit)
- ♦ ACB (Acute care Bay)
- ♦ EFU (Emergency Frailty Unit)
- ♦ AFU (Acute Frailty Unit)
- ♦ EDU (Emergency Decisions Unit)

Upon completion these areas will move from their current locations into this refurbished area.

1.3.1 Determining the Capacity

The revised activity assumptions for the FBC, compared to the Developed OBC, are:

- ▶ Use of 20-year planning horizon instead of 10-years
- ▶ Use of FOT 2014/15 as the activity baseline, year 0
- ▶ Use of Better Care Together growth profile for years 1-5 of the projections
- ▶ Use of Office of National Statistics (ONS) population growth for years 6-20 of the model
- ▶ Use of 85th percentile hourly arrivals for ED streams, at 85% occupancy, as per ECIST model

Impact of Revised Scenario

- ▶ The original functional content of the proposed scheme, based on a 10-year planning horizon, remains sufficient to meet the activity projected at year 20 under the new activity modelling, with a small amount of spare capacity spread across a number of zones
- ▶ The original functional content has sufficient capacity to meet around 2% annual growth from years 6-20, should historic trends continue to be realised above the demographic growth of 1%.

This confirms that the originally proposed content and the design developed by the project team remain robust in the light of the FBC scenario assumptions. The slight capacity surplus in the proposed scheme is distributed across the project and its removal from the project would not warrant the cost, time and risk penalties associated with a full-scale redesign. This also provides future flexibility for the Emergency Floor.

1.3.2 Options Appraisal

An options appraisal process was undertaken, as described in the OBC, which reduced a long list of 13 options to a short list of 4 options, and then identified a preferred option, which is Option 3A – Victoria (new build ED, refurbished Assessment Unit).

The short listed options were:

- ▶ **Option 0:** Do Minimum - Ensure critical backlog maintenance is undertaken and review clinical processes & procedures
- ▶ **Option 1A:** Existing 1st floor refurbishment with some assessment provision elsewhere, (inc courtyard infill & extension)
- ▶ **Option 2C:** Demolition of Jarvis building & new build ED & refurbish assessment on single floor
- ▶ **Option 3A:** Demolition of Victoria building and part new build/part refurbish assessment on single floor

Table 1.3 Summary of Economic and Value for Money Appraisal

Criteria	Option			
	0	1A	2C	3A
Raw scores	51.18	131.74	129.64	148.71
Weighted Scores	2.27	6.74	6.27	7.54
Rank (non-financial)	4	2	3	1
Net present cost (NPC) (£k)	1,264,890	1,222,633	1,220,895	1,223,981
NPC per point score (£k)	557,220	181,400	194,720	162,332
Rank (VFM)	4	2	3	1
Overall Rank	4	2	3	1

Option 3A This option demonstrated through the non-financial appraisal process that the Trust is able to realise benefits and achieve strategic objectives and critical success factors of providing an appropriate solution to meeting current and future capacity demands for emergency care.

- ▶ This option lends itself to a detailed design process that provides essential departmental adjacencies
- ▶ Majors and Resuscitation areas can be located close to the front door and ambulances will have an ambulance only access to the department
- ▶ Adjacencies to the minor injuries and minor illness unit are enhanced and assessment services will maintain essential adjacencies within the department

- ▶ Paediatric emergency services demonstrated good adjacencies and separate paediatric entrance point is provided
- ▶ Ambulance access is provided on the same level as department entry which is essential for blue light access. The provision of an ambulance only access to the hospital department is seen as a better outcome to that which the other options can provide
- ▶ The single floor concept can be achieved with provision of diagnostics and assessment within the department and opportunities for flexibility and future proofing the design

This option provides an effective solution to the Trust's needs and in particular will be significantly more effective than the other options at providing flexibility, meeting capacity demands, enhancing the patient experience and emergency care pathway efficiencies. It also offers a solution with the least impact on the Trust's clinical and non clinical operations, DCP and strategic plans.

1.3.3 Estimating Capital Costs

The total capital costs for the preferred option at OBC stage and FBC stage are summarised in table 1.4 below.

Table 1.4 Capital Costs at OBC & FBC

Capital Costs	OBC Stage (£)	FBC Stage (£)
Construction	30,233,828	32,396,521
Fees	6,781,406	5,669,122
Non Works Costs	0	76,021
Equipment	1,692,000	2,403,206
Planning Contingency	2,894,644	2,510,313
Total for approval purposes	41,601,878	43,055,183
Optimism Bias	0	0
Inflation	389,840	937,319
Total	41,991,719	43,992,502
VAT Recovery	-649,792	-663,475

Capital Costs	OBC Stage (£)	FBC Stage (£)
Grand Total	41,341,927	43,329,027

1.3.4 Changes since the OBC

The main changes are as follows:

- ▶ Market testing of many construction works packages are priced higher than forecast
- ▶ Increase in equipment costs following more detailed review of transferable items
- ▶ Additional costs for highways as part of planning approval process
- ▶ Removal of fees in relation to previous options for the scheme
- ▶ Inclusion of non-works costs relating to the relocation of a bed store

For more details see Section 3.6.5.

Operational Policy Review

Throughout the development of the case, the operational policy which articulates the emergency pathway has been under review aiming to provide continual performance improvement. This has particularly been the case for the assessment areas. This resulted in a review of the operational policy with the development of the GP assessment model, and with the identified need to remove barriers between the Acute Frailty Unit and Emergency Frailty Unit in order to provide workforce efficiencies and inform an efficient design.

The outcome was that the design team was tasked with re-designing the area to a revised design brief, using existing structure and services where possible. For example, the Emergency Decisions Unit can stay in its existing location which delivers a leaner capital scheme, while still providing the required clinical functionality. The outcome of this process was to utilize the revised operational policy to inform a design that maximized clinical functionality within the existing environment.

More detail can be found in the Estates Annex at Appendix 2Q.

1.3.5 Guaranteed Maximum Price

The agreed Guaranteed Maximum Price (GMP), which includes inflation and VAT, of Interserve Construction Limited, the Principal Supply Chain Partner (PSCP), for the design and construction of the Emergency Floor at Leicester Royal Infirmary includes all of the costs to date, in addition to all anticipated costs in completing the design and construction of the facility.

The GMP offer made by Interserve in 2014 is based on a construction start date of July 2015. Interserve have confirmed work must start within the following 3 months to

ensure the GMP remains the same. However the impact of not achieving this date will result in a delay, creating additional costs. The GMP offer is included at Appendix 3E.

The total project capital cost is £43.3m and this is broken down into a number of elements (including the GMP) as set out in the table above and in the FB forms which can be found at Appendix 3A, 3B and 3C.

The net position of the FBC is significantly better than the OBC predominantly as a result of revised assumptions on income and clarification of savings associated with workforce planning

1.3.6 Summary of Position compared to OBC

The changes between OBC and FBC are as follows:

Table 1.5 Summary of Position compared to OBC

	OBC	FBC	Comment
Capital Costs	£41,342k	£43,329k	Driven by additional equipment market testing and section 278 works re highways
Annual Revenue Costs (2018/19)	£44,580	£44,754	Driven by changes in activity, additional costs of equipment maintenance and financing source partially balanced by reductions in capital and charges in FM costs

1.3.7 Compliance with Capital Investment Manual & NTDA Thresholds

If the capital total for approval purposes exceeded 5% of the costs stated and approved in the OBC (£41.6M) there would be an automatic lapse of approval of the OBC. The capital total for approval purposes (which excludes optimism bias, inflation and VAT recovery) has increased from £41.6M to £43.1M. This is an increase of £1.5M which is 3.4% of the costs approved at OBC stage. Therefore the capital cost increase is within the tolerances allowed.

If the revenue cost exceeded 10% of the costs stated and approved in the OBC, there would also be an automatic lapse of approval of the OBC. The revenue cost position has only marginally changed between OBC and FBC and is therefore within the parameters.

1.4 Commercial Case

1.4.1 Procurement Strategy

The scheme will be procured through UHL's framework partnership with Interserve FM and assigned to Interserve Construction Limited. UHL followed procurement regulations and law to establish the framework which is headed in contract between the Trust and Interserve FM. Interserve were appointed following an OJEU process with reference: OJ/S S139, 22/07/2011, 231138-2011-EN.

Under the bespoke framework, Interserve Construction Ltd is appointed as principal contractor for the delivery of projects; commercial arrangements and contracts are pre-agreed to cover commissioning of the business case through to final delivery of the asset using an NEC3 Option C Form of Contract (Target Contract with Activity Schedule). Cost savings are split between the Trust and the Client based on previously agreed percentages which will engender a spirit of partnering and collaboration within the Project Team. The risk of cost overrun is transferred to Interserve once the GMP has been agreed and construction stage commenced.

Project risk is dealt with openly from the outset of the project and the client; Interserve and the Design Team are encouraged to take an active role in identifying, mitigating and apportioning risk to the party best suited to deal with it. This should be a proactive process throughout the delivery of the project.

Under the framework, Interserve has:

- ▶ Taken single point responsibility to manage the design and construction process from completion of OBC through to project completion
- ▶ Assembled a dedicated team from its supply chain of experienced health planners, designers and specialists, to successfully deliver facilities that will benefit patients and staff alike
- ▶ Provided benefits of experience of long term partnering arrangements that will continue throughout the life of the project
- ▶ Committed to identifying construction solutions that will assist in the implementation of improved service delivery, best practice and delivering best value

Interserve and UHL have worked together through the full business case (FBC) stage to develop and agree a guaranteed maximum price for delivery of the scheme. This reflects:

- ▶ Fees for professional advice such as design and cost management
- ▶ Market tested packages for construction works on an open book basis

The GMP has been assessed for overall value for money by cost consultants acting for UHL (Rider Levett Bucknall - RLB). This will take into account elements such as:

- ▶ Prevailing rates for similar works nationally and locally

- ▶ Published cost indices
- ▶ Knowledge of the cost of work in the hospital from other recent schemes
- ▶ Prime contractor and client retained risks as identified in the joint risk register

It was agreed that the development of the GMP would be run in parallel with the development of the Works Information and this would be undertaken in a fully open book / collaborative environment, such that a minimum of three quotations would be obtained for all Works Packages making up at least 80% of the GMP.

Package responses were assessed by Interserve Construction Ltd in conjunction with the Trust's advisors RLB to ensure the 'Best Value' tender was included in the GMP. The assessment was not only based on price but also programme, design/ technical proposals and likely risk. Interserve and RLB agreed a formal assessment proposal for each package. Tenders were benchmarked appropriately.

Should the scheme not proceed, the Trust will own the design at point of termination but will be liable for Interserve costs up to that point, in line with contractual commitments made during commissioning of the project.

1.4.2 Key Factors Affecting Outcomes

- ▶ **Planning Permission:** the preferred option requires planning consent, which was obtained on 24th September 2014 subject to Planning Conditions. Appendix 4A shows the Planning Approval and Planning Conditions; Appendix 4B shows the Planning Conditions Tracker. At the time of FBC submission all necessary information has been submitted to LCC to discharge the pre-commencement planning conditions.
- ▶ **BREEAM:** the project team have worked alongside an accredited BREEAM assessor throughout the design process to ensure requirements are considered in a timely manner. The project has been awarded an Interim Certificate – Design Stage by the BRE showing a score of 56.2%, Very Good. See Appendix 4C for the Interim Certificate.

1.5 Financial Case

1.5.1 Capital Costs

The capital costs of the preferred option total £43.3M including forecast out-turn inflation. Below is an analysis of the total costs.

Table 1.6 Summary of Capital Costs

Capital Costs	Option 3A Victoria (£)
---------------	------------------------

Capital Costs	Option 3A Victoria (£)
Construction	32,396,521
Fees	5,669,122
Non Works Costs	76,021
Equipment	2,403,206
Planning Contingency	2,510,313
Sub Total	43,055,183
Optimism Bias	0
Inflation	937,319
Total	43,992,502
VAT Recovery	-663,475
Grand Total	43,329,027

1.5.2 Financing

Table 1.8 below sets out the cashflow associated with the scheme together with sources of funding. This shows that the Trust has clearly identified its capital requirements and has also identified relevant sources of funding.

As can be seen below the Trust has currently funded the initial development costs from its own resources but is seeking funding some of these in addition to the subsequent costs of the scheme from 2015/16. Further details to support these figures are within Appendix 5A.

Table 1.7 Sources and Applications of Funds

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	TOTAL
	£	£	£	£	£	£	£
Capital Expenditure	568,764	6,368,024	17,698,095	18,341,114	1,027,768	-674,738	43,329,027

Funded By							
Public Loan			24,634,883	18,341,114	1,027,768	-674,738	43,329,027
Trust Resources	568,764	6,368,024	-6,936,788				0
Total Funding	568,764	6,368,024	17,698,095	18,341,114	1,027,768	-674,738	43,329,027

1.5.3 Income & Expenditure

Within the first five years, activity levels are predicted to fall based on the assumption of implementation of Better Care Together Plans to divert attendances from ED to alternative providers of care in both primary and community settings. It is anticipated that after this point there will be a small increase in activity driven by changes in demographics and acuity levels. This initial decrease in activity will impact on staffing and non pay costs. These shifts in activity by type have been modelled and will be used to calculate the most appropriate staffing levels taking into account the risks of a 'boom and bust' approach to workforce planning given the lead in times for education and training.

Table 1.9 shows a summary of the impact of these assumptions on the Trust's I&E over the first 5 years. More detailed information on impact can be seen in Table 1.10 below.

Table 1.8 5 Year Financial Summary

	2014/15 £'000	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000
Income change	1,386	239	263	(80)	(127)
Expenditure					
Agency	0	840	1,844	2,347	2,347
Workforce efficiencies	0	356	626	1,373	1,373
Additional clinical costs from new development	0	0	(183)	(734)	(734)
Additional maintenance costs of equipment	0	0	(58)	(271)	(383)
Pay and non pay changes from movements in activity	0	320	332	378	379

Depreciation	177	177	(25)	(637)	(637)
Rate of return & Interest	45	(473)	(987)	(957)	(910)
Total change in expenditure	222	1,221	1,549	1,499	1,434
Total Net Change	1,608	1,460	1,813	1,419	1,307

The Financial Case identifies Income and Expenditure assumptions over the 20 year period.

1.5.4 Workforce Plan

Key to delivery within financial balance is the development of an appropriate workforce to support activity levels within the new Emergency Floor. The workforce plan has been developed in line with assumptions made in the OBC and fully aligns with the capacity and financial models presented in this FBC. The detailed workforce plan is attached as Appendix 5C. This plan describes the overarching process for determining the proposed revenue cost reduction and includes details of both financial and non financial benefits arising from the development of the emergency floor. The plan also includes potential risks and actions to mitigate these.

Overall the aim of the workforce plan is to:

- ▶ Ensure the appropriate supply and skill mix to consistently deliver the 95% ED target, and a number of individual key performance indicators within different components of the Emergency Floor
- ▶ Ensure the right staffing levels are available in all components of the floor to ensure the correct 'gearing' to achieve the identified standards and manage surges in activity
- ▶ To ensure an efficient model of workforce provided at less cost per activity than the current model
- ▶ To ensure the workforce model provides an education, training and career framework model that supports a sustainable future supply of workforce, taking into consideration the fragility of the ED workforce and the need to recruit and retain in the future.

A number of assumptions have been built into the workforce planning processes for the Full Business Case for the Emergency Floor. These are highlighted in section 5.5.

1.5.5 Impact on Trust Balance Sheet

Table 1.10 below sets out the impact on the Trust's balance sheet. Further details to support these figures are within Appendix 5A.

Table 1.9 Impact on Trust's Balance Sheet

	2013 /14 £	2014 /15 £	2015 /16 £	2016 /17 £	2017 /18 £
Assets Under Construction	568,764	6,368,024	17,698,095	18,341,114	353,031
Impairments on new building coming into use (DV likely revaluation)				- 15,718,000	
Impairment on partial demolition of Victoria based m ²		-2,424,261			
Depreciation				-201,870	-807,481
Change to Fixed Assets	568,764	3,943,762	17,698,095	2,421,244	-454,450

As can be seen, the demolition of part of the existing Victoria Building will lead to an impairment in the first instance and this has been based on the square meterage demolished as a percentage of the total building area.

The new Emergency Floor project is expected to be available in June 2017. Prior to this it is treated as an asset under construction.

Once fully operational, we have assumed that as a result of the District Valuer valuation there will be an impairment of 38%.

The value of these impairments is shown in table 1.11 below; further details to support these figures are within Appendix 5A.

Table 1.10 Value of Impairments

Impairments	£K
Demolitions	2,424
New asset coming into use	15,718
Total	18,142

1.5.6 Capital Charges & Impact of Funding Source

Details on capital charges and the impact of a funding source can be found in the Financial Case (Section 5) and Appendix 5A.

1.5.7 Sensitivity

A key sensitivity for the Trust is the activity levels. The Trust has set out in Section 5.4 the impact on the I&E position of activity based on the Better Care Together scenario. This assumes a 7.3% reduction in activity in 2015/16, and this has to be contrasted with an underlying increase in ED activity of circa 8% in 2014/15. An 8% increase in activity approximately equates to an increase in income of £3 million. The Trust has assumed that the cost of delivering the additional activity would be circa £1.65 million. Any level of activity higher than that assumed in the business case therefore will improve the Trust's income and expenditure position.

Other sensitivities include:

- ▶ Increase in capital costs
- ▶ Failure to deliver overall projected I&E position

The Trust has reviewed these sensitivities and has plans to manage any increases in costs or reductions in savings.

1.5.8 Affordability

In developing the FBC efficiencies have been identified which demonstrates the case is affordable to the Trust from a revenue income and expenditure perspective. The efficiencies, outlined in table 5.4, have been developed through detailed activity, capacity and workforce planning.

However, the Trust has been given guidance from the Department of Health, via the TDA, that the main affordability assessment of the case has to assume use of Interest Bearing Debt (IBD) as opposed to Public Dividend Capital (PDC).

As a consequence of this assumption there is a material impact on the ability the Trust has to manage the cash impact of making loan repayments.

Based on TDA guidance the Trust is clear that there is justification to support the use of PDC in funding this development. If the application for PDC is not supported by the TDA or the DH it is felt that the only practical solution to financing the cash impact would be further financial support to enable it to continue to invest in operational capital at the appropriate level and pay suppliers in accordance with NHS policy.

1.6 Management Case

1.6.1 Project Governance Arrangements

Project Governance arrangements have been established to reflect the Trust's Project Management Plan for the delivery of capital investment, as shown in the diagram below:

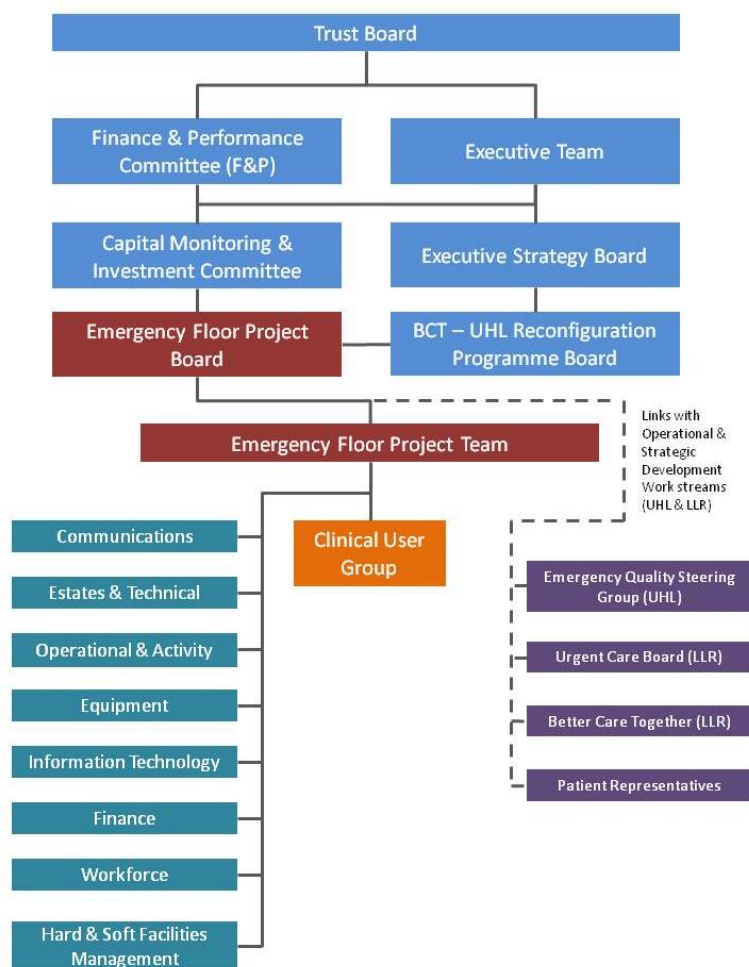


Figure 1.E UHL Capital Governance Framework

Regular Progress Reports are submitted to the Capital Planning Group, Executive Strategy Board and Trust Board for onward reporting and management within the established Trust management structure.

1.6.2 Core Groups & Responsibilities

The roles and responsibilities for the main project groups are summarised as follows:

Emergency Floor Project Board

The membership of the Project Board is:

Table 1.11 Emergency Floor Project Board Membership

Member	Title
Dr Kevin Harris	Chair/ Medical Director

Member	Title
Richard Kinnersley	Major Capital Projects Technical Director, UHL
Nicky Topham	Project Director/ Programme Director of Reconfiguration, UHL
Paul Traynor	Director of Finance
Phil Walmsley	Head of Operations
Dr. Ian Lawrence/ Jane Edyvean	Senior User/ Emergency & Specialist Medicine CMG Representative
Dr. Andrew Furlong	Senior User/ Deputy Medical Director
Dr. David Yoemanson	Senior User/ Woman's & Children's Divisional Representative
John Clarke	Chief Information Officer
Ian Crowe	Non Executive Director
Michael Pepperman	Healthwatch representative
Tiff Jones	Head of Communications

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

Monthly progress reports, including projections of forthcoming key activities and decisions, will be submitted to the Project Board by the Project Director.

Emergency Floor Project Team Meeting

The membership of the Emergency Floor Project Team Meeting is the work-stream leads:

Table 1.12 Emergency Floor Project Team Membership

Member	Title	Role (work-stream lead)
Nicky Topham	Project Director, UHL	Chair
Richard Kinnersley	Major Capital Projects Technical Director, UHL	Estates & Technical

Member	Title	Role (work-stream lead)
Jane Edyvean	CMG General manager	Workforce, activity & clinical commissioning
John Clarke	Chief Information Officer	IT
Richard Pitt	Head of Procurement	Equipment
Tiff Jones	Communications Manager	Communications
Louise Gallagher	Workforce Manager	Workforce professional advisor
Paul Gowdridge	Head of Strategic Finance	Finance
TBC	Interserve FM	Hard & Soft FM

This fortnightly group is a designated committee appointed by the Project Board, with responsibilities which ensures:

- ▶ Operational delivery of the scheme to time, quality and budget.
- ▶ Decision on matters for escalation for ESB and Trust Board direction/ information
- ▶ Management of risks and issues and escalation of appropriate matters for executive direction/ approval
- ▶ Drawing together the outputs of the Working Groups and coordination of cross cutting issues

Working Groups

Working Groups will be convened by the leads as above to provide advice and direction to the detailed design process. Their roles are summarised in Section 6.

1.6.3 Project Plan

The Project Programme is intended to deliver the project by summer 2017, though this timeline is predicated on meeting key submission and approval dates to both the Trust Board and NTDA. The full programme can be found at Appendix 6B. The milestones for this project are set out below.

Table 1.13 Project Milestones

Milestone	Date
Commence isolation, diversion, demolition works	December 2014
NTDA approval of Developed Outline Business Case	March 2015
Trust Board approval of Full Business Case	April 2015
NTDA Capital Investment Group approval of Full Business Case	April 2015

NTDA Board approval of the Full Business Case	May 2015
Isolation, Diversion, Demolition complete	June 2015
Commence construction (Phase 1 – ED)	July 2015
Complete construction (Phase 1 – ED)	Winter 2016
Commence construction (Phase 2 – Medical Assessment & Frailty Units)	January 2017
Complete construction (Phase 2 – Medical Assessment & Frailty Units)	Summer 2017

1.6.4 Use of Special Advisors

Special advisers have been used in a timely and cost-effective manner in accordance with the Treasury Guidance.

Table 1.14 External Advisors

Emergency Floor Development		
1	Interserve Construction Ltd	Building/ Construction Supervisors
2	Interserve Engineering Services	MEP Detailed Design & Installation
3	Rider Levett Bucknall	Trust Project Management
4	Rider Levett Bucknall	Trust Cost Advisors
5	Capita	Architects
6	Capita	Cost Consultants
7	Capita	Business case / Finance analysis
8	Capita	Structural Engineers
9	Capita	Mechanical and Electrical Engineers
10	Capita	CDM

1.6.5 Stakeholder Engagement

A Communications Strategy (Appendix 6C) has been developed in consultation with the Trust's Communications and Marketing Team; this identifies key stakeholder groups and key messages that need to be shared at key milestones in the project. This is an extremely important plan for the Trust since the Emergency Floor project represents the first large capital project being undertaken as part of a wider Trust reconfiguration plan.

1.6.6 Outline Arrangements for Change & Contract Management

The Change Control procedures will be undertaken in accordance with the flow charts identified within the NEC3 contract framework.

Project specific versions of these will be prepared identifying the basic process in relation to:

- ▶ Issue of Project Manager's Instruction
- ▶ Contractor confirms price and programme implications within 3 weeks
- ▶ Project Manager raises Compensation Event within 2 weeks if in agreement
- ▶ Client Accepts Compensation Event and signs accordingly
- ▶ Contractor updates Programme

1.6.7 Outline Arrangements for Benefits Realisation

The delivery of benefits will be managed through the Emergency Floor Project Board. A copy of the benefits realisation plan can be seen in Section 2.17; this 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 sufficient capacity to meet demand, efficiencies in service delivery, compliance to standards and minimised disruption to overall Trust operations.

1.6.8 Outline Arrangements for Risk Management

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 (in particular one of this size and complexity) that the risk management process involves all key members of the project team.

The risk register is included at Appendix 2T.

1.6.9 Outline Arrangements for Post Project Evaluation

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

The outline arrangements for post Project Evaluation (PPE) have been established in accordance with best practice. The trust will ensure that a thorough post-project evaluation is undertaken at key stages in the process to ensure that positive lessons can be learnt from the project. Details are in section 6.9.

1.6.10 Gateway Review Arrangements

A Health Gateway Review 3: Investment Decision was undertaken and associated report issued to the Project SRO on the 29th January 2015 (Appendix 6E). A Delivery Confidence Assessment of GREEN/ AMBER was issued by the review team, indicating that successful delivery of the project appears likely; along with recommendations for consideration/ implementation.

More information can be found in Section 6.10.

1.6.11 Contingency Plans

The Trust has a framework for Business/Service Continuity. In this instance, the Emergency Care Directorate ensures that the Trust's emergency care service contingency plans are in place for the event of any disruption.

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 the event that this project fails and the ED is not re-developed, the Trust will continue to implement and realise the benefits of its current Emergency Care action plan. The Trust will also implement the Do Minimum option; albeit limiting in achieving capacity requirements and efficiencies, it will enable a continuation of Emergency services within its existing facility.

1.7 Stakeholder Support

This Emergency Floor project is a key component of the urgent care work-stream of the Better Care Together (BCT) programme. The Overview Scrutiny Committee (OSC) has supported this case through presentation of the BCT programme.

The CCGs are supportive of the Full Business Case. In considering the OBC, they commented on three areas needing an agreed outcome:

- ▶ Activity assumptions - The FBC is based on agreed Better Care Together activity assumptions, using 2014/15 activity outturn as a baseline. The CCGs view is that this model will not materially affect the capacity beyond that already designed.
- ▶ Transitional/transformational funding – this FBC includes robust assumptions around efficiencies resulting in an affordable financial case – it does not depend on the need for transformational funding
- ▶ Inclusion of urgent care centre capacity within the plans – urgent care capacity has been included in the design. This activity is currently provided by a third party and it is not assumed in the case that UHL will take over this activity.

In consultation with the NTDA, a letter of support from the CCGs will be issued once the OBC is approved by the NTDA National Board on March 19th, 2015. This is appended to the FBC as Appendix 1A.

1.8 Recommendation

The Trust Board is recommended to approve this business case for submission to the NTDA.

Signed:

Senior Responsible Officer

Date:

Senior Responsible Owner
Project Team

2 | The Strategic Case

2.1 Introduction

This document sets out University Hospitals Leicester NHS Trust's (hereafter referred to as 'the Trust' or 'UHL') proposals to invest in a fit for purpose, modern Emergency Floor for the provision of emergency services at its Leicester Royal Infirmary (LRI) site.

In line with the national concern about the ability of emergency services to cope with demand, UHL has experienced a rise in attendances to its Emergency Department (ED). This has resulted in many patients waiting for excessive periods and performance being well below the national standard of 95%; this reflects poor quality of care for patients, increased risk of harm, increased mortality, reduced clinical effectiveness, an unacceptable delay in treatment and compromised patient safety.

In partnership with local commissioners, UHL has instigated a number of short term measures to improve performance, such as the addition of adult medical assessment beds and a new GP assessment clinic to alleviate current pressures. UHL has set out a clear vision for the future of the emergency care pathway and is undertaking a programme of change to redesign processes within the existing footprint and built environment, but there is still an issue with the design and size of the current ED and associated medical assessment areas in their entirety. They are deemed totally inadequate to cope with demand, as previously stated by the Emergency Care Intensive Support Team (ECIST) and more recently by external consultant Dr. Ian Sturgess. Appendix 2A highlights the ECIST review of the LRI ED, undertaken in March 2013.

Their findings identified that 12,600 patients were seen annually in a 6 bedded resuscitation area where 10 beds were deemed to be more appropriate; and 52,000 ambulance patients passed through a 16 cubicled majors area. Inadequate space results in patients being lined up in trolleys in the open floor space in majors and doubled up in cubicles. Size and poor adjacencies therefore inhibit the Trust's ability to smoothly move patients through the department to associated floors and medical assessment areas, resulting in delays to the patient journey and a poor patient experience. In addition, the medical assessment service (Rapid Assessment Unit (RAU) & Acute Care Bay (ACB)) is currently on the 5th floor of the Balmoral building and there is no access to X-ray or CT services within the ED, all of which further hinders an efficient patient pathway and increases risk to patients.

As a consequence, there is an urgent need for change to the physical estate currently supporting the ED and associated medical assessment areas in order to improve patient flows, address capacity issues, optimise clinical adjacencies, reduce mortality and harm, and increase staff efficiencies.

2.1.1 Clinical objectives of the project

The new build represents an opportunity to change the service currently provided to acutely unwell and injured patients presenting to UHL. The aim is to ensure the same, evidence based, high quality care is provided regardless of origin of referral; that experience and knowledge is not only pooled but utilised to its greatest benefit and to

reduce inequality and inconsistency in financial terms. Patients will be assessed on arrival and streamed according to their condition to the correct service:

- ▶ primary care
- ▶ community care
- ▶ ambulatory emergency care
- ▶ observation and short stay units (if a relatively short period of hospital inpatient care is required)
- ▶ full admission to hospital

Senior decision makers (SDMs) at the front door will work effectively across all areas. Review by SDMs, earlier in the patient journey has been shown to reduce mortality, risk of harm, overall admission rates and length of stay².

All adult GP referrals will be screened by a consultant at the GP referral unit, and where further assessment or admission is required they will be directed to the appropriate unit to be seen by a specialist team which will lead to a better patient experience and outcome.

Co-location of departments which constitute the Emergency Floor will facilitate collaborative working. For example, the location of units for frail patients in close proximity to Majors will enable rapid assessment and provide a specialist opinion at the start of the patient journey, therefore giving the patient the best opportunity to have the right care, in the right place, from the start.

The design of the floor will be clinically and stakeholder led to ensure functionality. Areas will be 'frail friendly' to accommodate the growing number of frail older people attending ED and the growing number of patients with dementia. This will include flooring, colours, lighting and signage which will aid orientation and has been proven very influential on patient experience in other units. The children's areas will also be carefully designed to reflect consistency with the children's hospital branding.

Patient Vignettes

- ▶ **Emergency Department:** *'I can't look another relative in the eye as they wait anxiously for their relative to go the ward having waited patiently in an overcrowded and busy ED. They haven't even been able to sit down. You know what they are thinking: why is it like this? There needs to be more space but they are too polite to voice their concerns. In the future, the new department will provide the staff, patients and relatives the space that they need to provide dignity and privacy.'*

Dr Jonathan Acheson, Emergency Medicine Consultant

- ▶ **Geriatrics (before front door Comprehensive Geriatric Assessment (CGA)):** *'Vera, an 80 year old lady attended the ED following a fall. A primary survey revealed no major injuries, and there was no evidence of any head trauma. The*

² Geelhgood et al, 2008

assessing doctor felt that the fall was mechanical and that there was no suggestion of any syncope. Near patient tests revealed slightly low sodium. The doctor assessing Vera felt that she was safe to go home and arranged for her daughter to collect her, and asked that they see the GP in a week to get the sodium levels looked into. Vera was taken home by her daughter feeling reassured, but had a second fall two days later; on this occasion she injured her hip; she was again taken to the ED where an x-ray revealed a hip fracture that required surgery. The surgery was successful, but post-operatively Vera developed delirium thought to be related to infection; antibiotics were given which caused some diarrhoea, but all eventually settled. After a period of convalescence in a community hospital, Vera returned home after 6 weeks, although her confidence remained low.'

Dr Emily Laithwaite, Consultant Geriatrician.

- **Geriatrics (after front door CGA, same doctor assessment):** *'The admitting nurse had completed a frailty screening tool which indicated that Vera had some cognitive impairment, polypharmacy and needed help with activities of daily living indicating that she was at high risk of readmission (ISAR score 3). Whilst the doctor was awaiting the blood test results, the nurse arranged for a review by the frailty team. The frailty nurse undertook a holistic assessment, which revealed that Vera had significant cognitive impairment (MMSE 20/30). The frailty nurse phoned Vera's daughter who confirmed what appeared to be a history of undiagnosed dementia, and also mentioned how stressed she had been over recent weeks, as she was the main carer for her mum. There had been several falls and Vera's confusion had been worsening over the last few days. The frailty nurse asked the duty geriatrician to review Vera; this led to diuretics being stopped as a likely cause of the low sodium. A referral to the falls service was made; in addition the intermediate care team were asked to see Vera at home and support her for a few weeks. The geriatricians discussed Vera's case with her GP, who was happy to monitor the sodium levels and fluid status – he also agreed to refer to the memory clinic. Vera left the department and made a gradual, but uneventful recovery at home.'*

Dr Emily Laithwaite, Consultant Geriatrician.

This business case highlights the current arrangements for provision of emergency services, projected requirements over the next 20 years and proposes a preferred option as a solution.

2.2 Structure & Content of the Document

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

- **The Strategic Case** | This sets out the strategic context and the case for change, together with the supporting investment objectives for the scheme

- ▶ **The Economic Case** | This 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** | This outlines the content and structure of the proposed deal
- ▶ **The Financial Case** | This confirms funding arrangements and affordability and explains any impact on the balance sheet of the organisation
- ▶ **The Management Case** | This demonstrates that the scheme is achievable and can be delivered successfully to cost, time and quality

Part A: The Strategic Context

2.3 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 emergency care service delivery and set the context for this business case. It also provides an overview of the driving policies and guidance documents at National, Regional and Local level.

2.4 Organisational Overview & Background

2.4.1 University Hospital Leicester NHS Trust

UHL is one of the largest teaching hospitals in the country and operates across three main sites; the Leicester Royal Infirmary, Leicester General Hospital, and the Glenfield Hospital. It is the only acute Trust serving the diverse local population of Leicester, Leicestershire and Rutland (LLR); equating to approximately 1 million residents. The majority of the population is split as follows:

- ▶ Leicester City – population 304,722
- ▶ Leicestershire County and Rutland – population 685,100

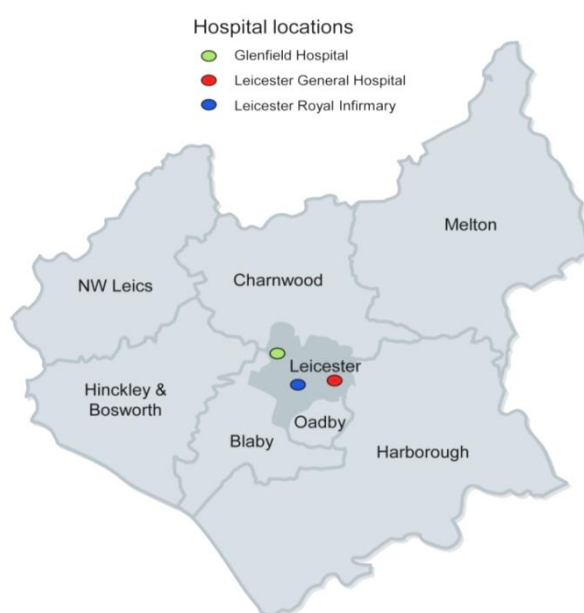


Figure 2.A University Hospitals of Leicester NHS Trust Locations

The Trust provides a wide range of services across its three main sites, which are summarised in table 2.1 below:

Table 2.1 Trust Services

Leicester Royal Infirmary		Leicester General Hospital	Glenfield Hospital
General Surgery	Vascular Surgery	Neurology	Paediatric Oncology

Leicester Royal Infirmary		Leicester General Hospital	Glenfield Hospital
Gastroenterology	Plastic Surgery	Urology	Respiratory Medicine
Trauma	Clinical Haematology	Nephrology	Adult Cardiology
Obstetrics	Dermatology	Emergency Surgery	Breast Surgery
Acute Medicine	Infectious Diseases	Obstetrics	Breast Screening
Well babies	Genetics	Sports Medicine	Orthodontics
Rheumatology	Emergency Surgery	Hepatobiliary	Restorative Dentistry
Ophthalmology	Immunology	Elective Gynaecology	Clinical Support Services
Oncology & Radiology	Stroke Medicine	Elective Orthopaedics	Cardiothoracic Surgery
Maxillofacial Surgery	Elderly Medicine	Diabetes Centre of Excellence	Paediatric Congenital & PICU
Adult and Paediatric A&E	Clinical Support Services	End Stage Renal Failure	Respiratory
Paediatric Medicine & Surgery	Central Pathology	Renal transplantation	Cardiology
Emergency Gynaecology	Genito-urinary Medicine	Clinical Support Services	CCU
Ears, Nose & Throat (ENT)			
Diabetes & Endocrinology			

2.4.2 Clinical Management

The Clinical Management is structured into seven management groups, with each group led by a Senior Consultant in the role of Director. The seven Clinical Management Groups (CMGs) are as follows:

- ▶ CHUGS – Cancer, Haematology, GI Medicine and Surgery
- ▶ ESM – Emergency and Specialist Medicine
- ▶ CSI – Clinical Support & Imaging
- ▶ ITAPS – Critical Care, Theatres, Anaesthesia, Pain and Sleep
- ▶ MSS – Musculoskeletal and Specialist Surgery
- ▶ RRC – Renal, Respiratory and Cardiac
- ▶ Women's and Children's

Each Director has a clinical background and works in a clinical environment as well as providing overall leadership for the CMG. Alongside the director the CMGs each have a Head of Nursing and a CMG General Manager.

The clinical management of the organisation is supported by the following corporate directorates:

- | | |
|---|---------------------------------------|
| ▶ Marketing & Communications | ▶ Nursing |
| ▶ Medical | ▶ Strategy including Capital projects |
| ▶ Finance & Business Services | ▶ Corporate & Legal Affairs |
| ▶ Human Resources & Learning and Organisational Development | ▶ IMT |
| ▶ Operations | ▶ Facilities Management |

2.4.3 Activity & Finance

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. 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, main sources of income are derived from Clinical Commissioning Groups, NHS England, and education and training levies. The Trust 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 2014

The Trust did not meet all of the financial and performance duties for 2013/14:

- Balancing the books: delivery of an income and expenditure deficit of £39.7m
- Managing cash: undershot the revised External Financing Limit by £1.3 million, which is permissible
- Investment in buildings, equipment and technology - invested £36.6 million in capital developments

▶ Performance against financial plan

UHL delivered a £39.7m deficit for the year against a planned surplus of £3.7m. The Annual Operating Plan (the Plan) included income of £745.3m (excluding the impact of donated assets) and expenditure of £741.6m. The principal drivers for the deficit are:

- Non-receipt of £15m strategic transitional support
- £5.3m less non-recurrent transformation funding from commissioners
- £14.3m relating to in year operating cost pressures and a deliberate investment in nurse staffing to sustain quality of care and patient safety standards

- Contractual penalties and deductions of £5.2m including a £3.4m increase in MRET deductions

The final year end position showed the following (excluding the impact of donated assets):

- Total income £770.4m actual; £25.1m over plan
- Total expenditure £809.9m actual; £68.3m over plan
- Capital expenditure £36.6m against a revised capital resource limit of £36.6m
- Closing cash balance £515k against a revised target of £500k

► Capital expenditure 2013/14

The chart below shows capital expenditure (excluding adjustments for donated assets) for 2013/14 which was £36.6m, a £11.2m (47.6per cent) increase over the 2012/13 total of £25.4m. This increase was due to the following material items of expenditure:

- £3.15m for the initial works and planning towards the Emergency Floor development at the LRI
- £2.36m for the phased reconfiguration of maternity areas at the General and LRI
- £1.67m for the creation of new theatre admissions and assessment area at the LRI
- £0.60m for new ventilation systems for cancer wards in the Osborne building to reduce infections
- £1.91m for new Combined Heat & Power (CHP) units funded by the Department of Health to generate green energy

Analysis of the Trust's capital expenditure 2013-14

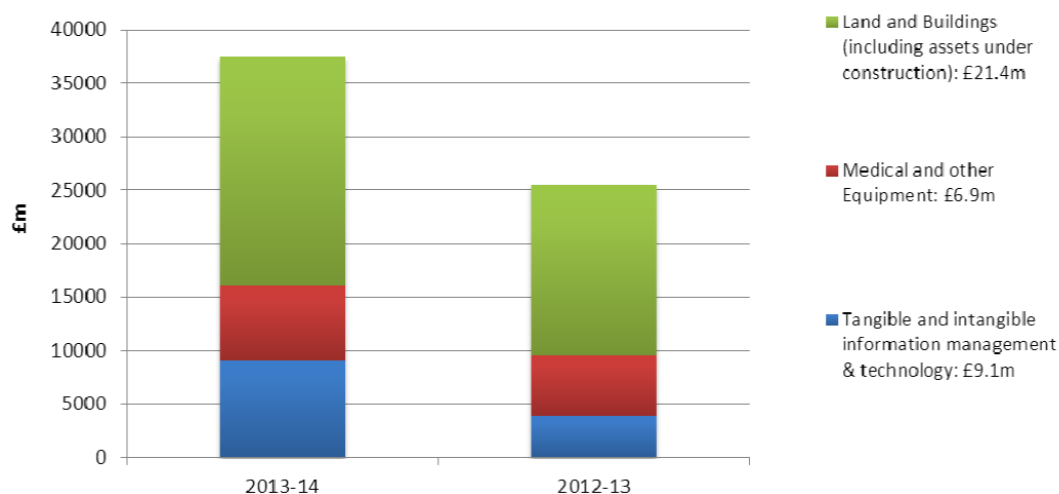


Figure 2.B Analysis of the Trust's Capital Expenditure 2013/14

► Balance sheet

The Trust planned to maintain cash holdings at more than £18m at the end of March 2013, which was achieved with an actual cash balance of £19.9m at the year-end. The debtors' position increased by £16.5m in 2012/13 and this includes several large debts outstanding with the local PCTs at the year-end, which were received in April 2013. The creditors' position has increased by £14.3m from the prior year. Managing a similar change in both debtors and creditors has also enabled the cash position to be maintained.

► 2014/15 Financial Performance

- ♦ Income and Expenditure

As at 31st January 2015 the Trust is forecasting delivery of the planned £40.7m income and expenditure deficit. Income for the main patient care activity contracts has been agreed with commissioners which removes income risk and means focus is on expenditure control. Control totals have been agreed for each CMG and Directorate and these are forecast to be delivered in order to ensure delivery of the planned deficit.

- ♦ Capital programme

Total capital expenditure as at 31st January 2015 was just under £39.9m including all outstanding commitments which, assuming all orders are delivered by the end of the financial year, equates to £7.5 of the annual plan remaining to deliver to the £46.5m annual plan. Part of the funding of the £46.5m plan is £12m external PDC funding which has been agreed by the TDA for use in 2014/15.

2.5 The Leicester Royal Infirmary Site

Leicester Royal Infirmary (LRI) provides Leicestershire's only Emergency Department (ED) and is located on the southern edge of the city centre. The site is located on the A594 through Leicester providing easy access to main bus routes that serve the wider city and is also close to the train station. A hopper bus service is also available from the train station to the site and runs at regular intervals.

The LRI is the main acute site for UHL in Leicester with a current bed provision of 965 (October 2014). Services delivered from this site include:

- Trauma
- General Surgery



Figure 2.C Leicester Royal Infirmary
Photo, Feb 2009

- ▶ Adult & Paediatric ED
- ▶ Acute Medicine
- ▶ Emergency Surgery
- ▶ Vascular Surgery
- ▶ Women's services including obstetrics & gynaecology (plus emergencies)
- ▶ Children's Services
- ▶ Central Pathology
- ▶ Infectious Disease
- ▶ Oncology & Radiotherapy

The buildings on site are varied, predominantly multi storey blocks; however there is a Grade II Listed Building. The site has expanded over time to meet increased demand and is in need of upgrading in parts.

The LRI site was condition surveyed in 2011 with 24% being categorised Condition B for the Physical Facet, denoting that it meets the current NHS standards; and 76% being classified Condition C denoting that major repair or replacement will be needed soon. However in 2013, the Condition B figure reduced to 13%, consequently the Condition C figure increased to 87%.



Figure 2.D Leicester Royal Infirmary Site Plan

2.5.1 Site Ownership

The land in the ownership of UHL at the LRI is highlighted below.

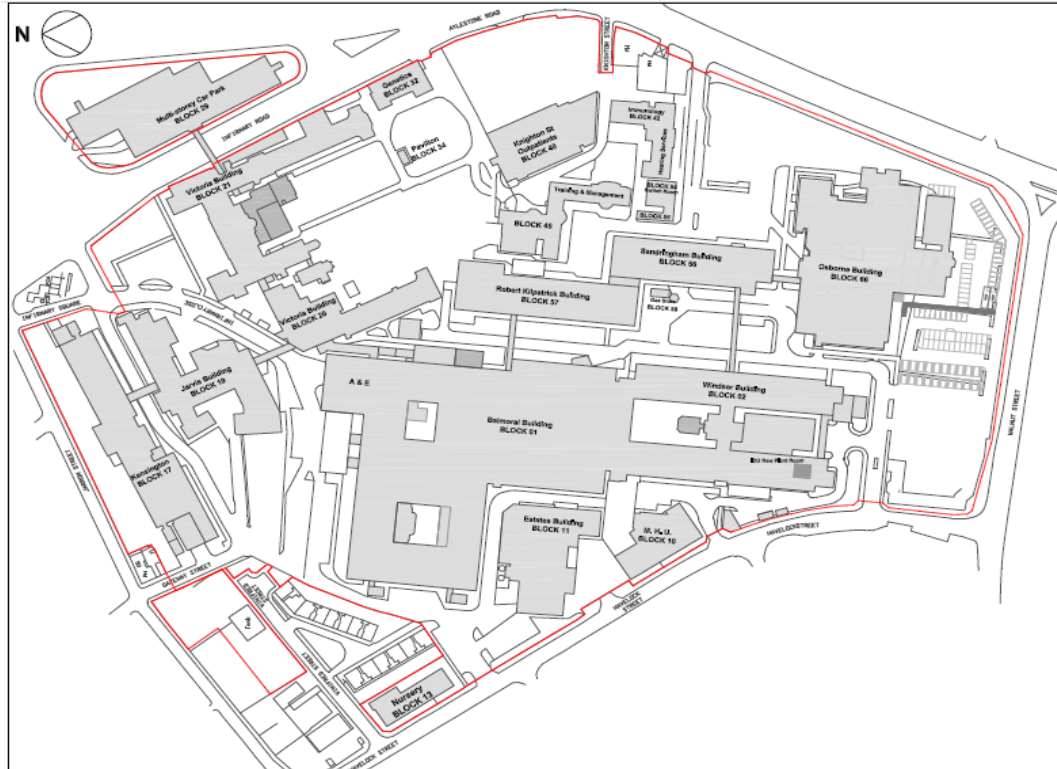


Figure 2.E UHL Land Ownership Plan: Leicester Royal Infirmary

2.6 Site Specific Constraints

The site is heavily occupied and access points for the proposed development will be constrained by the one way road system and layout of the site.

Options for construction are severely limited due to the highly developed nature of the site that is also land locked on all of its boundaries.

Any construction will take place on a fully operational site, and the sequencing and project timetable will be constrained by the need to maintain safe operations at all times.

2.7 Background to the Redevelopment Requirement for Emergency Care

Over the past 8 years there has been increasing concern within the Trust that the demands placed on emergency services exceed capacity. An indication of this problem is an increase in attendances to its ED of around 5% per annum (including the Urgent Care Centre (UCC)). This has resulted in many patients waiting for excessive periods; UHL's performance is frequently below the national standard of 95% of patients being seen, treated and discharged/ admitted in less than 4 hours. This manifests itself in reduced quality of care for patients, increased risk of harm, increased mortality, reduced clinical effectiveness, an unacceptable delay in treatment and compromised patient safety. In a similar fashion, emergency admissions to the Trust have been growing at around 3.5% per annum, creating similar pressures on medical assessment bed stock.

The Trust has updated its 5 Year Estates Strategy which aims to deliver a sustainable clinical services strategy underpinned by robust contractual and financial models which will deliver the right care in the right place; and with the best outcomes for the Trust's defined patient population. The strategy outlines a number of key capital projects to deliver its vision and the Emergency Floor development sits within this programme. In June 2013 a Strategic Outline Case for the Emergency Floor was submitted setting out the key strategic drivers and objectives for the proposed project. In November 2013 an Outline Business Case for the Emergency Floor was submitted; further work was then undertaken on this to align the case with the Better Care Together, resulting in a Developed OBC which was submitted in August 2014.

Previously, UHL has submitted its trajectory for improvement to the NHS Trust Development Authority (NTDA) which was agreed by the Trust Board as part of the Trust's Operating plan. Poor performance continues to result in significant financial penalties which impacts on the Trust's ability to deliver a financial balance.

Table 2.2 2013/14 and 2014/15 Penalties

National Penalties	13/14 FY (£)	14/15 M1-7 (£)	14/15 FOT (£)
ED 12 Hour Trolley Breaches	(6,000)	(2,000)	(3,429)
ED Wait Times (Automatic)	(294,198)	(532,200)	(912,200)
Total Automatic Penalties	(300,198)	(534,200)	(915,629)
Local Penalties	Total (£)	Total (£)	Total (£)
ED Wait Times RAP	Reinvested	(170,000)	(1,020,000)
Total Local Penalties	-	(170,000)	(1,020,000)
Total Local Penalties	(300,198)	(704,200)	(1,935,629)

National Penalties	13/14 FY (£)	14/15 M1-7 (£)	14/15 FOT (£)
Other Linked Penalties	13/14 FY (£)	14/15 M1-7 (£)	14/15 FOT (£)
Ambulance Turnaround	Reinvested	(2,015,000)	(3,454,286)
Total Automatic Penalties	-	(2,015,000)	(3,454,286)
Total Direct and Linked Penalties	£(300,198)	£(2,719,200)	£(5,389,914)

2.8 Existing Arrangements

The current ED and associated medical assessment areas were originally designed to serve annual attendances of approximately 100,000. In the full year 2013/14, there were 151,568 attendances to the ED (including Eye Casualty) and 59,218 attendances to the UCC, which is currently in a separate location. Adult emergency admissions at LRI are currently in the region of 24,000 per annum (excluding stroke and oncology which do not use the emergency department and associated facilities).

The reasons for the increased pressure on LRI's emergency services can be summarised as follows:

- ▶ The local community is an ageing population and there has been growth in the number of frail patients and those suffering from dementia, UTIs and D&V, demanding an increase in isolation facilities³.
- ▶ GP capacity in the city is constrained and the situation will be further compounded by forthcoming retirements and the gap in trainee GPs.
- ▶ UHL's emergency services supports a population of approximately 1 million, making the LRI the largest emergency services department in the country
- ▶ There is no other ED within a 25 mile radius.
- ▶ The way the out of hours service has developed across the community has increased pressure on ED.

There is an unusual double peak in daily activity between early afternoon and the evening; unlike other centres it is unique in that the second peak is higher than the first with the highest attendances between 6pm and 10pm. At any one hour of the day, there may be between 1 to 16 attendances in any area of the department. There can be at least 40 patients attending the department per hour for 3 or more hours at a time. The full year 2013/14 4 hour figure for UHL, including the Urgent Care Centre (UCC), was 88.39% of attendances. The 2014/15 year to date (at month 7) 4 hour figure was 89.58% of attendances.

³ University Hospitals of Leicester NHS Trust LRI Emergency Services Design Operational Policy 2013 (Appendix 2B)

2.8.1 Improvement Plans

In response to a consistent underachievement of the 4 hour target, new clinical roles were introduced and a new pathway commenced in November 2011 called 'Right Place, Right Time'. This initially resulted in a considerable improvement in the Trust's emergency performance. However, following a number of challenging weeks of activity (with ED attendances 5% higher and emergency admissions 7% higher in the final quarter 2012/13 compared to the same period last year) achievement of the 4 hour target deteriorated (week ending 3rd November and 10th November 2013 it was 87.8% and 90.2% respectively)⁴.

The Emergency Care Action Team (ECAT) was set up by the Trust in April 2013 in response to a number of challenges in the delivery of the emergency care pathway, resulting in an ongoing 4 hour target underachievement. ECAT has more recently been superseded by the Emergency Quality Steering Group. Through these groups a number of strategies have been implemented via the development of Action Plans (Appendix 2D) that focus on improving ED performance and patient experience via operational improvements and investing in a capital project to develop an Emergency Floor solution. Most recent work has centred on patient flow and management of the patient journey with key work-streams looking at front door processes, back door processes (discharge), frailty pathways and resolving organisational issues.

2.8.2 Process Review

It has been recognised that UHL's emergency care pathway is in need of modernising and improvement and in a drive to implement such change, Dr Ian Sturgess was recently appointed by the wider health economy. Dr Sturgess has undertaken a robust review and redesign of associated clinical process and procedures over a six month period; the objective being a radical improvement in UHL's emergency care performance.

The review has understood current patient flow and management of the patient journey in its entirety for the emergency care pathway.

Observations have been made from the perspective of the patient, being driven by the four questions patients should be able to answer soon after arrival/ admission, namely:

- ▶ **What is wrong with me or what are you trying to find out?** This is achieved by timely competent assessment by a decision making clinician who discusses and explains their findings with the patient.
- ▶ **What is going to happen now, today and tomorrow?** This is achieved by the construction of an end to end case management plan by a senior clinical decision maker in partnership with the patient who ensures that these 'inputs' occur in a timely manner.
- ▶ **What do I need to achieve to leave hospital?** This is achieved by setting individualised patient focussed clinical criteria for discharge whilst maintaining timely monitoring of the progress of the patient and ensuring early intervention if there is any negative deviation from the expected recovery pathway. The aim is to

⁴ UHL NHS Trust Emergency Care 4hour Performance Trajectory 2013 – Refer to Appendix 2C

create expectation akin to that seen with the 'enhanced recovery programme' in elective care.

- ▶ **When am I going home?** This is achieved by setting the expected date of discharge which does not include the unnecessary waits known within the system. For admitted patients, assertive board rounding and one stop ward rounds ensure that all tasks are completed on time and that as little as possible of the patient's time is wasted waiting for the necessary inputs to occur. Unnecessary waits are highlighted and managed within the team and if not these waits are escalated.

The review identified three things that are amenable to change:

- ▶ **Structure:** structural change alone rarely delivers any actual benefit
- ▶ **Process:** optimising processes focusing on what adds value to the patient is the main element of any improvement programme
- ▶ **Patterns:** relationships, behaviours, motivation, peer to peer support and challenge. This is a crucial element to deliver sustainable improvement. Top down enforced process changes will never sustain, whilst bringing about a desire to see improvement in a collegiate atmosphere drives sustainable improvement.

The actions from the review are currently being implemented through the Emergency Quality Steering Group.

Dr Ian Sturgess was involved with the detailed design process for the proposed Emergency Floor development which included confirm and challenge sessions with the clinicians from each aspect of the proposed development, around the revised models of care, schedules of accommodation and associated design.

2.8.3 Existing Workforce

Whilst there has been a successful recruitment drive at LRI for all levels of staff, the unit has historically been short-staffed and dependent on the non contracted workforce which is both less efficient and provided at a higher hourly rate. The poor environment and inefficiency in process have also been contributory factors in recruiting new staff and retaining the existing workforce. These issues are contributing factors to the worsening financial performance. Since proposals have been published relating to the new Emergency Floor Development, the Trust's ability to recruit and attract has improved with a current qualified nursing vacancy position of 12%.

2.8.4 Existing Accommodation

The space, adjacencies and quality of accommodation provided for emergency care at LRI is unsuitable and does not comply with current national guidelines. The following outlines the current status:

- ▶ **Access:** Patients currently experience a poor patient journey when accessing emergency care and UCC departments. There is a physical separation of front door access creating a booking in and assessment process within the UCC and then a further booking process at the ED when a patient is redirected there

- ▶ **Paediatrics:** UHL needs to meet the NSF for Children and Young People standards⁵ relating to separate entry, discrete space and child friendly environment. In addition UHL requires a single integrated Children's Hospital in order to meet congenital heart standards; of which this will be a part. The department currently has limited cubicles that do not meet the need of current attendances
- ▶ **Majors:** Currently there are 16 adult Majors spaces. The provision does not meet demand with the following consequential issues:
 - ♦ Patient safety is compromised with severely non-compliant space around the bed for access to the patient
 - ♦ Doubling up of cubicles with chairs to house more than one patient at a time.
 - ♦ The corridors leading out of majors are continuously blocked by patients in trolleys or chairs in an attempt to meet capacity
 - ♦ Privacy and dignity for patients is severely compromised
 - ♦ Compliance with infection control standards is compromised by limited space
 - ♦ Patient satisfaction is challenged, as is any opportunity for a sustainable enhancement of the patient experience
 - ♦ Cubicle space to accommodate incoming ambulance arrivals is insufficient, contributing to the current delays with ambulance handovers into the unit
- ▶ **Resuscitation:** There are 7 bays (the 7th bay was opened in summer 2014) and each are significantly undersized with non compliant space around the bed for service delivery
- ▶ **Minors:** These are significantly undersized compromising patient flows with the overall numbers slightly underprovided. It is important to note that 'minors' attendances at LRI 'minors' tend to be of a higher acuity (fractures/ significant soft tissue injuries) than the nearby walk in centres at Loughborough (x1) or Leicester City Centre (x2). This is due to patients with lower acuity minor injuries choosing to be seen at those centres (approx 150,000 between those three walk in centres), leaving the higher acuity work being treated at LRI ED
- ▶ **Imaging:** There is currently no dedicated emergency imaging suite; patients are required to attend the main imaging department (which is 45-60m away) reducing efficiencies and patient experience and safety
- ▶ **Mental Health:** There is a need to meet requirements relating to a dedicated area that can be secured off from the rest of the department. Section 136 requirements need consideration.
- ▶ **Emergency Decision Unit (EDU):** The number of patient spaces provided is half the number required.
- ▶ **Elderly Frail Unit (EFU):** The number of patient spaces provided is half the number required.

5

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/199952/National_Service_Framework_for_Children_Young_People_and_Maternity_Services_-_Core_Standards.pdf

- **Medical Assessment:** There is an essential need to provide a triage and assessment service adjacent to the Emergency Floor for GP referred patients; to enhance patient flows through the department, and improve working relationships, processes and clinical effectiveness. Medical assessment beds are currently provided on 5th floor of the Balmoral Building

The ED current capacity provision is summarised in table 2.3 below:

Table 2.3 Current Capacity Provision

Name	Service	Capacity
Majors	Patients with potentially serious conditions or are too unwell to be able to walk without help. Most patients in this area will have been brought in by ambulance.	16 spaces (plus 12 chairs in doubled up cubicles)
Minors and UCC	Less serious illnesses or injuries and functions similar to an NHS Walk-In Centre or Minor Injuries Unit. Patients will be assessed and treated by Emergency Nurse Practitioners, physiotherapy practitioner and ED doctors. The ED review clinic, in which patients with certain soft tissue injuries are reassessed, is held in this space 3 times per week.	21 spaces
Resuscitation	This area for specialist equipment and space for patients with life-threatening illnesses, such as heart attacks or severe breathing problems, as well as major injuries.	7 spaces
Paediatrics	Emergency services for children and young people under the age of 16. Cared for by specially trained staff. Unwell or severely injured children are treated in the main resuscitation room.	12 spaces
Ophthalmology	Eye emergency services (currently located at Level 1 Windsor).	4 spaces

2.8.5 Trust's Risk Register

There are currently three extreme/high level risks (RAG rated 25, 20 and 16 pre mitigation), and four moderate level risks (RAG rated 12, 12, 10 and 8 pre mitigation) related to the ED on the Trust's Risk Register. Details of these can be found in Appendix 2E and Appendix 2F.

2.9 Strategy

This business case, and the associated corporate and project objectives, are supported by a number of significant strategic documents and programmes. This section provides an overview of the driving policies and guidance documents at National, Regional and Local level that can provide context and support the case for change in relation to increasing capacity and providing modern, accessible emergency services. These range from national and local strategies and programmes, to national and local standards and guidance.

2.9.1 National Strategies, Programmes and Guidance

The National programmes and guiding policies are summarised below. A more detailed summary with references can be found in Appendix 2G.

Table 2.4 National Strategies, Programmes and Guidance

NATIONAL	
Health and Social Care Act 2012⁶	The government's Health and Social Care Bill outlines the future commissioning arrangements across the NHS
Department of Health Emergency Department Clinical Quality Indicators⁷	The Revisions to the NHS Operating Framework for 2010/ 11 signalled the intention to replace the 4 hour waiting time standard for EDs with more clinically relevant indicators. The clinical quality indicators for the ED have been designed to present a comprehensive and balanced view of the care, and accurately reflect the experience and safety of patients and the effectiveness of the care they receive. These indicators support patient and public expectations of high quality emergency services and allow EDs to demonstrate their ambition to deliver consistently excellent services which continuously improve.
Care Quality Commission⁸	<p>The Care Quality Commission (CQC) implemented 5 domains of quality care⁹ to assess provision of care against. These domains are defined as Safety, Effectiveness, Caring, and Responsive to people's needs and well led organisation.</p> <p>In addition the CQC have recently implemented an intelligent monitoring approach to give inspectors a clear picture of the areas of care that need to be followed up within an NHS acute trust.</p>

⁶ <http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted>

⁷ <https://www.gov.uk/government/news/accident-and-emergency-provisional-quality-indicators>

⁸ <http://www.cqc.org.uk/public/about-us/our-inspections/our-new-acute-hospital-inspection-model>

⁹ http://www.cqc.org.uk/sites/default/files/media/documents/20130503_cqc_strategy_2013_final_cm_tagged.pdf

NATIONAL

NHS Operating Framework¹⁰

“Everyone Counts: Planning for Patients 2014/15 to 2018/19 sets out the business and planning arrangements for the NHS. It sets out five high level outcome domains that the NHS should be aiming to improve (below). This business case delivers improvements against each domain:

Domain 1	Preventing people from dying prematurely
Domain 2	Enhancing quality of life for people with long-term conditions
Domain 3	Helping people to recover from episodes of ill health or following injury
Domain 4	Ensuring that people have a positive experience of care; and
Domain 5	Treating and caring for people in a safe environment; and protecting them from avoidable harm

Quality, Innovation, Productivity and Prevention (QIPP)¹¹

Within the national context of no significant growth in the NHS forecast, and a requirement to save £20bn by 2015, the Quality, Innovation, Productivity and Prevention (QIPP) is a national initiative looking to provide an integrated, systematic approach to large-scale change. Within this all NHS organisations are encouraged to make better use of existing resources and teams to deliver service improvements.

Transforming Urgent and Emergency Care Services in England: Urgent and Emergency Care Review, End of Phase 1 Report, High Quality Care For All, Now and for Future Generations, NHS England November 2013¹²

NHS England has completed phase one of their review of urgent and emergency care in England, which proposes a fundamental shift in how urgent care and emergency services are delivered. It aims to introduce two levels of hospital based emergency centre with specialist services in larger units. The report highlights the need for. It the importance of emergency services being able to provide access to the very best care for the most seriously ill and injured patients, 24 hours a day and 7 days a week. The review highlights five key elements to ensure success of implementing the reviews proposal of a two tiered emergency centres.

More information on the Phase 1 Report can be found in Section 2.9.2 below.

NHS 5 Year Forward View¹³

The purpose of the Five Year Forward View is to articulate why change is needed, what that change might look like and how it can be achieved. It describes various models of care which could be provided in the future, defining the actions required at local and national level to support delivery. These are likely to include more integrated hospital care, extended primary care, concentration of elective care,

¹⁰ <http://www.england.nhs.uk/wp-content/uploads/2013/12/5yr-strat-plann-guid-wa.pdf>

¹¹ <https://www.evidence.nhs.uk/qipp>

¹² <http://www.nhs.uk/NHSEngland/keogh-review/Documents/UECR.Ph1Report.FV.pdf>

¹³ <http://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf>

NATIONAL	
	urgent/emergency care networks, and greater use of technology.
High Quality Care for All, now and for Future Generations: Transforming Urgent and Emergency Care Services in England June 2013¹⁴	NHS England has implemented an initiative that focuses on high quality care for all, now and for future generations. This initiative focuses on how emergency services can deliver the best outcomes for patients and the community in the future
Future Hospital: Caring for Medical Patients, Royal College of Physicians (Sept 2013)¹⁵	The Royal College of Physicians established the Future Hospital Commission, an independent group tasked with identifying how hospital services can adapt to meet the needs of patients, now and in the future. Its report, Future Hospital: Caring for Medical Patients sets out their vision and recommendations.
HBN 15-01 Planning and Design Guidance: Accident and Emergency Departments (April 2013)¹⁶	HBN 15-01 provides guidance on design considerations for the built environment in ED areas. These areas include designated clinical spaces such as minors, majors, resuscitation, mental health, children's and adult spaces and other hospital locations that are key to adjacency requirements, as well as the support facilities that underpin these areas. The guidance outlines the emerging principles in planning facilities for emergency care people such as user requirements and their views, location and departmental factors.
Royal College of Paediatric and Child Health 'Standards for children and young people in emergency care settings' [third edition] 2012¹⁷	This guidance document replaces the 'Red book' guidance and sets out the minimum standard requirements for how children in emergency settings should be treated - covering areas from service design and environment to staff training and safeguarding. It also contains specific standards against which healthcare providers can be measured.
The Silver book – National Guidance 'Quality Care For Older People With Urgent and Emergency Care Needs, June 2012¹⁸	This national guidance document addresses the care for older people during the first 24 hours of an urgent care episode. It outlines the urgent care needs of older people and the competencies required to meet these needs. It states that the older person's care needs must be delivered within the first 24 hours and as part of a whole systems strategy. This document outlines current clinical guidance and suggested standards.

¹⁴ <http://www.england.nhs.uk/wp-content/uploads/2013/06/urg-emerg-care-ev-bse.pdf>

¹⁵ https://www.rcplondon.ac.uk/sites/default/files/future-hospital-commission-report_0.pdf

¹⁶ HBN 15-01 Planning and Design Guidance: Accident and Emergency Departments (April 2013)

¹⁷ www.rcpch.ac.uk/system/files/protected/page/Intercollegiate%20Emergency%20Standards%202012%20FINAL%20WEB.pdf

¹⁸ www2.le.ac.uk/departments/cardiovascularsciences/people/conroy/docs/SILVER_BOOK_FINAL.pdf

NATIONAL

Guidance for commissioning integrated URGENT & EMERGENCY CARE - A 'whole system' approach, July 2013¹⁹

This guidance document focuses on the interdependencies between services. It describes what urgent and emergency care is, why it is important to commissioners, and the need have a holistic system in terms of commissioning urgent and emergency care. It provides guidance on how to ensure integrated 24-hour urgent and emergency care focussing on consistency, quality, safety and improved patient experience. How patient pathways can be streamlined.

2.9.2 Transforming Urgent & Emergency Care Services in England: Urgent & Emergency Care Review, End of Phase 1 Report - Potential Impact on UHL

The recent publication of NHS England's (November 2013) end of Phase 1 Report relating to transforming urgent and emergency care across England is particularly relevant to this section and therefore is summarised separately in this section of the OBC.

Hospital EDs are set to be reclassified, with between 40 and 70 offering a higher level of staffing and expertise. Sir Bruce Keogh has proposed that existing Emergency Departments are designated as either "Emergency Centres" or "Major Emergency Centres" – although these titles could change.

Major Emergency Centres will be large units and will provide a range of highly specialised services delivering the very best outcomes for patients. Specifically noted is the ability to treat heart attacks and stroke patients.

In accordance with the above, UHL is likely to be designated a "Major Emergency Centre", with the LRI supporting the Emergency Floor and Glenfield Hospital providing highly specialised cardiac care. Work will need to be undertaken to understand how much additional work this may bring to LRI from neighbouring hospitals rebadged as "Emergency Centres". Since the closest ED is approximately 25 miles away, it is possible the LRI already deals with much of this work. However, this will need to be tested when there is a better understanding of how services are to be configured locally.

There is a recommendation for the ED and Urgent Care Centre to be colocated when it comes to delivering emergency services, which has been clinically modelled as part of the proposed LRI Emergency Floor development. However, there will be renewed impetus to avoid patients coming to the LRI site in the first place. On balance there are likely to be two changes to the acuity of presentations at the LRI:

- ▶ An outward shift of less acute care
- ▶ An inward shift of more complex care

¹⁹ <http://www.rcgp.org.uk/news/2013/july/-/media/Files/Policy/A-Z-policy/Urgent-emergency-care-whole-system-approach.ashx>

Work will need to be undertaken to understand the overall impact of these factors. The focus of the Health Care Planners and associated Emergency Floor Project Team has always been to provide generic flexible accommodation, which can respond to changing shifts in acuity, workload and case mix. The design solution needs to ensure that this is delivered and that facilities remain as generic as possible to deal with changing demand.

The second phase of the review will now look at the issues in more detail. It is unclear when it will report.

2.9.3 Regional Strategy/ Guidance

Locally a strategic Five Year Plan and a Strategic Outline Case for Leicester, Leicestershire and Rutland Health & Care Community has been developed and is currently going through respective Boards for approval purposes. It sets out the medium term direction for the models of health, care and support services that will need to be in place in five years time across Leicester, Leicestershire and Rutland (LLR represents the 'unit of planning') and the steps needed to realise that vision. The focus of the strategy is on those areas that have the greatest potential to deliver significant improvement in outcomes over the next five years. For UHL, the LLR Five Year Plan provides the framework within which our major business cases will be set and considered.

The strategic plan signals a move away from incremental, organisational specific improvement to a longer-term view and system wide intervention to support transformational change. In doing so, it will set out a roadmap to better outcomes for citizens.

The LLR plan and SOC provides the framework within which each statutory NHS organisation (the three CCGs, UHL, Leicestershire Partnership Trust (LPT) and NHS England) and local authority partners will develop their own plans. These will detail how they will deliver on the component parts for which they are responsible.

The plan will be adopted by the three LLR Health and Wellbeing Boards and will incorporate the respective Better Care Fund plans to improve re-ablement and service integration between primary and social care.

Recently two national documents (NHS England Five Year Forward View and the Dalton Review) were published. They lay out alternative organisational forms with the intention of driving integration and supporting/enhancing the future sustainability of provider organisations. Examples include Multispecialty Community Providers, Primary and Acute Care Systems (PACS) and a Specialised Service provider alliance. This creates a real opportunity to complement the plans in place and remove unnecessary barriers to change.

CCG Out of Hospital Strategies

There are three LLR CCGs across Leicester: all three have agreed to commission major provider contracts collaboratively. The three CCGs are:

- ▶ Leicester City
- ▶ West Leicestershire
- ▶ East Leicestershire & Rutland

When developing commissioning plans, the following goals were agreed:

- ▶ To improve health outcomes
- ▶ To improve the quality of healthcare services
- ▶ To use our resources wisely

The key transformation programmes developed were:

- ▶ Proactive Care
- ▶ Emergency and Urgent Care
- ▶ Capacity and capability in Primary Care
- ▶ Community Hospitals: The way forward

Joint Strategic Needs Assessment (JSNA)

The development of a Joint Strategic Needs Assessment (JSNA) is a statutory requirement that is placed upon the Directors of Public Health, Adult and Children's Services in all boroughs to guide the commissioning of health, well-being and social care services within local authority areas as part of the Health & Social Care Act (2012). The JSNA provides a systematic method for reviewing the health and well-being needs of a population, taking account of those groups or individuals whose needs are not being met, who are experiencing poor outcomes, or for whom special arrangements may be necessary. It aims to understand both short-term needs (three to five years) and long-term needs (five to ten years) and service requirements for patients in a given population.

The 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." This re-emphasises the importance of the JSNA as the starting point for strategy development and commissioning decisions.

Emergency Care Network

The Leicester, Leicestershire & Rutland (LLR) Emergency Care Network (ECN) role is to put in place measures to improve urgent care across LLR. Outlined below are some of the key initiatives the network is implementing:

- ▶ **Emergency Response:** specialised services in fewer hospitals (Emergency Department, specialised services such as trauma, stroke, primary angioplasty,

vascular/ emergency surgery, and emergency ambulance service). These ED centres will be operational 24/7 with full and continuous cover.

- ▶ **Urgent Care System:** a key priority for improving urgent care is to improve patient flows across the whole system with all agencies involved in delivering urgent care working effectively together. This is governed by the LLR Emergency Care Network, which is chaired by Leicester City CCG on behalf of the local health and social care community. An integrated approach utilising reworked Urgent Care criteria such as agreed range of urgent care services (cuts, stings, etc), alcohol and substance misuse, crisis resolution, (mental health and social care), see & treat and hear & treat.
- ▶ **Integrated Health & Social Care System:** consistent standards, shared protocols, timely flow, integrated workforce, training and education, care networks. Access will be determined by local demand.
- ▶ **NHS 111:** in Sept 2013 the Trust became part of the LLR-wide NHS 111 programme, a new service introduced to make it easier for patients to access local NHS healthcare services when they need medical help fast but it is not a 999 emergency. Demand on UHL's emergency services is anticipated to further increase as a result of the new NHS 111 service being introduced. The service has been launched in other areas of the country already and early indications point to increased attendance rates at EDs as a result.
- ▶ **East Midlands Ambulance Service (EMAS) Local Response:** building on a successful pilot, the CCG continues to work closely with EMAS to deflect and reduce inappropriate secondary care activity. This will be achieved by an innovative pathway to keep patients within the care of general practice, where it is safe and appropriate to do so, thereby avoiding an unnecessary journey to hospital.

2.9.4 Local Strategy

Nationally, if the NHS continues with current operating models and fails to make any further productivity improvements, it will be facing a funding gap between projected spending requirements and resources available of around £30bn by 2020/21. This challenging economic climate means that for the foreseeable future local NHS commissioners are unlikely to receive 'growth' funding in line with historical levels. Whilst health budgets are ring fenced and CCGs can expect to receive modest growth in capitation funding, local authorities are already experiencing and will continue to face significant real terms cuts to funding received from central government.

The local health and social care system is already facing financial pressures – the health economy is one of 11 “challenged” economies identified by NHS England due to broad performance challenges together with little evidence of collaborative planning and delivery to date.

Since formation in 2000, UHL has narrowly broken even every year with the exception of 2013/14 when it posted a £39.7m deficit. UHL plans for the short and medium term are to address both the financial deficit and problems with operational performance – discussed earlier - without detriment to outcomes.

Changing Population

Leicester, Leicestershire and Rutland (LLR) has a population of 1.03 million. Around one third live in the city, with two thirds in the counties. In terms of ethnicity, the City of Leicester is much more diverse than the county areas, and the ethnic diversity is increasing. Service design and delivery must take in to account this diversity; particularly in terms of access to services.

The overall population is forecast to grow by around 32,000 (3%) by 2019. This represents a rate of growth slightly lower than that for England as a whole. The City of Leicester has a younger population, with the county areas markedly older. This difference will continue to 2019, with the city having a markedly larger proportion of younger adults and a smaller proportion of older people.

The population profile of Leicester City reflects the fact that compared with the county areas, people in the city die earlier, particularly from circulatory diseases, cancers and respiratory disease. Poor health is driven by deprivation and exacerbated by lifestyle factors. Leicester is ranked 25th worst out of 326 local authority areas in England on the national Index of Deprivation (2010). Health inequalities within Leicester and compared to England as a whole have proved enduring. There are also areas of deprivation outside the city – notably certain wards of North West Leicestershire.

Though there are clear demographic differences across LLR, 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 prevalence of long term illness and disability. The number of people living with long term conditions will grow as the 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. Any plans for service improvement must respond to these challenges and make a significant contribution towards better outcomes. This Business Case recognises the challenge and enhances the future service provision targeting an integrated emergency service across the health economy.

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

For Leicester, Leicestershire and Rutland (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 Better Care Together (BCT) programme represents the biggest ever review of health and social care across Leicester, Leicestershire & Rutland (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 Leicester General Hospital site including community beds and the Diabetes Centre of Excellence.
- ▶ Financially sustainable

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

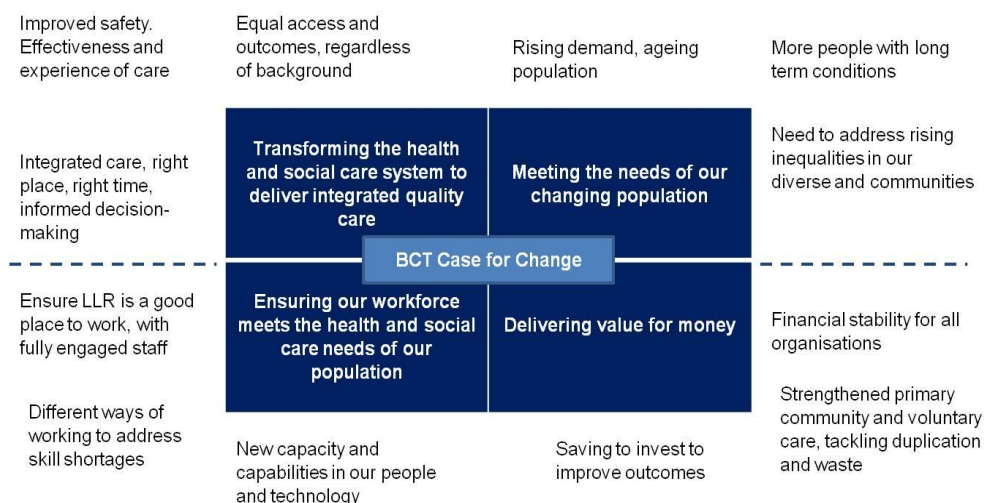


Figure 2.F Better Care Together Case for Change

LLR Health Community Estate

Over the last two and a half years the LLR Health Community has worked together to better understand the collective capacity and estate challenge facing local organisations. Informed by jointly commissioned analysis, the local health community has committed to a strategy to simplify, standardise and share the delivery of core Estates/ FM services and to work together in reducing the collective asset base, better utilise the residual space and capacity footprint and improve the quality of the physical environment.

2.9.5 Trust Vision

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 our staff and improve patient experience. The Trust calls this 'Caring at its Best'.

The Trust recognises the challenges facing the organisation and the LLR health and social care system which are the consequence of significant internal and external challenges which include:

- ▶ The financial pressures facing public sector organisations
- ▶ Rigorous regulation of healthcare providers
- ▶ Changes in the wider health and political landscape
- ▶ Focus on choice and greater patient and community involvement
- ▶ Inherent inefficiency of current configuration
- ▶ Fiscal drag of aging estate reflecting incremental development

2.9.6 Trust Strategic Objectives

Underpinning the vision and purpose are the strategic objectives of the Trust, these are:

- ▶ High quality care for all – patient safety, improve outcomes & patient experience
- ▶ Quality Commitment – save lives, reduce harm, patient centred care
- ▶ 7 day a week consultant delivered services
- ▶ Optimising clinical service adjacencies to reduce avoidable deaths
- ▶ Reducing time patients avoidably spend in hospital
- ▶ Care closer to home through better integration with Community services
- ▶ Providing high quality services in a financially affordable & sustainable way
- ▶ Understand potential impact of alliances of care at local, regional & national levels

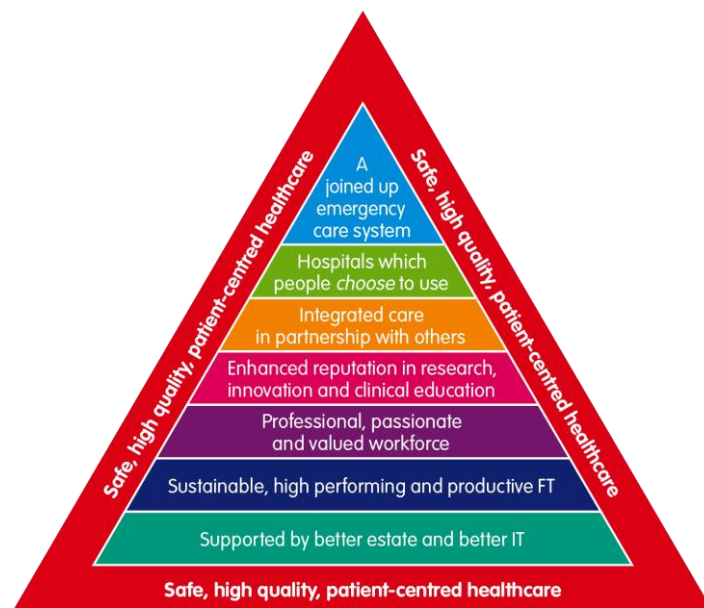


Figure 2.G Trust Strategic Objectives

By delivering the strategic vision the Trust will fulfil the purpose of providing 'Caring at its Best'.

Caring at its Best

The UHL team is made up of more than 10,000 staff providing a range of services primarily for the one million residents of Leicester, Leicestershire and Rutland. 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 work 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 the Glenfield Hospital continues to lead the way in developing new and innovative research and techniques, such as surgery with a Robotic Arm, TAVI (Trans-Catheter Aortic Valve Insertion) and the use of the suture-less valves in heart surgery. UHL also have 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 is proud to have 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 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:

- ▶ Focus on what matters most
- ▶ Treat others how we would like to be treated
- ▶ Be passionate and creative
- ▶ Deliver what is promised
- ▶ Be one team and be best when working together

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).

2.9.7 Clinical Strategy

The Trust's clinical strategy (which can be found in its entirety at Appendix 2H) is focused on delivering high-quality, patient centred services in the most appropriate setting with excellent clinical outcomes. There will be 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 Trust will implement an integrated Clinical Model for Unscheduled and Emergency Care in partnership with agencies across the Health and Social Care community - a model that will extend beyond the physical walls or buildings of the hospitals in Leicester. Patient pathways will be changed to ensure that patients are seen in the right place, at the right time by the right professional. Clinical models will be based on a mutually agreed understanding of how patients should flow through the system including who is responsible for particular aspects of a patient's care.

This clinical model will extend to out of hospital care. At one end of the spectrum, this will be supported through the development and implementation of mobile trauma expertise which will work in partnership with the Air Ambulance to fly to those most severely injured in accidents, to stabilise them and transfer them to the most appropriate centre within the 'golden hour' for their on-going treatment. In addition, the model will be supported by the development of new roles including extending roles of nursing and other professionals and offering creative recruitment strategies to meet the skill mix requirements.

A key component of the Trust's clinical strategy is the investment in a new "Emergency Floor" at the Leicester Royal Infirmary with new models of care by 2015/6 and will actively seek opportunities to become a stakeholder in the management of minor injuries units and the urgent care centre. This will create the optimum environment for patients who require care in an acute hospital setting ensuring patients get the appropriate intervention from the right clinician at the right time and in the right place. Emergency Department resources will be focused on the treatment of those patients with major illness and trauma, whilst admission for those with minor illness and injury will, where clinically appropriate, be avoided.

The Trust will actively promote access to out of hospital ambulatory care services and work in partnership to further develop pathways to prevent the need for hospital admission. Better long term condition management delivered in an integrated manner will mean that patients who have historically been admitted due to an exacerbation of their condition will be able to be safely managed in their own home under the care of their GP, in partnership with hospital services.

In particular the Trust will:

- ▶ Relocate the general surgical emergency take from the LGH to the LRI - this will improve the emergency pathway patient experience for general surgical patients and allow development of 7 day a week consultant delivered surgical triage meaning that general surgical patients will be seen and assessed more quickly by senior decision makers. Additional theatre sessions will be provided at the Leicester Royal Infirmary to accommodate the increase in demand from emergency surgical services on a single site.
- ▶ Promote centres of excellence such as the Elderly Frailty Unit (EFU) through the expansion of the Emergency Decisions Unit (EDU) and EFU at the Leicester Royal Infirmary.
- ▶ Expand imaging, pathology therapy and pharmacy services, to meet increased demand and provide a 24/7 service which minimise internal waits and improve the efficiency of the flow of emergency patients through the system.
- ▶ Continue to develop of our speciality take in the Clinical Decisions Unit (CDU) and Coronary Care Unit (CCU) at Glenfield as the "Cardiorespiratory Acute Floor" to ensure streamed patients receive timely care in the most appropriate setting.
- ▶ Relocate acute renal and transplant services to the Glenfield Hospital recognising the key interdependency between this service and cardiology
- ▶ Ensure that UHL has the right number and location of Augmented and Critical Care beds (level 1-3) with supporting staff both now and in the future to match changing patient demographics and models of care. Over the next five years, the Trust expects to treat more patients with increasingly complex conditions and this will result in an increased demand for Critical and Augmented Care beds. This is likely to require changes to the current 3-site Critical Care model to an integrated Critical Care service across 2 acute sites. This will enable UHL to retain Intensive Care training accreditation, recruit and retain staff, as well as respond to changing demands for the service.
- ▶ Ensure that University Hospitals of Leicester retains its status as a lead provider nationally and internationally recognised for its ECMO services. We will develop ECMO as a key part of an integrated advanced respiratory support service for adults with serious respiratory failure.

To facilitate these changes, where possible, the Trust will look to move our outpatient and non-complex elective services from the Leicester Royal Infirmary to a more appropriate and clinical setting which provides optimum access for the patient.

2.9.8 Trust Five Year Integrated Business Plan 2014 – 2019

The IBP specifically identifies the Emergency Floor project as an urgent development as a key plank of the health system's plan to resolve its longstanding problems with emergency care.

2.9.9 Trust's Five Year Estate Strategy June 2014 (Appendix 2I)

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. "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"²⁰. It is also an area of significant spend; the budget for Estates and FM Services across the Trust in 2013/14 was £31m.

The Trust's estate strategy identifies the need for flexibility to move property from being a constraint to an enabler for change. UHL is developing 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 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 the opportunity for significant and far reaching estate transformation will be determined.

The Transformation Plan will;

- ▶ Underpin the strategic direction
- ▶ Support the clinical strategy to improve patient pathways and improve quality of care
- ▶ Support the strategic outline case for the whole site reconfiguration
- ▶ 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 development to unlock the embedded value of Trust assets and support its ability to deliver clinical transformation and achieve QIPP efficiency savings

²⁰ Treasury Value for Money Update, 2009

Efficient estate solutions will improve frontline service provision as well as achieving improved utilisation of the estate and unlocking its embedded value. This is possible by delivering a high quality clinical and working environment for patients and staff, resulting in better levels of productivity, flexibility and patient satisfaction. This will also support cross-CMG strategies that maximise optimisation of the estate resources across UHL. This strategy is relevant to this business case; the Estates Transformation Plan will set out detailed strategies for its three main hospital sites. The Emergency Floor Project is considered key in this plan in supporting the Trust's service strategies by enhancing specialised services through consolidation of the Emergency Floor at the LRI. This project is the first to progress in a 5 year programme to reconfigure the Trust's hospitals.

Non Financial Benefits

The consolidation of the Emergency Floor at the LRI provides non financial benefits by vacating key clinical ward space on the LRI site, which ultimately realises the potential for space to be vacated at Leicester General Hospital by the transfer of services. This is integral to UHL's Five Year Strategy.

This also supports the intention of the Better Care Together strategy to make better use of the collective asset base and to provide services from the most appropriate acuity setting. This strategy is supported by the Estate Transformation Plan and is central to the health partners plans, encompasses a wide range of proposed changes and is a key priority for the local NHS over the next three years.

2.10 Summary

Key national and regional business strategies suggest that the urgent and unscheduled care environment in the NHS is changing significantly, with a number of initiatives underway to reduce ED attendances and non-elective admissions across LLR.

At the same time, the Better Care Together Programme and the integrated transformation programme are underway which identify how and where acute care is provided. LRI emergency services have an important role to play in supporting UHL and the entire health economy with the increased activity which is projected; highlighting LRI as a main emergency service provider for the region.

Part B: The Case for Change

2.11 Introduction

The purpose of this section of the business case is to outline the strategic case for change. Emergency Medicine is a secondary care specialty which provides immediate care for patients of all ages presenting with illness and injury of all severities²¹.

Utilising the BCT Case for Change Framework, the case for change for the EF has been summarised in the diagram below:

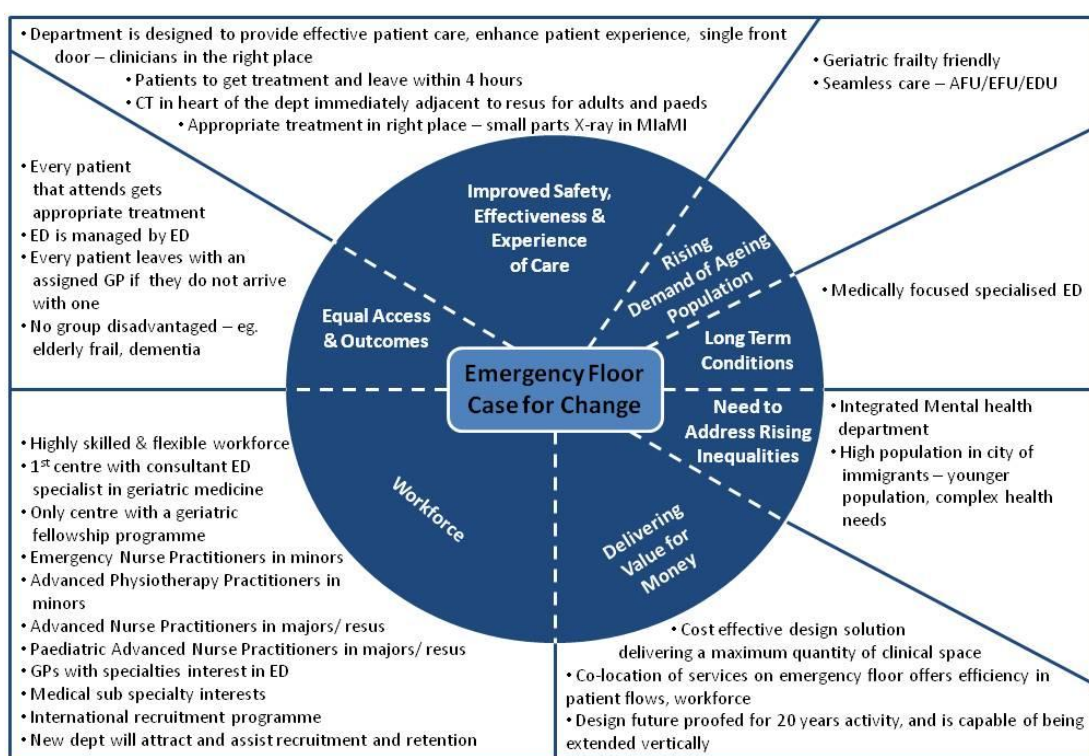


Figure 2.H Emergency Floor Case for Change

2.12 Clinical Drivers for Change

- ▶ The increasing demand for emergency services is greater than the current capacity can provide. Historic trends in growth suggest a 5% annual growth in ED activity and 3.5% annual growth in medical assessment activity
- ▶ Requirement for single floor Emergency and Medical Assessment Department that incorporates key adjacencies and presence of diagnostics and medical assessment services on the same floor. This enables implementation of the

²¹ The College of Emergency (2011, February). What is Emergency Medicine? A guide.

developed model of care for both adults and children accessing emergency services

- ▶ Changes in the local and national demographics combined with the Trust's plan to remain an Emergency Care Centre for Leicester is impacting on increased emergency care demand
- ▶ The Trust requires additional capacity to reflect NHS national guidance. The Emergency Floor project reduces the risk of compromising compliance of other standards of care such as quality, infection control, emergency and urgent care standards and commissioning standards
- ▶ The Trust needs to be in a position to be named as a 'Major Emergency Centre' as outlined in the Urgent and Emergency Care Review November 2013 – End of Phase 1 Report (Keogh)
- ▶ The requirement to address the 4 hour target and clinical handover (ambulance to trolley) transfer times will have a significant impact on Trust's financial performance if capacity issues are not resolved
- ▶ Redevelopment and increased capacity will provide opportunities for the Trust to fulfil its strategic redevelopment programme

The clinical justification for creating a new Emergency Floor is strong. Appendix 2J articulates the detailed clinical case for change as identified by lead clinicians. Key themes are summarised below:

2.12.1 Lack of a single front door²²

The Urgent Care Centre and ED are currently in different buildings separated by a large slope/ lift journey. This physical separation prevents the efficient assessment and streaming of walk in attendances at the UHL site into the most appropriate stream. Currently there is duplication of booking in and triage/ assessment leading to a fragmented patient journey, resulting in a delayed and poor patient experience.

It has also been identified by the Specialist Commissioners for Children & Families that UHL requires a "single front door" for all acutely unwell/ injured Children & Young people. The implementation of the optimal service for children is hindered, fundamentally, by current geographical space – neither the Paediatric ED nor Children's Assessment Unit (CAU) is large enough to safely manage the current volume of patients.

2.12.2 Inadequate footprint and capacity of all areas

The number of patient cubicles in each area of the department is too low, meaning that patients are often left to wait in corridors or in the middle of the department. In addition high acuity patients are often seen in lower acuity areas which are not appropriate to their needs.

- ▶ **Resuscitation:** almost hourly a patient has to be moved out of Resus before the clinically appropriate time to make way for an incoming ambulance patient; similarly some new arrivals who should be seen and stabilised in Resus are

²² Acute and emergency care: prescribing the remedy; College of Emergency Medicine

refused entry and have to go directly to Majors. There are issues moving patients from Resus onto the wards which causes further blockages in the ED. There is documented evidence of patients who have come to harm as a result of not being in Resus.

- ▶ **Majors:** often there are patients in Majors who are not in a designated patient space due to overcrowding; they are parked on trolleys in the middle of the department, directly next to each other, with no privacy or dignity, no provision for relatives, an inherent infection control risk and in breach of fire regulations.



Figure 2.1 Patients in the middle of Majors

- ▶ **Initial Assessment:** patients often have to wait in their ambulance being cared for by paramedics until a space for them in ED is available, causing significant queues in the ambulance bays. This also stops ambulances getting Resus/ Majors patients into the department. Delayed access to ED leads to patient harm as patients may deteriorate whilst waiting or not have the severity of their condition recognised and have a delayed time to critical intervention/ treatment.

2.12.3 Physical layout of the department is inefficient in terms of adjacencies

The ideal patient journey should be “assess once, investigate once, and decide once”; however the physical estate does not allow this to occur. Inherent in the current model is obvious duplication of patient and staff processes.

- ▶ Resuscitation is not located adjacent to Paediatrics, meaning that Paediatric patients have to pass through adult areas to move to/ from Resuscitation
- ▶ Diagnostic Imaging facilities are not adjacent to the ED and therefore patients needing urgent CT scans/ X-rays have to travel 45-60m at high risk if the patient deteriorates while in the Imaging Department. Transfer times are inefficient creating delayed treatment times and a significant drain on staff time while they accompany patients to and from the Imaging Department

- ▶ Resuscitation bays are laid out in such a way that the majority of them are not visible from the staff base, and there is very limited space for additional staff touch-down points in the zone
- ▶ In Majors, when patients are parked on trolleys it obstructs access to patients both in and out of cubicles and significantly slows down staff and processes. When cubicles become occupied with patients who need to remain on oxygen/ need monitoring/ are an infection control risk this often only leaves 1 or 2 cubicles remaining to see all new attendances requiring multiple patient and trolley moves
- ▶ Initial Assessment spaces are located immediately inside the main ambulance entrance, and therefore activity in this area can obstruct access directly to Majors. There are pillars in the corridor which hinder visibility from the staff base
- ▶ When children arrive in the ED, they are assessed by nursing staff, often seen by junior doctors, reviewed by senior doctors, and a decision is made to admit the patient to CAU. This process is then repeated on CAU. It is a constant factor in feedback from patients and families that their journey is replicated. It also leads to complaints of perceived limited communication between the two areas (due to the replication of processes). It prolongs the overall patient journey and could be delivered in a more efficient manner
- ▶ As there are 2 entry points into UHL for acutely unwell/ injured children and young people, similar levels and grades of staff are required in CAU and Paediatric ED. This separation of staff prevents effective working and a united patient experience
- ▶ The EDU and EFU are based in another part of the LRI - geriatricians have lost the connection with the front door which reduces ability to influence management from the front door effectively. Communication and dialogue with ED colleagues is not effective and this leads to unnecessary admissions to LRI for patients whose needs could be met in the community
- ▶ Admitting the patient to another part of the hospital builds in a further level of delay – it is more difficult to access diagnostics such as X-ray and CT scanning for example, which subsequently delays the patient's final management plan
- ▶ The multi-disciplinary team (therapists and specialist nurses) work between ED, the medical assessment service and the frailty units. This is disjointed as the units are 5 floors apart and the therapy store is in a different location all together

2.12.4 Individual patient spaces are too small and inconsistently designed

Few patient spaces have doors: none in Resus and only one bay in Majors. Many patient spaces do not have walls between them i.e. they are surrounded on three sides by a curtain or screen creating a significant infection control risk and a poor patient experience in terms of privacy and dignity. The inconsistent design of patient spaces (including size, shape, equipment location, storage provision) means that staff have to work differently in different spaces which is hugely inefficient.

- ▶ **Resuscitation:** each bay is too small, causing significant problems for multiple staff looking after the sickest patients. The design of fixed equipment is inappropriate and staff have limited access to the patient's head. The majority of bays have one wall, two dividing screens, and one curtain across the front – so there is no physical separation of sounds and smells between bays. This is

especially inappropriate as the Resus zone caters for both adults and children. For example:

- ♦ grieving family post cardiac arrest next door to a child with an asthma attack
 - ♦ violent, aggressive and verbally abusive patient under the influence of alcohol/ drugs requiring rapid tranquilisation next to a patient near end of life with their relatives
- **Majors:** cubicles are of random size and geometry, and are too small. Several are not large enough to accommodate anything other than a patient trolley; there are none with negative flow, none with en-suite facilities and only 1 with a door. In a modern, fit for purpose department all Majors cubicles should have walls separating them from adjacent cubicles and glazed doors at the front to provide audio/ visual separation, while maintaining clinical observation where required
- **Minors:** the cubicles are too small and all have different layouts due to geometry so it is not possible to equip them out uniformly or have uniform processes. This results in staff leaving cubicles constantly to get equipment and patients being transferred to the treatment room for interventions, rather than being treated in their cubicle. The spaces are cramped and patients receive a poor experience while being seen in this environment
- **Initial Assessment:** the spaces are too small to perform a patient transfer from ambulance trolley to hospital trolley; therefore these transfers have to take place in the corridor, obstructing access to Resus and Majors. Staff are unable to perform their tasks appropriately and efficiently due to a lack of space – equipment has to be stored outside of the spaces and staff have to retrieve it when required
- **EDU:** this area has restricted bed spaces and cubicles, with AFU located in another area creating poor adjacencies and poor efficiencies. Integration of elderly, demented patients (EFU is embedded within EDU), mental health patients and others in same bays is a poor clinical model
- **Psychiatric area:** this is not integrated into EDU and hence at present not used to full potential - combining areas will negate the need for extra staff
- **Patient transfers:** patient transfers from trolley to bed are done in the lift lobby owing to inadequate space creating patient dignity and privacy issues. This includes bariatric patients who require hoisting from a trolley to a bariatric bed

2.13 The Model of Care

2.13.1 Underlying Principles

The LRI Emergency & Medical Assessment Services are part of an integrated network of facilities in the area that provide assessment and treatment services for adults and children who require unplanned care; 24 hours a day, every day.

Existing primary care centres, minor injuries units, walk-in centres, and NHS 111 will remain the first point of access to the NHS for most patients with emergency problems.

The principles that underlie the Model of Care for the proposed Emergency Floor are as follows:

- ▶ High quality care delivered by a well-trained and educated workforce resourced to meet the projected case mix and workload
- ▶ A no-wait philosophy
- ▶ Effective streaming of patients to an appropriate point of care
- ▶ The 'see and treat' principle to underwrite all ED activity
- ▶ A co-ordinated 'one-stop-shop' approach for unplanned care providing equitable access to all agencies including mental health liaison teams, social services, etc
- ▶ Minimal patient moves
- ▶ Minimal steps in processes/ hand-offs
- ▶ Integration of diagnostic and medical assessment processes
- ▶ Access to senior clinical opinion from the earliest point in the patient pathway and onwards
- ▶ Flexibility of resources, both physical and human, to deal with changing workloads and case mixes
- ▶ Using the skills and expertise of professional staff flexibly, with joint training in order to transfer skills
- ▶ Protocol-led care with standardisation of patient pathways integrating the input of all care practitioners (e.g. OT, social services, etc)
- ▶ Improved junior doctor training and improved skill mix
- ▶ Optimised use of technology, including integrated IT (ICRS, PACS & EPR) and near patient testing
- ▶ Design for patient safety, privacy & dignity, including age-specific facilities for the young and the elderly – the latter encompassing a 'frail friendly' approach to design

Following agreement of the aforementioned principles, the project Steering Group and key stakeholders have developed specific models of care for both Adult and Children's emergency services to be implemented into the proposed Emergency Floor development. These will provide new ways of working, improved process flows, improved efficiencies and continued safe care.

2.13.2 Adult & Paediatric Models of Care

Appendix 2K details the models of care; however they are outlined in the following diagrams.

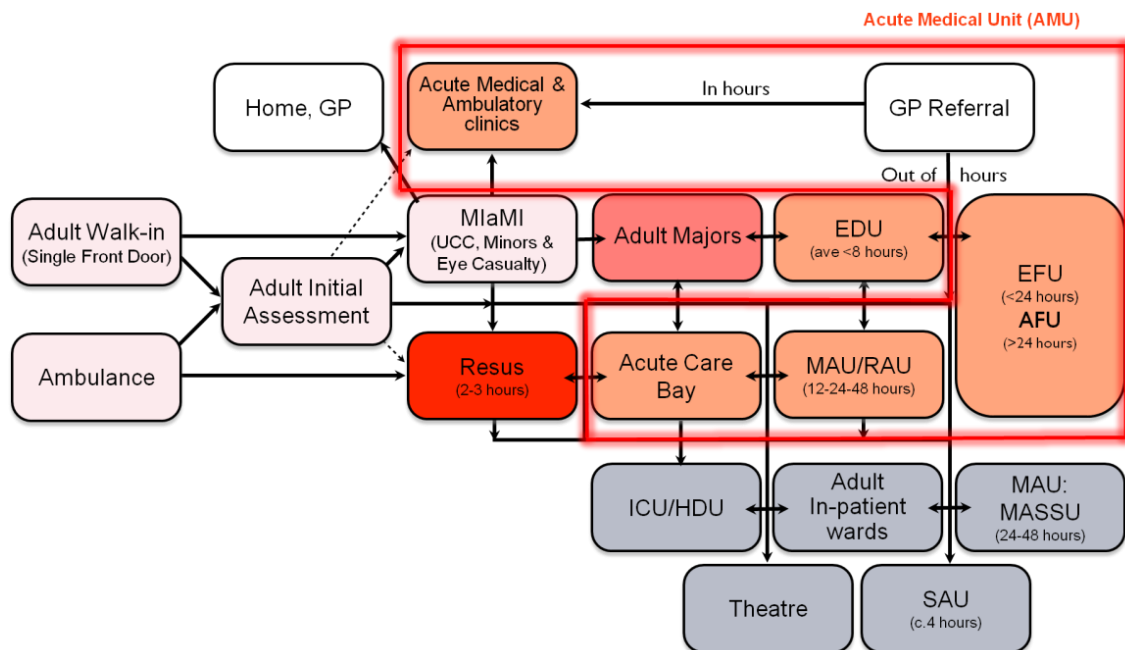


Figure 2.J Adult Model of Care

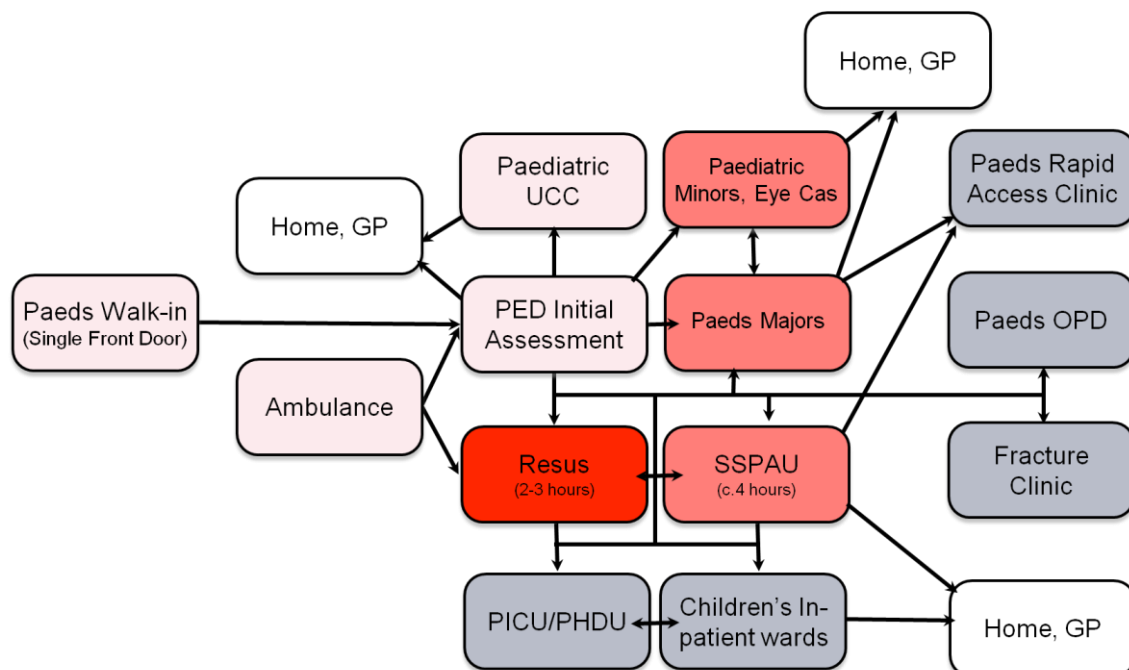


Figure 2.K Paediatric Model of Care

N.B. Paediatric Emergency Ambulatory Care takes place in Paediatric ED Minors.

The Trust is expected to provide high quality emergency care and medical assessment services to comply with regulatory standards. It also needs to ensure that its patients can receive treatment which is efficient and timely in its delivery, and its staff can work in a safe environment. In order to do so, provision of adequate cubicles/ bays for majors, mental health, minors, imaging, resus, paediatrics, medical assessment and

supporting infrastructure accommodation/ environment will be required, to support the specific service delivery requirements relating to the associated emergency and medical assessment care.

The underlying principles were agreed by the following:

- ▶ Emergency Floor Project Steering Group and associated clinical teams
- ▶ Emergency Floor Project Board
- ▶ Joint Health & Wellbeing Boards
- ▶ Commissioners

The Developed OBC was approved by the CCG Managing Directors in November 2014. This FBC will be presented to the UHL Trust Board for final approval in April 2015.

2.13.3 Clinical Operational Policies

The Operational Policies have been developed for all services and associated departments to detail how each relate to each other, so that the department is planned in a functional way.

Each Clinical Operational Policy is designed to:

- ▶ Assist all healthcare professionals involved in the provision of emergency care services
- ▶ Outline the purpose and function of the clinical services provided in the Emergency Floor and its inter-relationship with the UHL bed base
- ▶ Ensure that all staff using the facility understand the philosophy of the service and work as a team with a comprehensive understanding of patient flow upstream and downstream
- ▶ Describe the service flow into, through and out of the department
- ▶ Describe the services as they will be delivered for the future
- ▶ Describe the purpose and function of the accommodation required
- ▶ Identify adjacencies/ co-locations required for the service delivery
- ▶ Outline requirements for business continuity and interaction with the major incident plan
- ▶ Outline requirements in event of department lock down
- ▶ Outline legislative and mandatory requirements for the delivery of services

The Clinical Operational Policies for ED, Assessment Units and Support services are appended at Appendix 2L, 2M and 2N.

2.13.4 Adjacencies

An adjacency matrix has been developed to understand travel distances and times for staff, patient and goods flows (see Appendix 2O). As a consequence it is understood

that the following adjacencies need to be achieved, minimising crossover with public routes in all instances:

Within the Emergency Floor

- ▶ Resuscitation to be adjacent to Adult Majors and Paediatric Majors
- ▶ Resuscitation to be adjacent to CT scanning facilities
- ▶ Paediatric ED and Adult Majors to be adjacent to Imaging facilities (CT and X-ray)
- ▶ Paediatric ED to be adjacent to SSPAU
- ▶ MlaMIEE to be adjacent to Adult Vertical Streaming Zone
- ▶ Ease of admission from the Adult ED front door to the AMU
- ▶ Ease of admission from the Paediatric ED front door to SSPAU
- ▶ EFU adjacent AFU
- ▶ EFU adjacent EDU
- ▶ EFU/AFU close to, and preferably adjacent to, RAU
- ▶ RAU adjacent ACB
- ▶ RAU close to, and preferably adjacent to, ED Majors
- ▶ ACB close to resuscitation facilities
- ▶ All medical assessment beds to be close to the GP Referral Unit and Ambulatory Care Centre
- ▶ Access to other pathology services including haematology, biochemistry, transfusion and the blood bank. Much of this adjacency shall be met through provision of a dedicated pneumatic tube system to the hot lab within the new floor and a pneumatic tube connection to the main pathology department

External to the Emergency Floor

- ▶ Ease of access for adults to the adult critical care unit (ICU)
- ▶ Ease of access for children to the paediatric critical care unit (CICU/ HDU/ Ward 12)
- ▶ Ease of access to operating theatres
- ▶ Ease of admission to in-patient wards
- ▶ Ease of access from AMU to the short stay unit
- ▶ Direct access to shared staff support facilities (including offices & staff change)
- ▶ Access to whole-hospital clinical support services such as security, mortuary & post-mortem services, FM services (including laundry and catering)

It is essential that paediatric patients are provided with dedicated child-friendly facilities separate from adult patients. Where shared use of facilities is unavoidable (e.g. in the resuscitation area), provision must be made for child-friendly decoration and distraction (e.g. facilities to play DVDs) where possible.

The design should separate the flow of patients, visitors and goods wherever possible. This is particularly important where there is the potential for patients to be in a state of undress and/or distress.

The diagram below summarises the preferred adjacencies of the various zones across the proposed Emergency Floor.

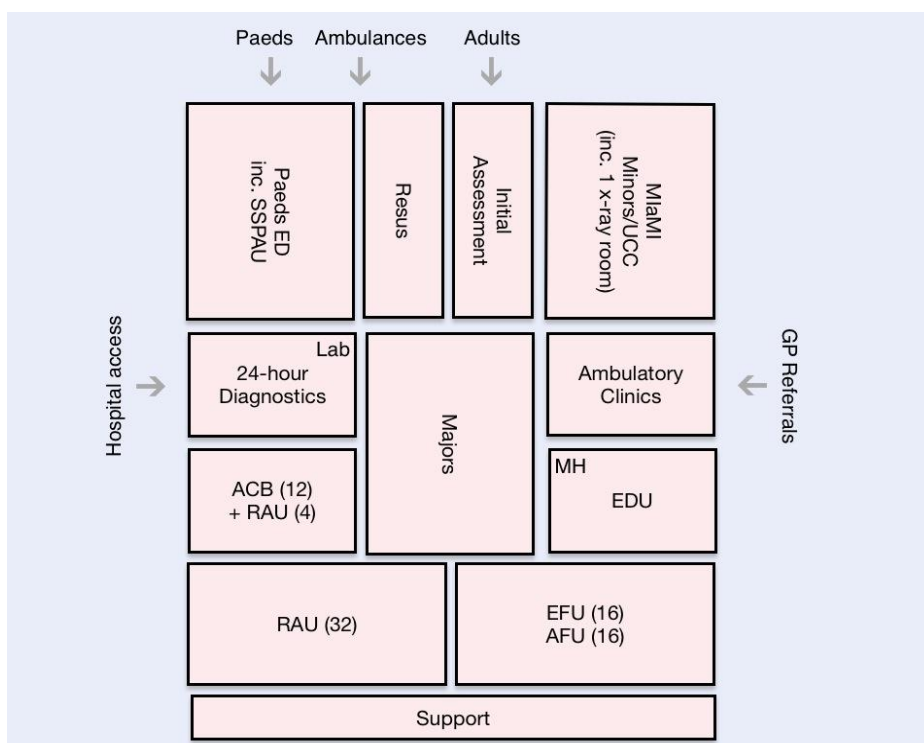


Figure 2.L Preferred Adjacencies

2.14 Current Activity & Demand

2.14.1 ED

In line with national concern about the ability of emergency services to cope with demand, UHL has experienced a rise in attendances to its emergency services; and its average performance is well below the standard 95%. This reflects poor quality of care for patients, reduced clinical effectiveness, and an unacceptable delay in treatment, increased clinical risk and compromised patient safety.

The current ED and associated medical assessment areas were originally designed to serve annual attendances of approximately 100,000. In the full year 2013/14, there were 151,568 attendances to the ED (including Eye Casualty) and 59,218 attendances to the UCC, which is currently in a separate location. 52,000 of the annual attendances are ambulance patients which are seen through a 16 cubicled majors area. Figures suggest there is an average 5-6% annual growth of emergency attendances at the Trust.

In response to a consistent underachievement of the 4 hour target, in November 2011 new clinical roles were introduced and a new pathway commenced called 'Right Place, Right Time'. This initially resulted in a considerable improvement in the Trust's ED

performance. However, following a number of challenging weeks of activity (with ED attendances 5% higher and emergency admissions 7% higher in the final quarter of 2011/12 compared to the same period the previous year) achievement of the 4 hour target deteriorated. This is a contributing factor to the worsening financial performance and impact on achieving the Trust strategic plans.

It is important to acknowledge that the Trust has implemented the model of care that focuses on a single door entry point; whereby patients present to UCC first and then are referred to the ED if necessary. Although this initially seemed to improve performance the ability to achieve the 4 hour target is limited. This is primarily due to the current lack of capacity and physical separation of the ED and UCC resulting in not a 'true' single front door.

The increasing attendance levels create increased demand for major cubicles, minor cubicles and resuscitation beds and ultimately impacts on waiting times. Inadequate space, the inadequate size of the department and the poor layout currently compromise patient flows and results in patients waiting on trolleys and queuing in the open floor space in the majors area. As well as compromising patient privacy & dignity, this inhibits the Trust's ability to move patients smoothly through the emergency pathway and creates an unnecessary infection control risk.

Recent figures in relation to the 4 hour target can be seen in tables 2.5 and 2.6 below.

Table 2.5 2013/14 Full Year 4 Hour %

	Attendances	Breaches	% < 4 hr
Emergency Department & Eye Casualty	151,568	24,402	83.90%
Urgent Care Centre	59,218	63	99.89%
Total	210,786	24,465	88.39%

Table 2.6 2014/15 Full Year to Date (as per 11/11/14) 4 hour %

	Attendances	Breaches	% < 4 hr
Emergency Department & Eye Casualty	93,266	13,697	85.31%
Urgent Care Centre	39,134	93	99.76%
Total	132,400	13,790	89.58%

2.14.2 Medical Assessment Service

The medical assessment service (RAU & ACB) is currently on the 5th floor of the Balmoral Building. This location creates inefficiencies in patient flows and use of workforce, as staff are based in two locations creating inefficiency and potential duplication. Whilst improvements in patients flows are being undertaken in the interim, it is essential in the long term that this service be provided on the same floor as the ED

with additional capacity to enhance efficiencies and meet demand. The medical assessment service provides a Rapid Assessment Unit (RAU) and Acute Care Bay (ACB) that are essential in providing an extension of care to the resuscitation, diagnostic and treatment. The service also receives referrals direct from GPs; however as there are often no beds available on the unit, these patients are diverted to the ED for treatment. This is an incorrect patient process which will be resolved in the new Emergency Floor.

Medical assessment activity has recently been growing at around 3.5% annually and the adjacency to the ED will assist in managing this growth rate by streamlining patient pathways and flows.

2.14.3 Diagnostics

The existing ED and medical assessment service have no dedicated emergency imaging suite. When ED patients require diagnostic services they are required to attend the main imaging department (45-60m away from ED, and 5 floors away from the medical assessment units), and at times require a porter and/or nurse to transport the patient to these facilities.

The requirement for a rapid, reliable diagnostic imaging service as part of the emergency patient pathway is increasing, with growing demand for the assessment of patients with trauma, stroke, and other conditions in line with national guidance. It is likely that demand for cross-sectional imaging will continue to grow and this proposal incorporates a strategy for future enlargement of capacity.

The pathway of care can be overlaid on this whole-system approach, and it has four key stages:

- ▶ Identification of the need for care (by self, by carer, by professional, by other)
- ▶ Assessment of need (by telephone, by face to face)
- ▶ Initiation of right response (emergency response, urgent response, rapid/moderate response and integrated health and social care) – outlined in more detail below
- ▶ Follow through to closure (episode complete, planned follow-up, on-going care)

A diagnostic suite that is central for all patients within the Emergency Floor will provide improved patient flows and reduce the time taken to diagnose patients. Staff efficiencies will also be enhanced by gaining back the time that staff spend each day escorting patients to the main imaging department.

Diagnostic Turnaround times are identified in Appendix 2P.

In a similar fashion, the project includes satellite pathology and pharmacy facilities in order to provide local diagnostic testing and pharmacy dispensing. It is expected that the physical proximity of these facilities will engender truly multi-disciplinary working within the emergency service, as well as improving the turnaround times for pathology tests and the dispensing of medications.

2.14.4 Increase in Demand

The overall increase in demand at the ED and associated Medical Assessment service is comprised of a number of key drivers that include:

Local Demographic Factors

- ▶ The local community is an ageing population and there has been growth in the number of frail patients and those suffering from dementia
- ▶ LRI 'minors' attendances tend to be of a higher acuity (fractures/significant soft tissue injuries) than the nearby walk in centres at Loughborough or Leicester City Centre. This is due to patients with lower acuity minor injuries choosing to be seen at these centres (approx 150,000 between the three walk in centres), leaving the higher acuity cases to be treated at LRI ED
- ▶ UHL's emergency services serves a population of approximately 1 million, making it one of the largest emergency services departments in the country
- ▶ There is no other ED within a 25 mile radius
- ▶ The local community lack confidence in the GP out of hours service which has increased pressure on EDs
- ▶ The local community has one of the highest birth rates in the country, generating additional paediatric workload

Service Development Factors

The proposed Emergency Floor project will be a significant driver in the Trust's LRI site wide reconfiguration plans. The development will immediately begin to address the site's lack of clear demarcation regarding access/ egress arrangements for staff, public, patients and blue light, by creating a 'hot' end to the LRI site.

Currently the hospital's main entrance is immediately adjacent to the ambulance and walk-in drop off point for ED, which provides very little privacy and dignity for patients and their families. There are also considerable health and safety issues regarding the number of people in the vicinity in conjunction with ambulances and other vehicles operating in and around the same area.

The proposed development will separate blue light access/ egress away from the hospital's main entrance in Balmoral. A site wide parking solution will also be developed in parallel, with an immediate aim to alleviate vehicular congestion in and around the site during peak times.

2.14.5 Future Activity Scenario

The Trust has undertaken extensive work as part of the Better Care Together (BCT) programme, projecting ED and Medical Assessment activity for the next 5 year period. This work has concluded that UHL will see a 7.8% reduction in ED attendances over the next 5 years. Work is underway across the health economy to ensure this reduction in activity from 15/16. This is being managed through the Better Care Together programme, and includes the development of ambulatory models of care, Better Care Fund programmes, admission avoidance schemes and mental health – prevention in

crisis. The reduction is not applied uniformly across all areas of the department as high acuity resus/ majors patients are not likely to be diverted from the acute hospital setting into community services. However lower acuity patients such as those with minor injuries or minor illnesses could be diverted and therefore this is where the reduction in overall activity will be achieved.

At the time of writing the Developed OBC (August 2014), the Trust's Long Term Financial Model (LTFM) was not aligned to the BCT planning assumptions, as the LTFM had been submitted to the NTDA prior to the release of the BCT information. Therefore the two activity projections were not aligned, and the NTDA agreed that the Developed OBC would reflect two activity scenarios. However, it was subsequently agreed with the NTDA and CCGs that work would be carried out in advance of the FBC to develop one model which aligned to the BCT programme.

The Trust's ED attendances have continued to increase during 2014/15 and consequently neither model proposed in the Developed OBC reflected a realistic way forward. Following discussions with the CCGs (Better Care Together Programme Stakeholders), a pragmatic approach has been agreed which uses the forecast outturn activity for 2014/15 as the baseline; and then applies the BCT assumptions over the subsequent 5 years using 2015/16 as year 1. Years 6-20 will follow demographic growth in line with the Office of National Statistics (ONS); an annual increase of 1% for ED and Clinic activity, and 1.5% annually for medical assessment activity. This is the single model reflected in this FBC which is outlined in more detail in Section 3.3. This agreement is confirmed in the letter of support for the FBC from the CCGs (Appendix 1A).

In addition to the activity projections, the Trust has also undertaken activity analysis relating to hourly arrival percentiles. The 85th percentile number of hourly arrivals across the entire unit is in the region of 40 patients per hour. On occasions this volume may recur for two or three hours at a time. For the purposes of planning the new department, the capacity requirement was based on 95th percentile hourly arrivals. However as part of the Developed OBC this requirement was revised following NTDA feedback and is now based on 85th percentile hourly arrivals. It is important to note that efficiencies are impacted by the extent that patients occupy clinical spaces – resus bays, majors cubicles, etc – purely for the purpose of waiting (e.g. waiting for diagnostics or transfer, rather than for clinical intervention). In addition to capacity it is essential that adjacency requirements are considered and the associated impact on efficiencies and patient experience. This is particularly relevant for both the medical assessment and diagnostic services.

2.15 Schedule of Accommodation to inform the Option Appraisal Process

To enable a design to be produced we first needed to establish a complete room by room Schedule of Accommodation for all proposed departments across the Emergency Floor, based on the Activity & Capacity modelling undertaken. We have developed this schedule at a series of clinical user group meetings with the clinical and associated managerial staff that make up the Project Steering Group (the design brief).

The HBN compliant iteration of the Schedule of Accommodation required a net area of 7,885.9m² and was developed to reflect the design options considered available for consideration during the option appraisal stage. The design brief was compared against the space constraints of an “island site” and the development area (red line boundary) derived a design solution of 7200m².

Evolution of the Schedule of Accommodation to inform the developed solution has been described in the Estates Annex document, which can be found at Appendix 2Q.

2.16 Design Development process

The operational policy and the model of care have been visible in influencing the design process throughout the delivery of the Emergency Floor business case, from capturing the design brief, to massing the site for the preferred option through to influencing the size and quantum of the functional content.

In capturing the design brief the project team had to consider a number of competing issues which included;

- ▶ The model of care for UHL's new Emergency Floor in particular the need to respond to the percentage of elderly and dementia care contained within the planned 200,000 attendees and the need to stream throughput prior to entering the department through the "big front door" concept
- ▶ Health Building Note 22 - accident and emergency departments 2003
- ▶ Health Building Note 15-01 - accident and emergency departments April 2013
- ▶ The work developed since the inception of NHS P21 framework in producing standard room design

The resultant design brief for the Emergency Department equated to a Gross Internal Floor Area (GIFA) of 4,500m². This provided the project team with a critical floor area against which to appraise the short listed options. The physical development constraints of the preferred option provided a design solution with a GIFA of 4,200m²; derogation against the design brief of 5%.

The model of care included within the Emergency Floor Business Case, aligned to the current and projected attendance figures, consider the concept of the “Front Door” as outlined in HBN 15-01. This facilitates greater levels of patient streaming to occur to ensure that patients enter the correct level of care and functional area to assist clinical processes.

The design further responds to support clinical operations in that the functional content can be categorised as follows;

- Fixed acuity - For example the function of the resuscitation space and the adjacency to ambulance access and imaging equipment
- Adaptable - Generic space that can flex up or down dependant on the acuity of care required, for example ensuring that we design into the generic space the ability to care for the patient either within minors or majors avoiding the need for the patient to move location
- Chair centric - The design has acknowledged that a patient does not need to be located on a bed/trolley when their care is only for a short period time, therefore, the sizing and spatial requirements of our initial assessment rooms has given consideration of this.

The estates annex for the Emergency Floor (section 6.7, scheme derogations) has considered our model of care along with the spatial standards as described in HBN 22, HBN 15-01 and from the research carried out by Principal Supply Chain Partners (PSCPs) since the inception of the P21 pilot projects in 2002 in support of our clinical operations.

From this the trust has derogated from HBN 22 recognised space standards in support of a space allowance that reflects the manner in which we intend to deliver our model of care, for example;

- Resuscitation - The design of this space is evidenced through the locating of such functions as the near patient testing and wash hand basin outside of the room, which in the HBN are assumed to be located within the room. This adds further evidence to the functionality of the space. This is shown below:

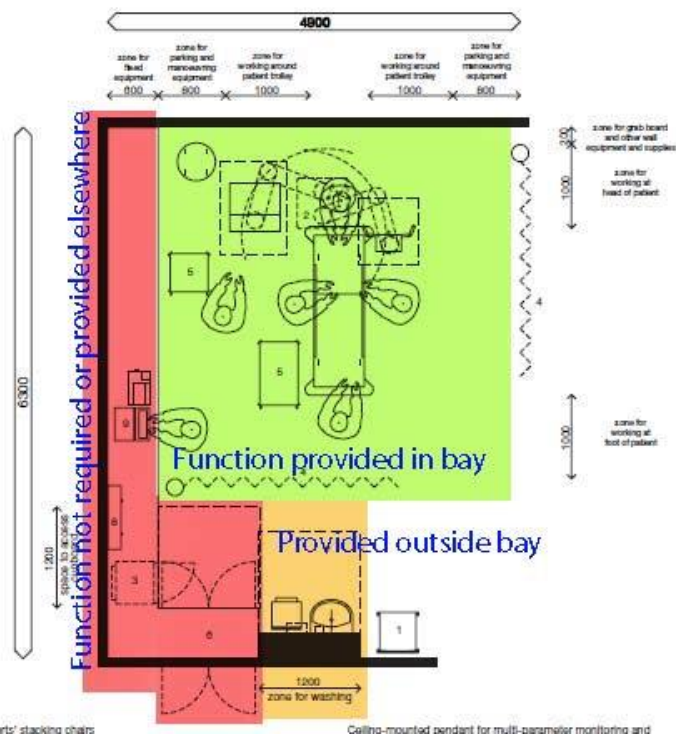


Figure 2.M Resus Functions

- Initial Assessment rooms - The space standards of this room would generally be categorised as a standard treatment room at 14m², however, the function of the space in "chair centric" form, has enabled the Project Team to evidence the design to be delivered within a 10m². Again, further evidence of functionality is evidenced once those functions that would be within the standard treatment room are identified as being carried out elsewhere:

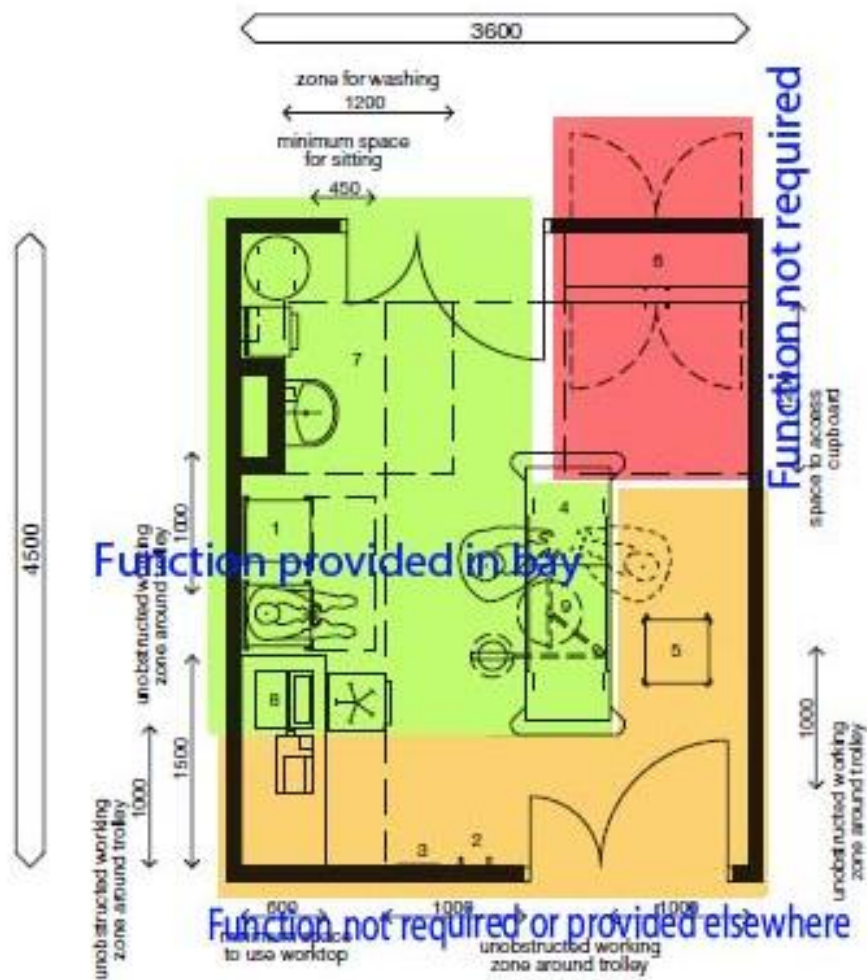


Figure 2.N Initial Assessment Functions

2.17 Quality of Care

It is important to consider Quality of Care within the framework of the five domains of quality as defined by the Care Quality Commission (CQC). These five domains are:

- Safety
- Effectiveness

- ▶ Caring
- ▶ Responsive to people's needs
- ▶ Well led at organisational, hospital and service level

Table 2.7 Quality of Care by CQC Domain

Department	Description	CQC Domain
ED Front Door	In line with current guidance (DH and CEM) there is a requirement for one front door for adult patients presenting for emergency treatment. Patients will be streamed on arrival depending on their presentation. Reception staff will direct patients to the appropriate area, requesting the support of a nurse where clinical assessment is required. A separate front door is required for paediatric cases in line with National Service Framework (NSF) for Children and Young People A dedicated ambulance entrance would also be provided.	Safety Responsive to people's needs Caring Effectiveness
Paediatrics	UHL needs to meet the NSF for Children and Young People standards relating to discrete space and child friendly environment. The department will require an increase in cubicle numbers to cater for the attendances and the proposed growth, and will incorporate a short stay facility, including the potential shift of paediatric emergency care from an adjacent hospital. A dedicated paediatric single front door will ensure a child-focused approach to emergency care for children.	Safety Responsive to people's needs Caring Effectiveness Well led at organisational, hospital and service level
Majors	Currently there are 16 majors spaces; with additional ad-hoc chairs doubling up in cubicles and the ED corridor. Activity/ capacity analysis carried out demonstrates that there should be a significant increase in numbers of cubicles in order to serve the attendances. The proposed change will provide the following: <ul style="list-style-type: none"> • Patient safety – providing compliant space around the bed for major incident and patient access • Privacy and dignity for patient • Compliance with infection control standards • Patient satisfaction and sustainable enhancement of the patient experience • Cubicle space to accommodate ambulance arrivals to the Trust, addressing the current delays with ambulance handovers into the unit 	Safety Responsive to people's needs Caring Effectiveness Well led at organisational, hospital and service level
Resuscitation	Currently there are 7 spaces, which are not sufficient to meet demand. There is a need to	Safety Responsive to people's

Department	Description	CQC Domain
	improve efficiencies and increase the capacity in line with the activity/ capacity analysis carried out.	needs Caring Effectiveness Well led at organisational, hospital and service level
EDU	There is a need to increase capacity (a combination of beds and chairs) to ensure efficiencies in flows across the emergency care pathway. This reflects a revised process flow as there currently is no EFU within the Trust and therefore some patients who are currently seen in EDU will be seen in EFU in the new build.	Safety Responsive to people's needs Caring Effectiveness Well led at organisational, hospital and service level
EFU	There is a need for an independent EFU unit (separate from EDU) which will work flexibly with the AFU to provide comprehensive geriatric assessment at the earliest point in the patient pathway. Activity/ capacity analysis has been carried out to inform the appropriate number capacity of the unit. Sufficient capacity is required to ensure efficiencies in flows across the emergency care pathway.	Safety Responsive to people's needs Caring Effectiveness Well led at organisational, hospital and service level
Minors	Current facilities prohibit staff efficiencies and cause poor patient flows.	Safety Responsive to people's needs Caring Effectiveness Well led at organisational, hospital and service level
Diagnostics	There is currently no dedicated emergency imaging suite; patients are required to attend the main imaging department. A diagnostic hub that is central for all patients within the ED will provide improved patient flows and reduce the time to diagnose patients. Staff efficiencies will also be enhanced by gaining back the time that staff spends each day escorting patients to the main imaging department.	Safety Responsive to people's needs Caring Effectiveness Well led at organisational, hospital and service level
Mental Health	There is a need to meet requirements relating to a dedicated area that can be secured off from the rest of the department. This is required in order to provide appropriate facilities for patients with Mental Health conditions to ensure their clinical needs are met. This area will be provided within the EDU, slightly remote from the main ED to ensure	Safety Responsive to people's needs Caring Effectiveness Well led at

Department	Description	CQC Domain
	minimal disruption to critically unwell patients. Consideration regarding provision of a separate entry/ exit to the department in order to enhance compliance to Section 136 requirements is essential. Activity/ capacity analysis has been carried out to inform the appropriate number capacity of the unit.	organisational, hospital and service level
Medical Assessment	There is an essential need to provide a medical assessment service adjacent to the ED and diagnostic suite to enhance patient flows through the department, with the benefit of improved working relationships, processes and clinical effectiveness for patients.	Responsive to people's needs Caring Effectiveness Well led at organisational, hospital and service level

In addition to these domains, the CQC implemented an 'Intelligent Monitoring' approach (October 2013) to assess which Trusts would be visited first in the next wave of CQC inspections. This approach is based on 150 indicators that look at a range of information including patient experience, staff experience and statistical measures of performance for example whether a Trust is hitting the ED 4 hour wait target. The Trust is then banded between 1 and 6 (Band 1 represents a higher risk than Band 6). UHL is currently banded by the CQC as Band 1 and therefore representing a high risk with ED performance viewed as a key indicator in this banding.

The CQC undertook an inspection visit in January 2014, with specific areas for inspection and ratings as follows:

- ▶ Accident & Emergency – requires improvement
- ▶ Medical Care – requires improvement
- ▶ Surgery – requires improvement
- ▶ Intensive/ Critical Care - good
- ▶ Maternity & Family Planning – requires improvement
- ▶ Services for Children & Young People - good
- ▶ End of Life Care - good
- ▶ Outpatients - good

The CQC Inspection Report for the LRI can be found at Appendix 2R. Actions have been identified as a result of the CQC visit and are being implemented across the Trust.

2.17.1 UHL Quality Commitment

UHL are committed to improving the quality and safety of care for patients. The quality commitment articulates 3 key aims:

- ▶ Provide Effective Care – Improve Patient Outcomes. “To deliver evidence based care/best practice and effective pathways and to improve clinician and patient reported outcomes”
- ▶ Improve Safety – 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 – Improve Patient Experience. “To listen and learn from patient feedback and to improve patient experience of care”

This case has been developed with a view to enhancing delivery of the quality of care with a view to:

- ▶ Improving patient pathway management reducing the clinical risk and discomfort through the emergency care pathway
- ▶ Improving the patient experience
- ▶ Enhancing Patient safety and reducing clinical risk

More information can be found in Section 2.17 - Investment Objectives.

2.17.2 Impact of Difficulties in Recruiting & Staffing

Nationally, there is a declining medical workforce specialising in the area of Emergency Medicine. Whilst there has been a successful recruitment drive at LRI for all levels of staff, the unit remains short-staffed and has to place a heavy reliance on agency staff, which is further exacerbated by the poor environment resulting in a difficulty recruiting.

Whilst ongoing operational improvements are being made to ED processes, the proposed investment and development of the Emergency Floor is the Trust's strategic response to ensure that there is sustained delivery of the emergency care. For those who have to attend hospital, care will be provided in an environment designed to deliver a better patient experience and better quality outcomes.

Future proofing of emergency care provision and changes in patient activity in line with national and regional models of care make it timely for the Trust to review and identify options for enhanced emergency care provision at the LRI, as well as the environment it is delivered in.

The Trust believes that some of the barriers to recruitment and retention of specialist ED staff are as follows:

- ▶ Inadequate working environment leading to substandard patient care and increased risk of adverse incidents. This in turn impacts on staff and presents risk of staff stress and increased sick leave
- ▶ Inadequate training facilities based on limited capacity and flexibility of emergency care infrastructure

The difficulty in recruiting is highlighted by a recent example where the Homerton University Hospital NHS Foundation Trust and UHL placed adverts for ED Consultants at the same time; the Homerton received 5 applications from suitable candidates whereas UHL received none.

A consolidated centralised unit designed to meet capacity, will contribute to attracting emergency medicine staff to the Trust. Attracting high quality senior clinicians will also further enhance the quality of training and education, creating a sustainable supply of future workforce. This not only impacts on the medical workforce but equally impacts on the nursing and support services which benefit from a highly trained and motivated medical leadership model committed to continuous professional development.

The above case for change relating to both capacity and quality manifests itself into what ultimately becomes a far from satisfactory patient experience. In July 2014 patient complaints hit an all-time high, with the receipt of 36 formal complaints as a consequence of service received from the ED. Some, but not all of these were as a result of the ED physical environment. Between May 2014 and October 2014 a total of 165 formal complaints were received regarding ED.

2.18 Investment Objectives, Key Deliverables & Benefits Criteria

In the context of the above and the Trust's Corporate objectives outlined in Section 2.9, the 'SMART' investment objectives for this project are detailed below as part of the wider Benefit's Realisation Plan, clearly outlining what the scheme is set to achieve and how.

It is important to note that agreement of the following from the Project Board, Steering Group and wider stakeholder group has informed the Qualitative Benefits Appraisal detailed in the Economic Case.

In addition, a detailed set of metrics to evaluate performance has been developed through the Emergency Quality Steering Group. This also relates to the wider Whole Health Community action plan overseen by the Urgent Case Board.

Table 2.8 Investment Objectives & Wider Benefits Realisation Plan

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
A. Business Need	1. To provide the Trust with increased capacity for emergency services to meet the demands of population growth, changing service models and improved efficiency targets.	To implement a design solution that provides a safe emergency care service that ensures capacity and known flexibility for current and known future demands of patients requiring emergency care	<ul style="list-style-type: none"> • OBC and FBC approval • Planning approval • Efficient programme management 	Provision of an Emergency Floor that incorporates the agreed SoA to meet capacity for ED and medical assessment services	<ul style="list-style-type: none"> • Trust and BCT activity and capacity analysis workings • SoA • Robust Programme plan and governance reporting mechanisms • Trust performance figures 	Emergency floor redevelopment project complete and clinically operational – summer 2017	<ul style="list-style-type: none"> • Reconfiguration Programme Board • Trust Board
	2. To increase the productivity of emergency care at LRI	Improve patient pathway management reducing the clinical risk and discomfort through the emergency care pathway	<ul style="list-style-type: none"> • Patient information • Improved patient pathway • Trust KPI targets 	<ul style="list-style-type: none"> • Clinically appropriate transfer of patients • Length of time from arrival to start of treatment for urgent HRG group • KPI targets meet 	<ul style="list-style-type: none"> • PLACE surveys and complaints register • Trust risk register 	Summer 2017	<ul style="list-style-type: none"> • CMG • Transformation Board

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
	3. To develop a centre of excellence, enhancing the Trust's reputation for training, service delivery and treatment, through the provision of a centralised service in modern accommodation.	Support and consolidate the provision of emergency floor concept at LRI	<ul style="list-style-type: none"> • Robust Design process • Engagement of stakeholders • Key internal adjacencies compliant with Strategic guidance 	<ul style="list-style-type: none"> • Reconfiguration will allow acute and emergency medicine to be co-located providing a new pathway for assessment and treatment • Clinically appropriate transfer of patients • Emergency Department centre of excellence (critical mass and centralisation of service) 	<ul style="list-style-type: none"> • Emergency Department is on one single floor • Stakeholders agree and sign off on design • Diagnostics, medical assessment and ambulatory care clinics are implemented as key adjacencies 	Commences at OBC and completed summer 2017	<ul style="list-style-type: none"> • Trust Transformation Board • Emergency Floor Project Team • CMG • PSCP
B. Strategic Fit	4. To ensure that the changing needs and expectations of a growing population are met in line with Trust clinical strategy and	Ensures that the service model of care is delivered in line with National, Trust and local health economy KPIs	<ul style="list-style-type: none"> • Compliance to best practice standards and national and local KPIs 	<ul style="list-style-type: none"> • Improved patient experience • Increased percentage of patients seen within the 4 hour target • Trust 	<ul style="list-style-type: none"> • Patient survey (PLACE) • Current quarterly performance reports 	Patient survey has to be carried out prior to implementation of new service	<ul style="list-style-type: none"> • CMG • Trust Transformation Board • Trust Board

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
	national guidance standards			Performance and Emergency care KPIs met			
		Patient safety is enhanced, and clinical risk is reduced.	<ul style="list-style-type: none"> Model of care and design enhance efficiencies in achieving 4 hour targets and reducing waiting times to treatment 	<ul style="list-style-type: none"> Reduction in clinical incidents and complaints 	<ul style="list-style-type: none"> 2012/13 quarterly performance reports Trust clinical risk register 	Summer 2017	<ul style="list-style-type: none"> CMG Trust Board
C. Quality	5. To improve the clinical effectiveness and safety of urgent and emergency care service across Leicester	Quality of care is enhanced, in terms of the model of care, and seamless pathways of care and patient flows.	<ul style="list-style-type: none"> Model of care and design enhance efficiencies in achieving 4 hour targets and reducing waiting times to treatment 	<ul style="list-style-type: none"> Acute and elective pathways reflecting best practice Increased percentage of patients in which 4 hour target is achieved Decrease % in non-urgent HRGs in A&E attendances 	<ul style="list-style-type: none"> Current data Quality indicators report Quarterly performance reports 	Summer 2017	<ul style="list-style-type: none"> CMG Trust Board

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
		The built environment enhances clinical practice that support clinical effectiveness, improved patient outcomes and patient safety	<ul style="list-style-type: none"> • Robust Design process • Engagement of stakeholders • Key internal agencies compliant with Strategic guidance 	<ul style="list-style-type: none"> • KPI figures reflect current benchmark relating to patient safety, referral, diagnosis and treatment time 	<ul style="list-style-type: none"> • PLACE surveys and complaints register • Trust risk register • Staff surveys • 2012/13 Quality indicators • 2012/14 performance reports • Staff surveys 	Summer 2017	<ul style="list-style-type: none"> • PSCP • Trust Transformation team • CMG • Capital Estates and Facilities Department
	6. To improve the clinical adjacencies of services to optimise clinical safety and reduce clinical risk.	Provides enhanced departmental relationships and clinical adjacencies that support clinical effectiveness and improved patient outcomes	<ul style="list-style-type: none"> • Key internal agencies compliant with Strategic guidance 	Centralisation of acute medicine ensuring: <ul style="list-style-type: none"> • Patient focused pathways with more rapid and increased access to specialist care • Integrated admission avoidance • Decrease in unplanned hospitalisation for chronic ambulatory conditions 	<ul style="list-style-type: none"> • 2012/13 Quality indicators • 2012/14 performance reports • Staff surveys 	Summer 2017	CMG

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
D. Sustainability, Service Modernisation, Value for Money	7. To facilitate the modernisation of services, including streamlining patient pathways and efficient working practices providing an ED that ensures adequate infrastructure and capacity for supporting services that are conducive to the needs of a modern workforce	Ensures facilities are future proofed and adaptable to the changing needs of the health economy	<ul style="list-style-type: none"> • OBC and FBC approval • Planning approval • Efficient programme management 	<ul style="list-style-type: none"> • Provision of an Emergency Floor that incorporates the agreed SoA to meet capacity for ED and medical assessment services 	<ul style="list-style-type: none"> • Trust and BCT activity and capacity analysis workings • SoA • Robust Programme plan and governance reporting mechanisms • Trust performance figures 	Summer 2017	<ul style="list-style-type: none"> • CMG • Trust Transformation Board • Capital Estates and Facilities Department
Commissioners' intentions for healthcare	8. To equip the ED to respond effectively to existing and known commissioning	Improved Privacy and dignity provisions for all patients	<ul style="list-style-type: none"> • Design provides adequate space for provision of care to patients 	<ul style="list-style-type: none"> • PLACE scores/audits will reflect positive patient feedback 	<ul style="list-style-type: none"> • PLACE surveys 	Summer 2017	<ul style="list-style-type: none"> • CMG • Trust Transformation Board • Capital Estates and Facilities

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
	requirements, as well as to respond flexibly to future changes in service direction and demand.		accessing ED and eliminates double up in cubicle and trolleys in corridor				Department
		Consolidates existing services & provides clinical expertise whilst realising the Emergency Floor concept	<ul style="list-style-type: none"> Specialist ED and medical assessment staff are based in the department providing integrated care across patient pathway 	<ul style="list-style-type: none"> Reconfiguration will allow acute and emergency medicine to be co-located providing an enhanced pathways for assessment and treatment 	<ul style="list-style-type: none"> PLACE surveys and complaints register Trust risk register 2012/13 risk register Staff surveys 2012/13 Quality indicators 2012/14 performance reports Staff surveys 	Summer 2017	<ul style="list-style-type: none"> CMG Trust Transformation Board Trust board
	9. To improve the environment and the experience of users (patients, visitors and staff) at Leicester Royal Infirmary Hospital	Improved patient access through a single front door process	<ul style="list-style-type: none"> Planning approval Efficient programme management Robust Design process Engagement of stakeholders 	<ul style="list-style-type: none"> Both Adults and Paediatrics will enter their specified ED department via single point of entry enabling efficiencies in initial 	<ul style="list-style-type: none"> PLACE surveys and complaints register Trust risk register 2012/13 risk register Staff surveys 2012/13 Quality 	Summer 2017	<ul style="list-style-type: none"> CMG Capital Estates and Facilities Department Emergency care Directorate PSCP

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
	Emergency Department		<ul style="list-style-type: none"> • Key internal adjacencies compliant with Strategic guidance 	assessment and improved patient experience	indicators <ul style="list-style-type: none"> • 2012/14 performance reports • Staff surveys 		
		Enhances patient, visitor and staff safety through the built environment	<ul style="list-style-type: none"> • OBC and FBC approval • Planning approval • Efficient programme management • Robust Design process • Engagement of stakeholders • Key internal adjacencies compliant with Strategic guidance 	<ul style="list-style-type: none"> • Patient and visitors experience will reflect positive response • Trust audit and performance reports will reflect figures in line to current guidance standards 	<ul style="list-style-type: none"> • PLACE surveys • Quality indicators • Trust incident reports 	Summer 2017	<ul style="list-style-type: none"> • CMG • Transformation Board
F. Achievability	11. To provide a solution that is aligned to the Trust DCP plan and Trust organisation as a whole.	The design solution minimises the impact of the construction process on the site and therefore	<ul style="list-style-type: none"> • Planning approval • Efficient programme management • Robust Design process • Engagement of 	<ul style="list-style-type: none"> • Post Project Evaluation highlights project is completed on time and ED services provided with 	<ul style="list-style-type: none"> • Programme plan 	Summer 2017	<ul style="list-style-type: none"> • Capital Estates and Facilities Department • Emergency care Directorate • PSCP

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
		delivery of the Trust core services	stakeholders	minimal disruption			
		Option enables future proofing of the physical Emergency Department environment aligned to DCP future expansion needs	<ul style="list-style-type: none"> • OBC and FBC approval • Planning approval • Efficient programme management • Robust Design process • Engagement of stakeholders 	<ul style="list-style-type: none"> • The redeveloped Emergency Floor option ensures future expansion 	<ul style="list-style-type: none"> • Programme plan 	Summer 2017	<ul style="list-style-type: none"> • Capital Estates and Facilities Department • PSCP • Trust Transformation Board
	12. The development will be delivered on time with minimal disruption to current service delivery	The enabling moves will facilitate the Emergency Floor programme whilst minimising delay to delivery	<ul style="list-style-type: none"> • OBC and FBC approval • Planning approval • Efficient programme management • Robust Design process 	<ul style="list-style-type: none"> • Post Project Evaluation highlights project is completed on time and ED services provided with minimal disruption 	<ul style="list-style-type: none"> • Programme plan 	Summer 2017	<ul style="list-style-type: none"> • Capital Estates and Facilities Department • Emergency care Directorate • PSCP

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
			<ul style="list-style-type: none"> Engagement of stakeholders 				
		Reduces complexity and sequence dependency of enabling moves	<ul style="list-style-type: none"> OBC and FBC approval Planning approval Efficient programme management Robust Design process Engagement of stakeholders 	<ul style="list-style-type: none"> Design process and programme plan implemented that utilised a solution with minimal complexity and dependency on enabling works/moves 	<ul style="list-style-type: none"> Programme plan 	Summer 2017	<ul style="list-style-type: none"> Capital Estates and Facilities Department Emergency care Directorate PSCP
		Maintains blue light access throughout whole build process	<ul style="list-style-type: none"> Robust ambulance protocols Compliance with ambulance protocols Ambulance transfers between sites protocols 	<ul style="list-style-type: none"> Patients get to the right place first time Ambulance service does not experience any delays in access to the ED during the build process 	<ul style="list-style-type: none"> Audit of conveyance decisions Programme plan 	Summer 2017	<ul style="list-style-type: none"> Capital Estates and Facilities Department Emergency care Directorate PSCP

Table 2.9 Metrics for Performance Management

No	Metric / KPI	Project Objective & Benefit reference	Baseline April 2014	Target April 2015	Target April 2016	Target October 2016 (Phase 1)	Target 2017 (Phase 2)
1	50% reduction in ambulance waits >30 minutes	A1, A2, A3,C6, C7, D8, E9,E10,F12	14.7%	14.7%	14.7%	10%	8.6%
2	50% reduction in ambulance waits >60 minutes	A1, A2, A3,C6, C7, D8, E9,E10,F12	4.1%	3%	3%	2%	1%
3	ED Arrival time to clinical assessment (mins)	A1, A2,A3,B4,C6,D8,	18mins	18mins	17mins	15mins	15mins
4	90% Patients triaged within 20 minutes (ED)	A1, A2,A3,B4,C6,D8,	38%	43%	45%	80%	90%
5	No more than 1 hour wait to be seen by a Doctor (70% seen within 1 hour)	A1,A2,A3,A4,C6,D8	58%	65%	65%	70%	70%
6	ED: Average time arrival to bed request	A1,A2,A3,C6,C7,C9,C10	184mins	180mins	180mins	170mins	165mins
7	ED: Average time from bed request to allocation	A1,A2,A3,C6,C7,C9,C10	100mins	100mins	30mins	45mins (impact of	15mins

No	Metric / KPI	Project Objective & Benefit reference	Baseline April 2014	Target April 2015	Target April 2016	Target October 2016 (Phase 1)	Target 2017 (Phase 2)
	(mins)					transition between phases 1 & 2)	
8	Admissions via GP/BB direct to assessment unit (AMU)	A1,A2,A3,B4,C6,C7,D8,D9	18%	50%	60%	60%	90%
9	AMU: % Senior review within 6 hours	A2,A3,C6,E10	6%	80%	90%	90%	98%
10	UHL Weekly ranking against other Trusts	A3	138	90	75	<50	<20
11	Achievement against 95% national target	A1,A2,A3,B4,C6,C7,D8,E9,E10,F11				95%	>95%
12	Staff turnover rates	A3	11.40%	15.29%	14%	12.00	12.5%
13	Staff sickness absence rates	A3	3.9%	3.5%	3.50%	3.50%	3.50%
14	Staff family and friends test – Question 1 “How likely are you to	A1,A2,A3,B4,C6,C7,E9,E10,		59.9% 40.1%			

No	Metric / KPI	Project Objective & Benefit reference	Baseline April 2014	Target April 2015	Target April 2016	Target October 2016 (Phase 1)	Target 2017 (Phase 2)
	recommend this organisation to friends and family if they needed care or treatment?"						
15	Staff family and friends test – Question 2“How likely are you to recommend this organisation to friends and family as a place to work?”	A1,A2,A3,B4,C6,C7,E9,E10,		54.5% 45.5%			

2.19 Benefits Realisation

Work has been undertaken by the Trust to identify and quantify the clinical benefits resulting from this project. These include:

- ▶ **Strategic Fit:** in keeping with the longer term site reconfiguration proposals, acting as an enabler to other service moves and relocation. Enables the co-location of services that supports evidence based practice, innovation in developing new models of care and provides a seamless service to adults and children. Supports the longer term vision for all children's services to be located on the LRI site.
- ▶ **Clinical Quality and Patient Safety:** early access to senior decision makers, immediate diagnostic support and visibility of patients will significantly enhance patient safety and improve quality of care
- ▶ **Patient Outcomes:** reduced harm, improved morbidity and mortality and opportunities for improved clinical outcome through early intervention supported by a no delays environment
- ▶ **Patient Experience:** responsive no delays system in a dedicated bespoke environment will reduce complaints, increase compliments and improve patient experience. The environment will enhance privacy and dignity and will reflect the needs of children and their families. The adult environments will be dementia and frail friendly.
- ▶ **Clinical Staff & Resources:** improved patient flow, proximity of services and an environment tailored to meet demand will increase staff satisfaction, improve morale and mitigate stress. Reduced sickness absence levels with higher rates of recruitment and retention as the emergency floor be recommended as a place to come and work. The floor will enable more effective ways of working and reduce duplication of work and facilitate collaborative interdisciplinary working.

2.20 Design Quality & Philosophy

The key objective is to provide a facility where clinical teams can provide a rapid and comprehensive assessment, diagnostic and early treatment service. To reflect the philosophy of service, a number of strategic design principles will apply:

- ▶ Minimisation of patient entrances to create a focus for initial clinical assessment and to maximise departmental security
- ▶ Notwithstanding the above, there should be rapid access for patients to the correct part of the service (e.g. avoiding sick patients having to pass through layers of reception, getting pre-assessed patients directly to a bed/service)
- ▶ Removal of bottlenecks and opportunities to wait
- ▶ Simple and visible waiting areas and circulation combined with IT solutions to keep patients informed of their wait/ progress in real time
- ▶ Careful balancing of the need for privacy and visibility

- ▶ Separation of patient groups where appropriate (e.g. majors from minors)
- ▶ Separate staff circulation routes discrete from main public waiting areas
- ▶ An environment that facilitates communication amongst the wider multi-disciplinary team, including the rapid response teams, therapists and social services staff who will be focused on preventing avoidable admissions
- ▶ Standardisation of the design of rooms within individual streams where possible so that a wide range of practitioners can use any room for patient examination and treatment. A standardised design will also ensure that all staff are familiar with the location of equipment and facilities in any space
- ▶ Plain film, ultrasound and CT diagnostic imaging facilities integrated into the emergency floor
- ▶ Pathology testing facilities integrated into the emergency floor
- ▶ Separation of treatment, waiting and appropriate environments for children
- ▶ Appropriate environments for patients with psychiatric conditions
- ▶ Secure staff support zone capable of controlled access from within the emergency floor and from elsewhere in the hospital

The design will reflect the importance of flexibility and quality, and will be informed by the latest design guidance where appropriate. It will be a contemporary building, respectful of locally sensitive areas. The building will not affect statutory and non-statutory designated sites. The preferred option design solution will enhance and improve on overall energy efficiencies, contributing to the NHS sustainability targets to reduce 2007 carbon footprint by 10%.

The following patient requirements should be met:

- ▶ Patients can be assessed and treated according to acuity of condition in a range of flexible clinical spaces
- ▶ There shall be high levels of patient privacy, notwithstanding the need for staff supervision. Patients shall in most instances be assessed and treated in individual rooms
- ▶ There must be sufficient space in assessment and treatment spaces for up to five staff to attend a patient on a trolley along with dressings trolleys and other equipment in position
- ▶ A patient/ nurse call system is essential through patient areas in the ED
- ▶ There must be adequate design and operational measures to prevent and contain the spread of infection. Clinical hand wash basins will be required in all assessment & treatment spaces, and a proportion of patient rooms shall have en-suite sanitary facilities to enable the isolation of patients

Throughout the Emergency Floor there should be appropriate facilities to separate patients with suspected infection from those who have not. In the Majors area of the ED there are 2 barrier nursing rooms with en-suite facilities to enable this separation. In the Resus area there are 2 barrier nursing rooms for the separation of patients who are

too unwell to be treated in Majors. Within the longer stay areas, there is the following provision of single rooms with en-suites, where patients can be separated:

- ▶ EDU: 2 single room with en-suite facilities
- ▶ AFU: 4 single rooms with en-suite facilities
- ▶ RAU: 8 single rooms with en-suite facilities
- ▶ ACB: 6 single rooms with en-suite facilities

Shared sanitary facilities are designed to comply with both the consumerism standards regarding single-sex use as well as with relevant HBNS.

Clinical and nursing staff require:

- ▶ Sufficient space to examine and treat patients in privacy
- ▶ Facilities for isolating patients whose condition demands this
- ▶ Arrangements which discourage the outbreak of infection and limit its spread
- ▶ Ease of access to read and update patients' electronic notes and reports and privacy to discuss them
- ▶ Ability to teach without disturbing either staff or patients
- ▶ Space to talk to relatives in privacy
- ▶ Easy supervision of and access to patients especially for higher acuity patients
- ▶ Facilities for locating and summoning other staff quickly in an emergency
- ▶ Access to shared multi-disciplinary meeting space
- ▶ Space for resuscitation and monitoring equipment, the former located at or near the staff bases
- ▶ Space in WCs, bathrooms and showers to attend to a patient in a wheelchair, and to manoeuvre a mobile patient hoist
- ▶ Space in treatment rooms to attend to a patient on a trolley/ bed
- ▶ Short walking distances between patient areas and the main ancillary rooms
- ▶ Space for changing into uniform, hanging coats & storing handbags/ personal property; dedicated sanitary facilities; rest area with beverage preparation facilities

Visitors to the ED may be distressed and may become violent or abusive. Designers have considered means by which the design can contribute to a safer environment for all. This included consideration of:

- ▶ The detailed design of items such as reception counters to reduce the potential for visitors and patients to harm staff
- ▶ The effect of ambient lighting systems to lower stress levels in reception and waiting areas
- ▶ The provision of secondary exits for staff to retire from abusive or violent situations to a place of safety

- ▶ Facilities to summon security to individual staff member location in an emergency
- ▶ The provision of panic alarm systems and the relationship of other security measures to the wider Trust security policy

2.20.1 Future Flexibility

A key principle of the design of the new Emergency Floor is flexibility of space. This is important to allow the floor to respond to variations in patient flow, acuity & type (e.g. age) both on a day to day basis and into the future. A core component of the design solution will be the standardisation of the design of rooms within individual streams where possible, so that a wide range of practitioners can use any room for patient examination and treatment. A standardised design will also ensure that all staff are familiar with the location of equipment and facilities in any space.

Within the new build ED, the Majors department has been designed as two identical halves which allows half to be closed at quieter times. It also helps mitigate the risk associated with a lack of outflow from the department; as if this were to occur half of Majors could flex and become a temporary short stay assessment area. The bays are large enough for ED trolleys to be replaced with beds, the doors at the front of each bay ensure adherence to same sex compliance and infection prevention measures, and there are sufficient WC facilities. The MIaMIEE area is also a flexible space as the Minor Injuries and Minor Illness rooms are identical in design & content meaning the services can flex up and down to respond to activity levels. The MIaMIEE has also been designed to run as a completely independent ED e.g. in response to a flu epidemic the MIaMI could become the “flu ED”, thereby reducing infection risks to “non-flu” patients attending the main ED.

Within the Medical and Geriatric Assessment areas, all beds except the Acute Care Bay have been planned as generic spaces with identical provision of medical gases, examination lighting etc. While the design recognises the need to have certain distinct areas, it also responds to the requirement for flexing up and down in response to activity levels e.g. the Acute Frailty Unit and Emergency Frailty Unit work closely together with co-management of patients by both ED and Geriatric Medicine staff; while catering for different levels of patient acuity, with all AFU patients in beds highly likely to be admitted, and EFU patients in chairs or beds highly likely to be discharged.

In addition the structural design is such that it can take an additional floor at a later stage, in line with the Trust’s Development Control Plan.

2.20.2 Design Quality Indicator Review

DQI considers the following three specific qualities:

- ▶ Functionality
- ▶ Build Quality
- ▶ Impact

It is deemed that if all three of these qualities are equal then there is an opportunity for design excellence.

An Independent Accredited Facilitator undertook a Stage 2 DQI Evaluation on Wednesday 2nd July 2014. The report provides details of the findings and makes recommendations for further improvement. The report can be found at Appendix 2S.

The Stage 3 DQI evaluation is currently being arranged.

2.20.3 Due Regard

A due regard assessment has been undertaken to ensure no-one is discriminated against in the new facility. Details can be found in the Estates Annex which is included at Appendix 2Q.

2.21 Potential Business Scope & Key Service Requirements

The Trust is seeking to resolve the shortcomings of its existing ED facility through the development of a purpose-built facility for the provision of emergency care. The lack of physical space and capacity in both clinical and non-clinical areas within the ED is affecting its performance in meeting the 4 hour standard and ambulance turnaround times, as well as the overall patient experience currently received. It also creates a significant safety risk when Majors and Resuscitation facilities are over capacity.

The current ED facility also lacks flexibility to accommodate any further increases in activity due either to population growth and/ or reconfiguration, which is reflected within the Trust's 5 Year Estate Strategy.

The following key service requirements have been identified to meet the current business needs:

- ▶ Increased capacity to meet current and future emergency service related activity
- ▶ Enhanced clinical adjacencies to facilitate better access to related core emergency care facilities and improved process flows
- ▶ Improved access to diagnostics (Imaging, Pathology & Pharmacy)
- ▶ Improved environment
- ▶ Improved retention and recruitment
- ▶ Alignment with the Trust's redevelopment strategic plans

The main components of the required scope for the new Emergency Floor are:

- | | |
|---|-------------------|
| ▶ Blue Light Ambulance Entrance | ▶ Adult EDU |
| ▶ Adult Ambulance Entrance | ▶ Adult EFU/AFU |
| ▶ Paediatric Ambulance Entrance | ▶ Adult RAU |
| ▶ Adult Reception/ Main Waiting Area | ▶ Adult ACB |
| ▶ Paediatric Reception/ Main Waiting Area | ▶ Paediatric SSAU |

- ▶ Adult & Paediatric Urgent Care Centres
- ▶ Resuscitation (shared Adult & Paediatrics)
- ▶ Adult & Paediatric Majors
- ▶ Adult & Paediatric Minors
- ▶ Adult & Paediatric Eye Casualty
- ▶ Adult & Paediatric Emergency ENT
- ▶ Adult & Paediatric Procedure Rooms & Plaster Facilities
- ▶ Diagnostic Imaging
- ▶ Pathology Hot Lab
- ▶ Pharmacy
- ▶ Simulation facilities
- ▶ Separate clean/ dirty utilities
- ▶ Supplies/ storage areas
- ▶ Disposal holds
- ▶ Seminar rooms and offices
- ▶ Staff facilities

As the LRI consolidates its role as a centre for emergency care across LLR, associated schemes such as an onsite Helipad are being considered, however the provision is currently met via the use of Nelson Mandela Park opposite the site.

2.22 Main Risks

Table 2.10 Main Risks and Counter-Measures

Risk	Mitigation
NTDA, CCG's, OSC's, Better Care Together Board and other key external stakeholders not supportive of the project.	Full engagement with all key stakeholders progressed from SOC stage onwards, with full involvement anticipated throughout the business case process. Regular routes for communication and update are in place via monthly executive forums.
NTDA approval and/ or funding not forthcoming.	Full liaison and engagement has been and continues to be undertaken, with the NTDA for approval of key milestones. The Do Minimum option would be pursued in the event of a lack of capital funding.
Planning & Highways – planning approval conditions	While planning approval has been granted, a number of conditions were imposed by Leicester City Council. If the project was unable to adhere to these conditions the Planning Approval would become invalid, with associated risk to the project.
Extended project programme - will result if an associated programme of enabling works are not progressed prior to FBC approval.	Trust Board have agreed to progress with required programme of enabling works at risk.
Delay - due to unforeseen demolition and construction risks.	Surveys carried out for M&E and statutory compliance related areas to identify potential issues in advance.
Service Disruption – The project impacts negatively on provision of	This risk is mitigated by an assessment of the programme and developing a project plan that limits

Risk	Mitigation
emergency care services during implementation – significantly affecting patient outcomes and surgical services.	disruption. Communication with design and project management team is essential throughout.

A pro-active risk management regime (detailed in Section 6.8) will be employed throughout the project. It is essential on any project (in particular one of this size and complexity) that the risk management process involves all key members of the project team including:

- ▶ Trust Estates
- ▶ Trust FM
- ▶ Project Consultant Team
- ▶ Contractor
- ▶ Designers

The risk register, which can be found at Appendix 2T, has been developed through a workshop environment involving the above parties. For each identified risk the following are noted:

- ▶ Reference
- ▶ Category
- ▶ Risk and associated likely impact
- ▶ Probability and impact factors and associated overall risk rating
- ▶ Mitigation measures
- ▶ Cost and time impacts*
- ▶ Risk owner and / or manager
- ▶ Action Date

The register is reviewed regularly focusing on the high impact risks and those with pending Action Dates. Over time the allocation of the individual risks (Trust or PSCP) will also be reviewed to ensure risks are placed with the party best placed to deal with them.

2.23 Constraints & Dependencies

The constraints and dependencies relevant to the project are:

- ▶ **Better Care Together Programme:** the whole health economy has a strategy for improving Emergency Processes which this project must align to. This will include changing models of care to encourage fewer attendances to the Emergency Department

- ▶ **Budget:** the Trust has a limited capital budget, and must seek approval from the NTDA for any expenditure of over £5m of Treasury capital (i.e. excluding funds from donations).
- ▶ **Workforce:** the Trust has a strategic workforce plan as part of its 5 year Integrated Business Plan; assumptions for workforce changes, recruitment and retention within this project must align with the Trust's overall workforce plan.
- ▶ **Physical:** the existing accommodation is heavily occupied, making the splitting of the project into two phases an essential component of this project and the potential for disruption to the Trust organisation and infrastructure as a whole
- ▶ **Phasing:** difficult, and potentially reducing the ability to comply with national guidance
- ▶ **Timeliness:** the hospital will see continued pressure, both in terms of Urgent Care and ED attendances. From an operational perspective, the new facility must be ready as soon as practicably possible
- ▶ **Trust Transformation Programme:** Trust wide schemes for redevelopment of the Trust sites are all interdependent. This is the first scheme in a number of site-wide reconfiguration schemes.
- ▶ **Capital:** The project overall is dependent on the Trust securing the majority of capital through support from the NTDA
- ▶ **IM&T:** The project is dependent on the implementation of the Trust's Electronic Patient Record (EPR) project prior to opening.

3 | The Economic Case

3.1 Introduction

In accordance with the Capital Investment Manual and requirements of HM Treasury's Green Book (A Guide to Investment Appraisal in the Public Sector), this section of the FBC reaffirms the preferred option highlighted in the OBC. It reviews the changes in capital and revenue costs from the OBC and identifies reasons why the changes have happened and their impact on the position of the preferred option.

3.2 Estates Annex

An Estates Annex will can be found at Appendix 2Q. This covers the design and technical aspects of the project in detail; including the phasing of the scheme, scope of works, design, programme and the guaranteed maximum price (GMP).

Summary of Construction Phases

The project comprises a new build Emergency Department and refurbishment of the existing emergency department to create a new medical assessment unit. Both the ED and medical assessment unit will have suitable adjacencies to ITU, Theatres and Base Wards.

The overall project is to be delivered in three phases:

- ▶ **Service Isolation / Diversion and Demolition:** part of the existing Victoria Building will be demolished to make way for the new build phase 1, including:
 - ♦ Moving substation 6 (currently serves A&E and Balmoral Building)
 - ♦ Moving substation 2 (currently serving Victoria Building)
 - ♦ Asbestos strip to service ducts
 - ♦ Isolation and diversion of services to ensure mains services are maintained to remaining buildings
 - ♦ Demolishing the Langham wing of the Victoria Building whilst ensuring connectivity and interfaces between remaining buildings
 - ♦ Demolishing St Luke's Chapel
 - ♦ Demolishing and de-commissioning mechanical plant areas adjacent to St Luke's Chapel
 - ♦ Demolishing the Link bridge from Jarvis

During the demolition works the existing below ground services duct will be protected and maintained to ensure continuous operation of the adjacent building serviced by the site infrastructure running within these ducts.

- ▶ **Phase 1 New Build ED Construction:** construction of a new purpose built ED, extending over the current location of Car Parks A and B, the Langham Wing of

Victoria Building and St Luke's Chapel to create a new building for the ED, including the following departments for both Adults and Paediatrics:

- ♦ Initial Assessment
- ♦ Resuscitation
- ♦ Majors
- ♦ Minor Illness and Minor Injuries, Eye Casualty and Emergency ENT (MlaMIEE)
- ♦ Diagnostic Imaging

► **Phase 2 Assessment Refurbishment:** once the ED has moved from its existing location to the new build, the vacated area will be refurbished /remodelled to create the medical assessment and geriatric units. This area will include the following departments:

- ♦ GP assessment area, acute medical clinics and ambulatory care centre (DVT & TIA)
- ♦ RAU (Rapid Assessment Unit)
- ♦ ACB (Acute care Bay)
- ♦ EFU (Emergency Frailty Unit)
- ♦ AFU (Acute Frailty Unit)
- ♦ EDU (Emergency Decisions Unit)

Upon completion these areas will move from their current locations into this refurbished area.

3.3 Critical Success Factors

The critical success factors identified in the OBC remain appropriate and relevant for the FBC. These align to the investment objectives and key benefits criteria (Section 2.17).

Table 3.1 Critical Success Factors

No.	CSF	Explanation
1	Quality	To what extent does the option provide opportunities to deliver "Caring at its Best" by optimising the quality (clinical outcomes, safety and experience) of patient services provided during the transition period and in the future?
2	Meeting Commissioners' intentions for healthcare services	Does the option satisfy the existing and future anticipated models of care?
3	Business Needs	The preferred option satisfies the existing and future

No.	CSF	Explanation
		business needs of the Trust as described in the Strategic Case.
4	Strategic Fit	The preferred option provides a holistic fit and synergy with other key elements of national, local and Trust strategies.
5	Value for Money (VFM)	The option provides economies of scale, scope and efficiencies, whilst maintaining quality and standards of effectiveness in the delivery of care.
6	Benefits Optimisation	How well does the option optimise the potential return on expenditure – business outcomes and benefits (qualitative and quantitative, direct and indirect to the Trust) – and assist in improving overall VFM (economy, efficiency and effectiveness)?
7	Potential Affordability	Does the option satisfy the Trust's ability to innovate, adapt, introduce, support and manage the required level of change, including the management of associated risks and the need for supporting skills (capacity and capability)?
8	Sustainability	The Trust is confident in its ability to fund the required level of expenditure – namely, the capital and revenue consequences associated with the proposed investment.
9	Achievability	The preferred option provides the Trust with maximum flexibility to respond to continuously evolving healthcare provision, for example reducing its carbon footprint and modifying site capacity.

3.4 Determining the Capacity

3.4.1 Urgent Care Centre

The UCC contract is currently held by George Eliot NHS Trust. The impact of this contract being held outside of UHL has been modelled in the FBC I&E through the reductions in activity, consistent with CCG assumptions regarding the activity shift that will occur.

While the design has been based on the total activity figures (ED & UCC), the activity modelling in respect of a revenue position must exclude the UCC activity as it is not currently provided by UHL.

When the UCC contract is put to market (new contract to commence in April 2016), UHL will bid to provide this element of the emergency pathway but this has not been assumed in the FBC. The Trust believes that there are additional benefits, for example in workforce efficiencies, which could be realised if UHL was successful in their bid.

3.4.2 Activity

The Trust has undertaken extensive work as part of the Better Care Together (BCT) programme, projecting ED and Medical Assessment activity for the next 5 year period. This work has concluded that UHL will see a 7.8% reduction in ED attendances over the next 5 years. Work is underway across the health economy to ensure this reduction in activity from 15/16. This is being managed through the Better Care Together programme, and includes the development of ambulatory models of care, Better Care Fund programmes, admission avoidance schemes and mental health – prevention in crisis. The reduction is not applied uniformly across all areas of the department as high acuity resus/ majors patients are not likely to be diverted from the acute hospital setting into community services. However lower acuity patients such as those with minor injuries or minor illnesses could be diverted and therefore this is where the reduction in overall activity will be achieved.

At the time of writing the Developed OBC (August 2014), the Trust's Long Term Financial Model (LTFM) was not aligned to the BCT planning assumptions, as the LTFM had been submitted to the NTDA prior to the release of the BCT information. Therefore the two activity projections were not aligned, and the NTDA agreed that the Developed OBC would reflect two activity scenarios. However, it was subsequently agreed with the NTDA and CCGs that work would be carried out in advance of the FBC to develop one model which aligned to the BCT programme.

The Trust's ED attendances have continued to increase during 2014/15 and consequently neither model proposed in the Developed OBC reflected a realistic way forward. Following discussions with the CCGs (Better Care Together Programme Stakeholders), a pragmatic approach has been agreed which uses the forecast outturn activity for 2014/15 as the baseline; and then applies the BCT assumptions over the subsequent 5 years using 2015/16 as year 1. Years 6-20 will follow demographic growth in line with the Office of National Statistics (ONS); an annual increase of 1% for ED and Clinic activity, and 1.5% annually for medical assessment activity. This is the single model reflected in this FBC. This agreement is confirmed in the letter of support for the FBC from the CCGs (Appendix 1A).

The agreed activity model (percentage and actual numbers) for the FBC is shown in the Tables 3.2 and 3.3 below. As above, this excludes UCC activity.

Table 3.2 FBC Scenario - Activity Percentages

	Baseline	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20
ED & CAU	FOT 2014/15	-8.30%	1.60%	-0.20%	0.00%	0.30%
Medical Assessment		-3.10%	-5.40%	-6.60%	-2.10%	-1.00%
Clinic Activity		0.00%	1.00%	1.00%	1.00%	1.00%

Table 3.3 FBC Scenario - Activity Figures

	Baseline FOT 2014/15	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20
ED	145,837	133,733	135,873	135,601	135,601	136,008
CAU	11,773	10,796	10,969	10,947	10,947	10,980
Medical assessment	8,963	8,685	8,216	7,674	7,513	7,438
Clinic Activity	15,248	15,248	15,400	15,554	15,710	15,867
TOTAL	181,822	168,462	170,458	169,776	169,771	170,292

3.4.3 Capacity Assessment

The development of the brief for the new Emergency Floor has responded to changing baseline assumptions, a recognition of the operational constraints associated with emergency care, and the physical limitations imposed by a tight, inner-city site being redeveloped partially on a refurbishment basis.

Original Capacity Assumptions

The original briefing exercise underpinning the functional content of the new facilities and its design reflected a number of assumptions:

- ▶ 10-year planning horizon
- ▶ activity projections based on an analysis of demographic growth and historic trend growth
- ▶ use of 95th percentile hourly arrivals for ED streams, at 100% occupancy
- ▶ a one-off left shift of activity from the acute site to other settings, impacting on the UCC

To inform that exercise, an analysis was undertaken of recent emergency activity growth and the following key points were noted:

- ▶ in ED, recent trend growth had been on average 5% per annum, whilst demographic growth projected by the ONS for the ED population was approx. 1% (age-adjusted)
- ▶ For non-elective emergency admissions these figures were 3.5% and 1.5% respectively

To chart a mid-point between historic trend growth and ONS projected demographic growth, the following annual growth rates were used for the 10-year planning horizon:

- ▶ ED: average 3% per annum
- ▶ NEL/ medical assessment: average 2.5% per annum

The above parameters formed what was termed the Medium Scenario in the original OBC, and informed the capacity calculations used to scope the functional content of

the scheme. Low and High Scenarios were also developed to reflect ONS-only and historic trend growth rates (i.e. 1% & 5% for ED activity, 1.5% and 3.5% for medical assessment activity).

The scheme was subsequently briefed and designed to reflect the functional content generated from the Medium Scenario assumptions, involving widespread consultation with clinical, managerial and support staff within and beyond the Trust, as well as patient representatives.

FBC Scenario

As advised by the NTDA, the FBC now uses:

- ▶ 20-year planning horizon instead of 10-years
- ▶ 85th percentile hourly arrivals for ED streams, at 85% occupancy, as per ECIST model

In addition the FBC also reflects:

- ▶ Use of FOT 2014/15 as the activity baseline, year 0
- ▶ Use of Better Care Together growth profile for years 1-5 of the projections
- ▶ Use of Office of National Statistics (ONS) population growth for years 6-20 of the model

The FBC Scenario assumptions impose a reduction in activity in the early years of the model due to the Better Care Together programme, and then a shallower, but longer, period of growth (i.e. to year 20, not to year 10). As a result of these two factors, the functional content determined by the FBC BCT demand & capacity model is smaller than that scoped on the basis of the Medium Scenario parameters in the original business case.

Impact of Revised Scenario

- ▶ The original functional content of the proposed scheme, based on a 10-year planning horizon, remains sufficient to meet the activity projected at year 20 under the new activity modelling.
- ▶ The original functional content has sufficient capacity to meet around 2% annual growth from years 6-20, should historic trends continue to be realised above the demographic growth of 1%.

This confirms that the originally proposed content and the design developed by the project team remain robust in the light of the FBC scenario assumptions. The slight capacity surplus in the proposed scheme is distributed across the project and its removal from the project would not warrant the cost, time and risk penalties associated with a full-scale redesign. This also provides future flexibility for the Emergency Floor.

However, it is recognised that in the early years of occupation of the new facilities there will be surplus accommodation as the BCT programme assumes a significant reduction of emergency activity at LRI in years 1-5. The scheme has been designed to be as flexible as possible through the employment, wherever practical, of generic clinical

spaces. This would enable a range of services to backfill surplus accommodation in order to ensure that maximum utilisation is made of the new estate. Options include:

- ▶ Inclusion of the Surgical Assessment Unit in the Emergency Floor

Conversely, if future growth surpasses that modelled in the FBC BCT scenario (the impact of which might not manifest itself for 10-15 years), there are a number of initiatives that can be implemented in mitigation over time:

- ▶ Further work to understand and resolve downstream operational issues in the acute bed stock to help improve flow out of the emergency facilities generally
- ▶ The provision of additional critical care capacity (e.g. HDU, ITU) would similarly ease pressure on the Acute Care Bay and Resus
- ▶ The development control plan for the LRI site can include the further colonisation of adjacent space on the new emergency floor as alternative models of delivery are implemented for other clinical services
- ▶ The relocation of lower acuity workload (UCC and minors) to alternative location would liberate capacity within the proposed unit for higher acuity workload

The sensitivity testing of the demand and capacity modelling assumptions, and the strategies for coping with long-term upside and downside activity scenarios, have therefore confirmed the robustness of the original planning assumptions for the project. This provides assurance that the proposed investment offers the flexibility to deal with both changing levels and patterns of workload.

3.5 Options Appraisal

An options appraisal process was undertaken, as described in the OBC, which reduced a long list of 13 options to a short list of 4 options, and then identified a preferred option.

The short listed options were:

- ▶ **Option 0:** Do Minimum - Ensure critical backlog maintenance is undertaken and review clinical processes & procedures
- ▶ **Option 1A:** Existing 1st floor refurbishment with some assessment provision elsewhere, (inc courtyard infill & extension)
- ▶ **Option 2C:** Demolition of Jarvis building & new build ED & refurbish assessment on single floor
- ▶ **Option 3A:** Demolition of Victoria building and part new build/part refurbish assessment on single floor

A qualitative benefits appraisal took place in October 2013, which included a weighting and scoring exercise based on the project objectives. One or more benefit criteria contribute towards each project objective; these criteria were scored (0-10).

The weighted scores and ranking for each option were as followed:

Table 3.4 Results of Qualitative Options Appraisal

	Score	Rank
Option 0	2.26728	4
Option 1A	6.73794	2
Option 2C	6.28680	3
Option 3A	7.53636	1 – Preferred Option

Option 3A This option demonstrated through the non-financial appraisal process that the Trust is able to realise benefits and achieve strategic objectives and critical success factors of providing an appropriate solution to meeting current and future capacity demands for emergency care.

- ▶ This option lends itself to a detailed design process that provides essential departmental adjacencies
- ▶ Majors and Resuscitation areas can be located close to the front door and ambulances will have an ambulance only access to the department
- ▶ Adjacencies to the minor injuries and minor illness unit are enhanced and assessment services will maintain essential adjacencies within the department
- ▶ Paediatric emergency services demonstrated good adjacencies and separate paediatric entrance point is provided
- ▶ Ambulance access is provided on the same level as department entry which is essential for blue light access. The provision of an ambulance only access to the hospital department is seen as a better outcome to that which the other options can provide
- ▶ The single floor concept can be achieved with provision of diagnostics and assessment within the department and opportunities for flexibility and future proofing the design

In comparison to the other shortlisted options, the enabling moves associated with Option 3A are deemed the least disruptive to the wider organisation with regards clinical and non clinical operations, and are more aligned with the overarching vision for the site. Required relocations have been identified as follows:

- ▶ Urgent Care Centre
- ▶ Out Patient Clinics
- ▶ Fielding Johnson Ward
- ▶ Medical Physics & IM&T
- ▶ Multi Disciplinary Team Office
- ▶ Clinical Genetics OP Clinics and Clinical Skills Reception

► Chapel

This option provides an effective solution to the Trust's needs and in particular will be significantly more effective than the other options at providing flexibility, meeting capacity demands, enhancing the patient experience and emergency care pathway efficiencies. It also offers a solution with the least impact on the Trust's clinical and non clinical operations, DCP and strategic plans.

3.6 Economic Appraisal

3.6.1 Introduction

This section provides a description of the changes between OBC and FBC from a revenue and capital perspective. It discusses the impact of these changes on the validity of the OBC preferred option.

3.6.2 OBC Options Appraisal

The OBC options appraisal can be summarised in the following table:

Table 3.5 Summary of Economic and Value for Money Appraisal

Criteria	Option			
	0	1A	2C	3A
Raw scores	51.18	131.74	129.64	148.71
Weighted Scores	2.27	6.74	6.27	7.54
Rank (non-financial)	4	2	3	1
Net present cost (NPC) (£k)	1,264,890	1,222,633	1,220,895	1,223,981
NPC per point score (£k)	557,220	181,400	194,720	162,332
Rank (VFM)	4	2	3	1
Rank	4	2	3	1

The appraisal indicated a difference of 11.7% between the preferred option 3A and the next best option of Option 2A.

3.6.3 Estimating Costs

The FBC costs have been determined by Capita and the Trust's Cost Advisors, and are in accordance with NHS standards. The total capital costs for the preferred option at OBC stage and FBC stage are summarised below.

Table 3.6 Capital Costs at OBC & FBC

Capital Costs	OBC Stage (£)	FBC Stage (£)
Construction	30,233,828	32,396,521
Fees	6,781,406	5,669,122
Non Works Costs	0	76,021
Equipment	1,692,000	2,403,206
Planning Contingency	2,894,644	2,510,313
Total for approval purposes	41,601,878	43,055,183
Optimism Bias	0	0
Inflation	389,840	937,319
Total	41,991,719	43,992,502
VAT Recovery	-649,792	-663,475
Grand Total	41,341,927	43,329,027

N.B. Inflation has been calculate from baseline PUBSEC indices and projected to a mid-point in construction, therefore, with a rise in the construction market the inflation has increased between OBC and FBC.

The main assumptions in the above figures are:

- ▶ The costs at FBC are based on the contract price (GMP) plus non GMP items as set out in the FB cost forms in Appendix 3A, 3B, and 3C
- ▶ VAT has been included at 20% where it is applicable and with VAT recovery assumed as demonstrated in 5.11 of the FBC. VAT recovery equates to 9% of the total VAT applicable.

3.6.4 Changes since OBC

The key changes to the construction costs have been as a result of market testing in which many of the works packages are priced higher than forecast. As a result of this the Trust undertook a value engineering exercise. This was a review of the M&E engineering specification, resulting in the adoption of suitable alternative products, and use of supply chain competitive purchasing rates.

In addition there has been an increase in equipment costs of c£700k as a more detailed review of equipment needs was undertaken. In line with normal practice at OBC stage the equipment cost were based on a % of the works costs and abated for transferred items. The assumption at OBC stage was a 40% transfer. However the detailed equipment work has indicated a transfer of c15% of equipment. The more detailed design undertaken for FBC stage has also identified additional cost in respect of group 4 items (small trust supplied items) and IT requirements.

Additional costs have also been included for works to existing highways since as part of the planning approval the Trust has been required to carry out section 278.

Since the Developed OBC the Trust has also identified £1.3M worth of fees included at the Developed OBC stage that were not part of this project, but part of a previous iteration of developing an OBC that didn't progress. The Trust has now funded this from its own internal resources. As the costs do not relate to the current scheme and the Trust is not seeking funding this cost has therefore been removed. Please see Appendix 3D for a report on these non-attributable fees.

Non works costs of c£76K have been identified as the Trust needs to relocate a bed store in order to provide space for a new substation. The bed store in turn is moving into the site of the Knighton St museum which in turn is relocating to the Glenfield site.

Phase 2 Development: Operational Policy Review

Throughout the development of the case, the operational policy which articulates the emergency pathway has been under review aiming to provide continual performance improvement. This has particularly been the case for the assessment areas. This resulted in a review of the operational policy with the development of the GP assessment model, and with the identified need to remove barriers between the Acute Frailty Unit and Emergency Frailty Unit in order to provide workforce efficiencies and inform an efficient design.

The outcome was that the design team was tasked with re-designing the area to a revised design brief, using existing structure and services where possible. For example, the Emergency Decisions Unit can stay in its existing location which delivers a leaner capital scheme, while still providing the required clinical functionality. The outcome of this process was to utilize the revised operational policy to inform a design that maximized clinical functionality within the existing environment.

More detail can be found in the Estates Annex at Appendix 2Q.

3.6.5 Guaranteed Maximum Price

The agreed Guaranteed Maximum Price (GMP), which includes inflation and VAT, of Interserve Construction Limited, the Principal Supply Chain Partner (PSCP), for the design and construction of the Emergency Floor at Leicester Royal Infirmary includes all of the costs to date, in addition to all anticipated costs in completing the design and construction of the facility.

The GMP offer made by Interserve in 2014 is based on a construction start date of July 2015. Interserve have confirmed work must start within the following 3 months to ensure the GMP remains the same. However the impact of not achieving this date will result in a delay, creating additional costs. The GMP offer can be found at Appendix 3E.

The OBC included inflation which was based on industry standards. This FBC includes market tested costs which reflect a fixed price for construction. Risk of inflation sits with Interserve Construction Ltd., our construction partner.

The total project capital cost is £43.3m and this is broken down into a number of elements (including the GMP) as set out in the table above and in the FB forms which can be found at Appendix 3A, 3B and 3C.

3.6.6 Risks

Planning Contingency Comparison

Table 3.6 below shows that the value of risk included in costs has decreased as certainty of the project has developed and detailed designs have been developed. The table shows the total risk for the project, split to show that owned and managed by the Trust and that owned and managed by the contractor (the Principle Supply Chain Partner). The PCSP risks are those attributable to the contractor.

Table 3.7 Risk Summary

Risk Costs	OBC Stage (£)	FBC Stage (£)
Planning Contingency (Trust)	1,518,484	1,242,600
PSCP risk	1,376,160	1,253,293

The risk register, which can be found at Appendix 2T, has been reviewed and covers all known issues including costs. The value includes current knowledge regarding planning conditions and it is important to note that a separate allowance has not been made for optimism bias.

Key risks that have been identified are primarily due to the fact that the works take place on a live hospital site and the fact that the scheme is a mixture of existing and new buildings. Examples of the risks include:

- ▶ Accidental damage to existing buildings during demolitions
- ▶ Accidental damage to existing buildings during construction
- ▶ Discovery of contamination or high water table
- ▶ Architectural/design issues in existing buildings
- ▶ Unplanned Trust stoppages to works

3.6.7 Revenue Costs

The revenue changes in the OBC have been reviewed and worked up in more detail. The following table reflects the position at OBC:

Table 3.8 OBC Revenue Costs

	2013/14 £'000	2014/15 £'000	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000	TOTAL £'000
Depreciation	-	-	85	(474)	(689)	(689)	(1,767)
Rate of return cost increase	-	-	45	(912)	(900)	(876)	(2,643)
Agency reduction	-	-	-	738	738	738	2,214
Workforce efficiencies	-	-	-	828	828	828	2,484
Other efficiencies	-	-	-	900	1,600	1,600	4,100
Facilities	-	-	-	(165)	(165)	(165)	(494)
Pay and non-pay increases from additional activity	-	-	(40)	(32)	(38)	(53)	(163)
Income	-	(1,600)	(1,331)	(1,386)	(1,349)	(1,246)	(6,913)
Transformation funds	-	1,600	1,250	650	100	-	3,600
Total I&E impact	-	(0)	8	147	126	138	418

This showed a circa breakeven position when income and capital charges are accounted for. The net savings on expenditure (not including capital charges) were £2.9 million in 2018/19. This was counterbalanced by a loss of income of £1.2 million and net additional capital charges of £1.7 million.

The revised position as per the FBC is as follows:

Table 3.9 FBC Revenue Costs

	2014/15 £'000	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000
Income change	1,386	239	263	(80)	(127)
Expenditure					
Agency	0	840	1,844	2,347	2,347
Workforce efficiencies	0	356	626	1,373	1,373
Additional clinical costs from new development	0	0	(183)	(734)	(734)
Additional maintenance costs of equipment	0	0	(58)	(271)	(383)
Pay and non pay increases from changes in activity	0	320	332	378	379
Depreciation	177	177	(25)	(637)	(637)
Rate of return & Interest	45	(445)	(975)	(934)	(887)
Total change in expenditure	222	1,249	1,562	1,522	1,457
Total Net Change	1,608	1,488	1,825	1,443	1,331

N.B. in this table positive = increased income.

The net position is significantly better as a result of revised assumptions on income loss. In the Developed OBC the Trust had assumed a reduction in ED income of 7.8% equating to an activity loss of 7.8%. The Trust has reviewed this and whilst still assuming a 7.8% activity loss, has assumed that the reduction in income will be 3.7% as the CCG's efforts will focus on the more inappropriate use of the ED, reflecting lower acuity patients.

Savings on expenditure (excluding capital charges) are £3 million in the FBC, representing an increase in savings of £34k. The main reasons for the change in savings result of a detailed review of the EF cost base and related costs. A detailed workforce planning exercise has been undertaken to identify all clinical savings relating directly to ED. As part of this exercise additional costs have been identified in clinical support services to support the new model of care. These have been offset to a large extent by the additional savings within the Emergency Floor itself, and a revised view on the implications on FM of the Emergency Floor.

The Revenue cost position therefore has only marginally changed and is within the parameters set by the Capital Investment Manual and the TDA guidance/ checklist.

3.6.8 Summary of Position compared to OBC

The changes between OBC and FBC are as follows:

Table 3.10 Changes between OBC and FBC

	OBC	FBC	Comment
Capital Costs	£41,342k	£43,329k	Driven by additional equipment market testing and s278 works re highways
Annual Revenue Costs (2018/19)	£44,580	£44,754	Driven by changes in activity, additional costs of equipment maintenance and financing source partially balanced by reductions in capital and charges in FM costs

3.6.9 Compliance with Capital Investment Manual & NTDA Thresholds

If the capital cost total for approval purposes exceeded 5% of the costs stated and approved in the OBC (£41.6M) there would be an automatic lapse of approval of the OBC. The capital total for approval purposes (which excludes optimism bias, inflation and VAT recovery) has increased from £41.6M to £43.1M. This is an increase of £1.5M which is 3.4% of the costs approved at OBC stage. Therefore the capital cost increase is within the tolerances allowed.

If the revenue cost exceeded 10% of the costs stated and approved in the OBC, there would also be an automatic lapse of approval of the OBC. The revenue cost position has only marginally changed between OBC and FBC and is therefore within the parameters.

3.6.10 FBC Update to OBC economic appraisal

Section 3.6.9 above confirms compliance with TDA guidance that the options appraisal does not need to be revisited if neither the capital nor revenue thresholds have been breached and the scope of the preferred option has not changed. However, the HM Treasury Green Book "Public sector business cases using the five case model: updated guidance (2013)" contains the following guidance at action 26 "even if the strategic drivers for the project have not changed sufficiently to make alterations to the preferred option necessary, the FBC must demonstrate that the conclusions of the economic appraisal remain valid. The analysis from the OBC stage should be updated and presented in the FBC. In order to meet this requirement the Trust has re-run the Generic Economic Model (GEM) used in the OBC options appraisal. The conclusions from this exercise are as follows

- ▶ The net present cost (NPC) of the preferred option is now £1,228m over 60 years compared to £1,224m at OBC. This is a movement of £3.9m or 0.3%.
- ▶ In order for the OBC option appraisal decision to change the NPC per point (see table 3.5) would need to change by £18.6m for option 1A to be the preferred option. With a weighted score of 7.54 the preferred option NPC would therefore need to change by £140m over the 60 years in order to change the decision.
- ▶ To put this change in context the Trust has assessed the sensitivities, where relevant, that are detailed in section 5.8 of the FBC in the GEM. The results are shown in the following table:

Table 3.11 Assessment of Sensitivities

Sensitivity	NPC per point £m	NPC per point change £m
Increase in capex by 5%	163	0.7
Failure to make 10% of savings	164	1.7
Additional costs overstated by 10%	162	0.1
All sensitivities combined	164	1.6

This clearly demonstrates that the level of change required (£18.6m) on the NPC per point to change the preferred option decision will not be reached based on the GEM as at FBC.

3.7 The Preferred Option – Option 3A Victoria

The FBC continues to show:

- ▶ Significantly improved patient environment and facilities
- ▶ Significant reduction in risk
- ▶ Enhanced operational efficiencies
- ▶ Majors and Resuscitation areas can be located close to the front door and the ambulances will have ambulance only access to the department
- ▶ Adjacencies to the minor injuries and minor illness unit are enhanced and assessment services will maintain essential adjacencies within the department
- ▶ Paediatric emergency services demonstrated good adjacencies and separate paediatric entrance point is provided
- ▶ Ambulance access is provided on the same level as department entry which is essential for blue light access. The provision of an ambulance only access to the

hospital department is seen as a better outcome to that which the other options can provide

- The single floor concept can be achieved with provision of diagnostics and assessment within the department and opportunities for flexibility and future proofing the design

Consequently and for the reasons set out in the sections above this remains the preferred option.

Option 3A provides an effective solution to the Trust's needs and in particular will be significantly more effective than the other options at providing flexibility, meeting capacity demands, enhancing the patient experience and emergency care pathway efficiencies. It also offers a solution with the least impact on the Trust's clinical and non clinical operations, DCP and strategic plans.

Appendices 3F to 3X show 1:200 and 1:50 scale plans, palette of construction materials and roof plan for the preferred option. External visualisations of the preferred option can be found at Appendix 3Y and 3Z.

3.7.1 Evolution of the Schedule of Accommodation

A series of schedules has evolved in parallel with the design development of the preferred option and a copy of the current version is attached in full at Appendix 3ZZ.

The first column references national guidance and provides a measured space in m² against HBNs where available. The next column denotes that briefed by the clinical planner and is an assessment of the functional area required to deliver the service against the agreed clinical model and supporting activity and capacity model. To this area allowances are added for planning provision, engineering and general circulation, and are referred to as brief uplift. This is then totalled to give the overall departmental area. The final columns denote that scheduled and drawn by the architect post further liaison with the clinical teams, culminating in a final measured area that allows for wall/partition thicknesses and is that used for costing purposes.

Where the design has been constrained and HBNs and other national guidance has not been adhered to, the schedule details a brief explanation with regards the derogation and associated reasons, which in all cases has been supported by the relevant Trust clinical and managerial leads. Functionality of the spaces has been tested through a series of mock-ups, simulation tests and benchmarking against other facilities. More information regarding derogated rooms and two tables looking at the proposed accommodation compared to existing and compared to the requirements of the Clinical Operational Policies can be found in the Estates Annex at Appendix 2Q.

3.7.2 Design Development

Detailed design has been developed in consultation with user groups and stakeholders. The Estates Annex, which can be found at Appendix 2Q, identifies how this process has evolved. It involves considerations in design regarding the following areas:

- ▶ Model of care and clinical functionality
- ▶ Clinical adjacencies
- ▶ Privacy & dignity
- ▶ Workflows & logistics
- ▶ Future adaptability
- ▶ Access (both internal & external), and wayfinding
- ▶ Quality of the patient environment and interior design, aiding healing

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

The scheme will be procured through UHL's framework partnership with Interserve FM and assigned to Interserve Construction Limited. UHL followed procurement regulations and law to establish the framework which is headed in contract between the Trust and Interserve FM. Interserve were appointed following an OJEU process with reference: OJ/S S139, 22/07/2011, 231138-2011-EN.

Under the bespoke framework, Interserve Construction Ltd is appointed as principal contractor for the delivery of projects; commercial arrangements and contracts are pre-agreed to cover commissioning of the business case through to final delivery of the asset using an NEC3 Option C Form of Contract (Target Contract with Activity Schedule). Cost savings are split between the Trust and the Client based on previously agreed percentages which will engender a spirit of partnering and collaboration within the Project Team. The risk of cost overrun is transferred to Interserve once the GMP has been agreed and construction stage commenced.

Project risk is dealt with openly from the outset of the project and the client; Interserve and the Design Team are encouraged to take an active role in identifying, mitigating and apportioning risk to the party best suited to deal with it. This should be a proactive process throughout the delivery of the project.

Key external advisors and construction services are as follows:

Table 4.1 Key External Advisors & Construction Services

Role	Organisation
Pre-construction	
Business case preparation	Capita
Mechanical and electrical consultants	Capita
Architects	Capita
Structural engineers	Capita
Cost consultants	Capita
CDM	Capita
Trust project management & cost advisors	RLB

GMP development	Interserve Construction Ltd
Construction	
CDM	Capita
Project management & cost advice	RLB
Building contractor	Interserve Construction Ltd
MEP Detailed Design & Installation	Interserve Engineering Services

Under the framework, Interserve has:

- ▶ Taken single point responsibility to manage the design and construction process from completion of OBC through to project completion
- ▶ Assembled a dedicated team from its supply chain of experienced health planners, designers and specialists, to successfully deliver facilities that will benefit patients and staff alike
- ▶ Provided benefits of experience of long term partnering arrangements that will continue throughout the life of the project
- ▶ Committed to identifying construction solutions that will assist in the implementation of improved service delivery, best practice and delivering best value

Interserve and UHL have worked together through the full business case (FBC) stage to develop and agree a guaranteed maximum price for delivery of the scheme. This reflects:

- ▶ Fees for professional advice such as design and cost management
- ▶ Market tested packages for construction works on an open book basis

The GMP has been assessed for overall value for money by cost consultants acting for UHL (Rider Levett Bucknall - RLB). This will take into account elements such as:

- ▶ Prevailing rates for similar works nationally and locally
- ▶ Published cost indices
- ▶ Knowledge of the cost of work in the hospital from other recent schemes
- ▶ Prime contractor and client retained risks as identified in the joint risk register

It was agreed that the development of the GMP would be run in parallel with the development of the Works Information and this would be undertaken in a fully open book / collaborative environment, such that a minimum of three quotations would be obtained for all Works Packages making up at least 80% of the GMP.

Package responses were assessed by Interserve Construction Ltd in conjunction with the Trust's advisors RLB to ensure the 'Best Value' tender was included in the GMP. The assessment was not only based on price but also programme, design/ technical

proposals and likely risk. Interserve and RLB agreed a formal assessment proposal for each package. Tenders were benchmarked appropriately.

Should the scheme not proceed, the Trust will own the design at point of termination but will be liable for Interserve costs up to that point, in line with contractual commitments made during commissioning of the project.

4.3 Key Factors Affecting Outcomes

4.3.1 Planning Permission

The preferred option requires planning consent, which was obtained on 24th September 2014 subject to Planning Conditions. Appendix 4A shows the Planning Approval and Planning Conditions; Appendix 4B shows the Planning Conditions Tracker. At the time of FBC submission all necessary information has been submitted to LCC to discharge the pre-commencement planning conditions.

Highways & Parking

Issues with regard to traffic movements, including agreement on arrangements for 'blue light' access into and out-with the site, have been the subject of very constructive meetings with officers at LCC Highways.

Car parking matters, including temporary solutions, have also been discussed in detail. The 256 staff parking spaces lost from the LRI site have been offset by provision at a nearby multi storey car park to allow for the proposed development.

It has been agreed with the LCC Highways department for the project to submit both a 184 and 278 application to cover the use of the proposed point of access/ egress during and post construction.

The Trust has a Travel Plan for its three sites; and a Travel Plan and Parking Management Statement was produced for this project to detail specific travel implications and opportunities. This was submitted to LCC as part of the Planning Application.

4.3.2 Building Research Establishment Environmental Assessment Method (BREEAM)

BREEAM is the leading and most widely used environmental assessment method for buildings and communities. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building's environmental performance. BREEAM provides clients, developers, designers and others with the following:

- ▶ Market recognition for low environmental impact buildings
- ▶ Assurance that best environmental practice is incorporated into a building

- ▶ Inspiration to find innovative solutions that minimise the environmental impact
- ▶ A benchmark that is higher than regulation
- ▶ A tool to help reduce running costs, improve working and living environments
- ▶ A standard that demonstrates progress towards corporate and organisational environmental objectives

BREEAM addresses wide ranging environmental and sustainability issues and enables developers and designers to prove the environmental credentials of their buildings to planners and clients. It:

- ▶ Uses a straightforward scoring system that is transparent, easy to understand and supported by evidence-based research
- ▶ Has a positive influence on the design, construction and management of buildings
- ▶ Sets and maintains a robust technical standard with rigorous quality assurance and certification

The project team have worked alongside an accredited BREEAM assessor throughout the design process to ensure requirements are considered in a timely manner. The project has been awarded an Interim Certificate – Design Stage by the BRE showing a score of 56.2%, reflecting a Very Good rating. See Appendix 4C for the Interim Certificate.

4.4 Potential for Risk Transfer

The LLR Framework has a single comprehensive risk management process, which the Trust will be using (see Section 6.8 for details). The Emergency Floor Project Senior Responsible Officer (SRO) and Interserve act as joint owners of the joint project Risk Register for this scheme, responsibility for risks identified in it are then to be allocated and identified on the associated risk register. The risk of cost overrun is transferred to Interserve once the GMP has been agreed and construction stage commenced.

4.5 Proposed Charging Mechanisms

The Trust intends to make payments in relation to works required in accordance with the LLR Framework Agreement. The NEC Option C Form of Contract will be the agreed form of Building Contract for Interserve works. The Building Contract stipulates the payment mechanism, timescales, method of payment calculation etc.

Charging mechanisms approach applied relates to Interserve Construction Ltd being paid the Defined Cost of the works plus their fee up to the GMP. Under the current contract there is a mechanism for a Gain Share whereby if the final costs are below the GMP then there is the potential for both the Trust and Interserve Construction Ltd to share the savings, generally on a 50/50 basis if the final cost is up to 5% less than the GMP; if the final cost is more than 5% lower than the GMP then the client retains 100%

of the savings below the 95% level (if the final cost exceeds the GMP then there is no additional cost to the Client, unless instructed otherwise). This in turn incentivises efficient working and elimination of unnecessary cost.

4.6 Proposed Contract Lengths

Contract lengths will be set in relation to the Trust requirements and the advice of Interserve Construction Ltd.

4.7 Proposed Key Contractual Clauses

Key contractual clauses in relation to works associated with this scheme will be in accordance with LLR Framework contract terms; namely the NEC Option C contract which contains core clauses and Secondary Z clauses specific to the Framework route and bespoke requirements of the Client.

4.8 Personnel Implications (including TUPE)

TUPE Regulations will not apply to this investment as no undertakings will transfer between employing entities.

4.9 Procurement Strategy & Implementation Timescales

Section 6.3.2 of this business case outlines the implementation programme.

The Project Programme is intended to deliver the project by summer 2017, though this timeline is predicated on the early works being commenced in parallel with development of the Full Business Case.

The Trust Board and NTDA should have assurance with this approach as the majority of enabling and associated demolition works sit comfortably with the future Development Control Plan for the LRI site.

4.10 Equipment Strategy

The Trust intends to implement an equipment strategy that incorporates the following:

- ▶ Ownership of the majority of equipment
- ▶ Some equipment leased e.g. beds and trolleys leased under the bed management contract

- Larger imaging equipment within the ED will be included within the Trust's Managed Equipment Service (MES) contract e.g. diagnostics/ imaging

The equipping manager has followed a robust methodology in order to ascertain what equipment can be transferred from the existing Emergency Floor departments, and what needs to be purchased either via capital or revenue funding.

The Room Data Sheets and Bill of Quantities were used to ascertain the equipment requirement of the new Emergency Floor, as these highlight the specifications and dimensions needed for equipment. An audit was undertaken of all clinical areas that are due to move into the Emergency Floor, which gave an overview of what would be fit for transfer and also have asset life when transferred. A significant element of the equipment currently utilised is still fit for purpose and has been identified for transfer.

Appendix 4D shows the equipping schedule of items to be purchased via capital funding. Appendix 4E shows the equipping schedule of items to be purchased via revenue funding, utilising the Trust's current contracts. Appendix 4F shows the Trust's Equipment Procurement Strategy for this scheme.

The table below shows a high level summary of capital equipment costs:

Table 4.2 Summary of Capital Equipment Costs

	£
Trust Equipment Costs	1,537,254
Previously excluded items (including Trust Group 4 items)	162,746
IBM Costs – Main Works	206,738
IBM Costs – Isolations, Demolitions & Diversions	60,934
Trust Equipment – Scanner transfer plus BWIC	35,000
Net Total (excluding VAT)	2,002,672

Assumptions have been made that the following will be used:

- **Asteral, Managed Equipment Service** - fixed equipment for Imaging Suite and mobile imaging equipment. An allowance of £454,998 has been included in the revenue cost models.
- **Interserve Soft FM services** - all cleaning equipment. A variation will be issued against the existing Interserve FM Contract for the new EF project.

- ▶ **Bed Management Contract** - beds, trolleys, couches and high-back bedside patient chairs. An allowance of £431,665 has been included in the revenue cost models.
- ▶ **Empath service** - Hot lab equipment. An allowance of £219,500 has been included in the revenue cost models.

Other considerations were also taken into account in determining the equipment schedule. These included:

- ▶ **Standardisation of Equipment** - the Trust has standardised an element of its equipment base. In terms of commercial leverage and more importantly clinical safety, equipment will be purchased in line with these standardised ranges.
- ▶ **Utilisation of Trust's current strategic contracts** - the Trust has in place a number of long standing contracts, e.g. bed management and imaging diagnostic equipment, which are both covered by Managed Service arrangements and these will be utilised at the point of purchase. Other legacy contracts were also utilised in the costing exercise.
- ▶ **Information Technology** - the Trust is working with its Managed Business Partner IBM and their network support partner NTT. The process has also included an analysis of the technology requirement both in terms of actual equipment and infrastructure.
- ▶ **Pathology** - Empath have provided their professional assessment in determining the hot lab requirements, taking into account the needs of the ED service and Empath operating service model.
- ▶ **Medical Physics** have provided information from their equipment data AIMS and technical support from the Medical Physics ED technician.
- ▶ **Stakeholder Engagement** - meetings have taken place with key stakeholders in the Emergency Department including lead clinicians. At the initial meeting, it was agreed that the equipping officer should meet with constituent sections with ED to determine their requirements and to understand the footprints of the equipment required.
- ▶ **Appropriate suppliers** in the market have provided information on specification and price. Pricing information has also been obtained from local and nationally convened contracts available for use by the Trust.

4.11 Financial Reporting Standard 5 Accountancy Treatment

Assets underpinning delivery of the service will be reflected on the Trust's balance sheet.

5 | The Financial Case

5.1. Introduction

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 the financial results show that the Trust made a surplus of £0.1m for both 2011/12 and 2012/13 and a £39.7m deficit in 2013/14.

5.2. Capital Costs

The capital costs of the preferred option total £43.3M including forecast out-turn inflation. Below is an analysis of the total costs.

Table 5.1 Summary of Capital Costs

Capital Costs	Option 3A Victoria (£)
Construction	32,396,521
Fees	5,669,122
Non Works Costs	76,021
Equipment	2,403,206
Planning Contingency	2,510,313
Sub Total	43,055,183
Optimism Bias	0
Inflation	937,319
Total	43,992,502
VAT Recovery	-663,475
Grand Total	43,329,027

5.3. Financing

The table below sets out the cashflow associated with the scheme together with sources of funding. This shows that the Trust has clearly identified its capital requirements and has also identified relevant sources of funding.

As can be seen below the Trust has currently funded the initial development costs from its own resources but is seeking funding some of these in addition to the subsequent costs of the scheme from 2015/16. Further details to support these figures are within Appendix 5A. The Trust is not in a position to use its operational capital to fund the scheme as a result of its size and the requirement to use its operational capital to manage its regular capital requirements.

Further details to support these figures are within Appendix 5A.

Table 5.2 Sources and Applications of Funds

	2013/14 £	2014/15 £	2015/16 £	2016/17 £	2017/18 £	TOTAL £
Capital Expenditure	568,764	6,368,024	17,698,095	18,341,114	353,030	43,329,027
Funded By						
Public Loan	0	0	20,038,720	18,341,114	353,030	38,732,864
Trust Resources	568,764	6,368,024	(2,340,625)	0	0	4,596,163
Total Funding	568,764	6,368,024	17,698,095	18,341,114	353,030	43,329,027

5.4. Income & Expenditure

As discussed earlier in the business case the Trust has undertaken a review of future demand within the UHL ED. The agreed activity model percentages for the FBC are shown in table 5.3 below.

Table 5.3 Activity Assumptions

	Baseline	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20
ED & CAU	FOT 2014/15	-8.30%	1.60%	-0.20%	0.00%	0.30%
Medical Assessment		-3.10%	-5.40%	-6.60%	-2.10%	-1.00%

Clinic Activity		0.00%	1.00%	1.00%	1.00%	1.00%
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Within the first five years, activity levels are predicted to fall from the 2014/15 baseline based on the assumption of implementation of Better Care Together (BCT) Plans to divert attendances from ED to alternative providers of care in both primary and community settings. This represents an increase from the 2013/14 level of income in 2014/15 and smaller increases in 2015/16 and 2016/17 until the implementation of BCT plans reduce income compared to 2013/14.

It is anticipated that after this point there will be a small increase in activity driven by changes in demographics and acuity levels. This initial decrease in activity will impact on staffing and non pay costs. These shifts in activity by type have been modelled and will be used to calculate the most appropriate staffing levels taking into account the risks of a 'boom and bust' approach to workforce planning given the lead in times for education and training.

Table 5.4 shows a summary of the impact of these assumptions on the Trust's I&E over the first 5 years (incremental movements from the 13/14 baseline). More detailed information on impact can be seen in Tables 5.5 and 5.6 (total figures for each year) below.

Table 5.4 5 Year Financial Summary

	2014/15 £'000	2015/16 £'000	2016/17 £'000	2017/18 £'000	2018/19 £'000
Income change	1,386	239	263	(80)	(127)
Expenditure					
Agency	0	840	1,844	2,347	2,347
Workforce efficiencies	0	356	626	1,373	1,373
Additional clinical costs from new development	0	0	(183)	(734)	(734)
Additional maintenance costs of equipment	0	0	(58)	(271)	(383)
Pay and non pay changes from movements in activity	0	320	332	378	379
Depreciation	177	177	(25)	(637)	(637)
Rate of return & Interest	45	(473)	(987)	(957)	(910)

Total change in expenditure	222	1,221	1,549	1,499	1,434
Total Net Change	1,608	1,460	1,813	1,419	1,307

The following revenue consequences have been worked through in some detail since OBC. The key elements of the workforce plan are discussed in detail in the workforce section. In summary the changes in income and expenditure are shown in the following table. Further details to support these figures are within Appendix 5B.

Table.5.5 Changes in Income & Expenditure

Area	2018/19 Savings £'000	Comment
Income Loss	(127)	The Trust has reviewed the income loss resulting from the reduced activity, principally the 8.3% reduction in ED attendances and 3.49% in medical assessment activity in 2015/16. It is expected that the commissioner's schemes for diverting inappropriate activity away from ED will have an impact on activity attracting the lower tariff. As a result the income loss has been reassessed and reflects a reduction of £127k per annum.
Expenditure		
Agency staff	2,347	As a result of the EF development, the Trust is looking to significantly reduce the premium rates it pays as a result of filling vacancies. The majority of this (£1.9 million) relates to nursing staff with a further £0.4m on Medical staff. The target savings are based on workforce modelling by the service identifying opportunities to achieve a figure of 5% of budget spent on premium rates.
Clinical Workforce Model Changes	930	The Trust has reviewed the impact of a reduction in activity on the department and also reviewed shift patterns to work in the new emergency floor.
Nursing savings from co locating UCC and Emergency Floor	211	The Trust has estimated the benefit of efficiencies gained in co locating the UCC with the Emergency Floor. This will need to be confirmed with the CCG in respect of the how the UCC will be procured in the future.

Non clinical workforce changes	230	As a result of co locating UCC and the emergency floor, the Trust has identified savings in reception and portering staff.
Clinical support costs	(734)	As a result of providing dedicated hot lab and radiology facilities to the emergency floor, there is an additional requirement for radiology and pathology staff. This will give additional capacity which will allow the Trust to deliver additional activity in the future at a lower marginal rate.
Equipment revenue costs	(383)	The Trust will look to use existing MES and bed contracts to service additional requirements for beds and medical equipment. In addition to this it has assumed that it will incur maintenance costs for 75% of the Capital equipment assumed. This is due to the fact that not all equipment (e.g. fixtures and fittings) incurs a maintenance cost. Also there are already existing maintenance budgets in the department, therefore the maintenance cost is only additional costs.
Pay and non pay changes from movements in activity	379	Projected pay and non pay costs for 15/16 onwards have been varied in line with activity movements. The projected activity movements will prompt an operational response throughout the life of the case. This response will be consistent with the detailed workforce modelling that has been completed and will be delivered within the total projected cost as a maximum – the exact types, grades and source of resource required will be driven by the actual activity changes experienced.
Depreciation/ Capital Charges/ interest	(1,548)	The additional capital charges have been based on an impaired capital cost. The impairment relates to the costs of demolition and refurbishment and Trust fees.

The Trust has also allowed for the cost of running 5 additional Acute Frail elderly beds. These beds will support commissioners in reducing emergency admissions and are part of the infrastructure that is required to deliver the changes in activity proposed by Better Care Together. The Trust will seek to secure additional funding from commissioners through BCT to develop this model. The Trust has taken a conservative approach in allowing for the costs within this case whilst there is uncertainty about commissioner funding. However, it is an essential part of the way the service will function and negotiations with commissioners regarding the funding will be explored to mitigate the impact.

Table 5.6 20 year scenario Income and Expenditure

FBC Scenario Income & Expenditure	2014/ 15 FOT	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	2029/ 30	2030/ 31	2031/ 32	2032/ 33	2033/ 34
Income																				
ED Tariff	16,090	15,260	15,504	15,473	15,473	15,520	15,520	15,675	15,832	15,990	16,150	16,312	16,475	16,639	16,806	16,974	17,144	17,315	17,488	17,663
CAU, Medical Assessment & Clinics	14,726	14,409	14,189	13,877	13,830	13,849	13,989	14,155	14,322	14,492	14,664	14,838	15,014	15,192	15,372	15,555	15,740	15,927	16,116	16,308
Other Income (RTA, Teaching etc.)	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402	4,402
Total	35,218	34,071	34,095	33,752	33,705	33,771	33,911	34,232	34,556	34,884	35,216	35,551	35,890	36,233	36,580	36,931	37,285	37,644	38,007	38,373
Expenditure - Pay																				
Nursing	13,365	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212	13,212
Nursing Agency	1,406	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390	1,390
Medical Staff	12,798	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652	12,652
Medical Locums	1,059	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
A&C	1,066	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054
Healthcare Assistants	793	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784
Reduction in Agency Costs	-	(840)	(1,844)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)	(2,347)
Workforce efficiencies	-	(356)	(356)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)	(361)
Workforce efficiencies ref New ED Floor	-	-	(270)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)	(1,011)
Additional Staffing Costs - Growth Increase	-	-	-	-	-	-	289	578	578	578	1,155	1,155	1,155	1,155	1,155	1,155	1,700	1,700	1,700	1,700
Additional Staffing Costs - Support Services	-	-	183	734	734	734	734	734	734	734	734	734	734	734	734	734	734	734	734	734
Total	30,486	28,943	27,852	27,153	27,153	27,153	27,442	27,731	27,731	27,731	28,308	28,308	28,308	28,308	28,308	28,308	28,853	28,853	28,853	28,853
Expenditure - Non Pay																				
Clinical supplies	1,306	1,297	1,298	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295
Drugs	808	803	803	801	801	801	801	801	801	801	801	801	801	801	801	801	801	801	801	801
Pathology & Blood	2,058	2,045	2,045	2,041	2,040	2,041	2,041	2,041	2,041	2,041	2,041	2,041	2,041	2,041	2,041	2,041	2,041	2,041	2,041	2,041
Other	915	915	973	1,186	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298
Changes to Non Pay due to Activity	-	-	-	-	-	-	85	210	250	250	290	331	373	414	456	499	542	585	629	673
Total	5,087	5,060	5,119	5,323	5,434	5,436	5,521	5,646	5,686	5,686	5,726	5,767	5,809	5,850	5,892	5,935	5,978	6,021	6,065	6,109
Total Direct Costs	35,573	34,002	32,970	32,476	32,588	32,589	32,963	33,377	33,417	33,417	34,034	34,075	34,117	34,158	34,200	34,243	34,831	34,874	34,918	34,962

FM costs	417	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471
Additional Rental contribution from UCC	-	-	(13)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)
Support Service Costs	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647	3,647
Overheads	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619	6,619
Transformation Funding assumed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction to costs in the Emergency Pathway	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	(177)	(177)	25	637	637	637	637	637	637	637	637	637	637	637	637	637	637	637	637	637
Rate of Return & interest	(45)	473	987	957	910	864	817	771	724	677	631	584	538	491	445	398	352	307	288	268
Total Costs (Baseline)	46,034	45,036	44,707	44,757	44,822	44,777	45,105	45,472	45,466	45,419	45,989	45,984	45,979	45,974	45,969	45,966	46,507	46,506	46,530	46,555
Net (deficit)	(10,817)	(10,964)	(10,611)	(11,005)	(11,117)	(11,006)	(11,194)	(11,240)	(10,910)	(10,535)	(10,773)	(10,432)	(10,089)	(9,740)	(9,389)	(9,035)	(9,222)	(8,862)	(8,524)	(8,182)

This analysis shows that the development helps the Trust manage the impact of a significant reduction in activity and maintains its income and expenditure position despite the reduction in income. Without this development the level of efficiencies would not have been made and the financial position of the department would have been significantly worse. Overall the deficit position for this service is managed in the context of the overall Trust financial position. In line with the strategic plan and submitted LTFM for the organisation, efficiencies will be found across the whole Trust to enable the organisation to become financially viable. Ongoing CIP programmes support this as well as more radical transformation programmes, including relocation of services. Construction of tariff and payment mechanisms may not mean each silo of the business is in surplus at any given time.

5.5. Workforce Plan

Key to delivery within financial balance is the development of an appropriate workforce to support activity levels within the new Emergency Floor. The workforce plan has been developed in line with assumptions made in the OBC and fully aligns with the capacity and financial models presented in this FBC. The detailed workforce plan is attached at Appendix 5C. This plan describes the overarching process for determining the proposed revenue cost reduction and includes details of both financial and non financial benefits arising from the development of the emergency floor. The plan also includes potential risks and actions to mitigate these.

The workforce plan reflects a new model of care (described in detail in section 2.13) which requires changes to UHL's culture. Whilst there is a risk that the culture of the organisation will not change; this has been minimised since new models of care are starting to be embedded where possible, in advance of the new facilities. Ernst & Young are supporting UHL to make quantifiable change. This is endorsed through the Emergency Quality Steering Group.

The Trust has an overarching five year workforce plan for 2014-19. The plan has six core themes:

- ▶ Safe Staffing Models
- ▶ Reduction in dependency on non contracted workforce
- ▶ Implications of seven day service provision
- ▶ Changing models of urgent and emergency care pathways
- ▶ Movement of core secondary care activity from the acute setting
- ▶ Increased specialised services within the acute setting.

The first four themes are particularly relevant to the Emergency Floor plan.

- ▶ **Safe Staffing Models:** in determining workforce changes that could potentially arise from improvements in productivity, care has been taken to ensure safe staffing principles underpin the changes i.e. ensuring minimum shift coverage/ adopting the use of acuity tools.
- ▶ **Reduction in dependency on non contracted workforce:** in common with many emergency departments, the national shortage of both suitably qualified medical and nursing staff has led to increased expenditure on the non contracted workforce. Significant improvements have been made in recent months and further improvement is expected as outlined in this case.
- ▶ **Seven day services:** the emergency care pathway is covered by the Keogh Seven Day Service standards which established minimum standards of intervention times for core staff groups to ensure appropriate and timely decision making. UHL is currently progressing towards these standards and the workforce plan for the Emergency Floor is predicated on assumed flow from the emergency department to base wards.
- ▶ **Changing models of urgent and emergency care pathways:** The workforce model is predicated on best practice identified in both the ECIST model and

through advice and guidance provided by Dr Ian Sturgess. These models of care are referenced in the detailed workforce plan.

A number of assumptions have been built into the workforce planning processes for the Full Business Case for the Emergency Floor. Overall the aim of the workforce plan is to:

- ▶ Ensure the appropriate supply and skill mix to consistently deliver the 95% ED target, and a number of individual key performance indicators within different components of the Emergency Floor e.g. 95% of patients to be discharged from Minors within 2 hours
- ▶ Ensure the right staffing levels are available in all components of the floor to ensure the correct 'gearing' to achieve the identified standards and manage surges in activity
- ▶ To ensure an efficient model of workforce provided at less cost per activity than the current model
- ▶ To ensure the workforce model provides an education, training and career framework model that supports a sustainable future supply of workforce, taking into consideration the fragility of the ED workforce and the need to recruit and retain in the future.

The assumptions in the planning process are:

- ▶ All steps in the process need to add value to ensuring the correct dispersal of patients
- ▶ Safe staffing levels will be driven by the changes in physical location including increased bays and bed capacity in addition to the impact of increased productivity
- ▶ 80% of patients entering as ambulant patients should experience no wait and no delay
- ▶ Minors should aim to run to 2 hours to dispersal not the current 4 hour position
- ▶ It will be assumed that the IT system will link to the GP system and the Emergency Department will be an early adopter of the Trust's Electronic Patient Record
- ▶ An appropriate imaging facility will be available in MIAMI to ensure rapid assessment of patients
- ▶ TAKT timings should underpin and drive calculations of capacity requirements together with modelling of clinical activity which has been appropriately profiled
- ▶ Specialties need to be aligned to ensure rapid turnaround e.g. appropriate in reach models and preparation to receive patients. ED must not be regarded as a holding area
- ▶ A hot lab facility will be available which would allow blood test results to be generated in 40 minutes. This will impact on HCA time as results will be expected to be right first time

- ▶ Wherever possible knowledge of patients should be transmitted to ED in advance of arrival
- ▶ Bed Bureau patients will be diverted directly to the GP Assessment Area rather than through the ED
- ▶ The department will enhance its reputation as a learning and training environment by creating clear career pathways in order to mitigate against retention issues and escalating non contracted pay issues

Taking into consideration these assumptions, work has taken place to model predicted activity levels within each part of the ED function, calculate processing times and use these as the basis for calculating numbers of staff required. This modelling was based on detailed operating procedures in order to ensure new models of care drive the workforce model rather than current patterns of workforce.

Detailed plans are being prepared to ensure that the workforce savings are realistic and achievable. Simul8 modelling is assisting in testing these assumptions. The agency reductions are based on detailed recruitment plans which forecast demand and supply and plans are in place to improve the closure of gaps including international recruitment. Assumptions have also been made regarding the fill rates from the ED training programme regarding the ability to fill ST4 plus and consultant posts in the longer term. Recruitment and retention premia are also in place to support recruitment challenges.

Risks exist in terms of increased demand regionally and nationally for ED nurses. It should be recognised that professional judgement will need to be applied to ensure risks to ongoing supply are managed. For example the medical staffing model requires 5-10 years of education to deliver the required skilled consultant workforce and reducing levels of junior medical staff to reflect reductions in activity in years one to five could stifle the workforce supply for subsequent years. There are plans to build on current recruitment successes and to recruit internally and therefore achieve a more cost effective strategy through avoidance of agency fees. A good programme of recruiting via NHS jobs is in place and there are links to secure placements from the college of emergency medicine. Both these options have the ability to reduce the cost of employing international staff as factored into the FBC. Incentives are made to consultant staff to aid recruitment and retention and this includes suitable flexible relocation packages. A successful recruitment strategy of other staff members is underway – this includes R&R premia paid to Band 5 nursing staff in Adult ED introduced in 2013/14 which has been extended to Paeds ED nursing staff in the last quarter of 2014/15.

It is recognised that the creation of a designated Imaging suite within the Emergency Floor will increase the workforce costs for that area; however the detailed workforce analysis identified an offset in this cost by increased productivity for the ED Consultants, who will no longer need to verify the X-rays the following working day.

5.5.1 Uplift in Workforce for Imaging

Reporting Radiographers

Imaging is proposing an uplift in reporting radiographers to the Emergency radiology team, in order to provide a hot reporting service to ED.

This model of working forms part of the recommendation of the Trust's critical safety actions on results. Musculoskeletal (MSK) X-rays are reported immediately following the attendance in the X-ray room giving the ED clinician immediate access to a formal report. Currently the reports are reviewed by a radiologist within 48 hours, and then the results are checked by an ED Doctor; consequently a percentage of patients are recalled with missed fractures. Removing the need for this process does provide some cost saving in ED, and improved patient safety and experience.

This is a quality initiative and forms part of the Imaging team's workforce strategy. Strengthening the Reporting radiographer team will provide cost effective and high quality imaging reporting services.

Radiographers

Two X-ray rooms and 2 CT rooms are being transferred from their current location and will be staffed by their current complement of radiographers. However 2 additional X-ray rooms are included in the new Emergency Floor which cannot be covered from within the existing workforce. It is proposed that the additional rooms are staffed at a mixed skill level from 4 - 6 to match the current skill mix within Imaging. This has been benchmarked as a low banded mix and at low levels compared to other similar hospitals.

The addition of these two rooms will prevent the build up of queues and improve patient flow through ED.

Radiography Assistants

Support staff to be working in a pool across all areas.

Receptionists

The waiting room is situated out of sight of the Imaging staff, therefore an increased number of reception staff is required to ensure patients are safe and a presence is felt in the department. This was agreed as part of the negotiations around the location of the waiting room at a distance from the Imaging rooms which was felt presented a risk which needed to be mitigated by the addition of extra reception cover.

5.5.2 Uplift in Workforce for Pathology

The Emergency Floor laboratory will provide an improved turnaround for all routine bloods from the emergency floor. This will improve patient safety and clinical outcomes, as well as reducing risk and waiting times. ED staff will also be able to work more efficiently as the requirement for near patient testing will be removed, and so staff will be able to spend their time treating patients rather than testing blood samples themselves.

Due to the size of the Hot Lab, this facility is only able to provide a service for the Emergency Floor and therefore the existing laboratory will have to remain open 24/7 to service the rest of the hospital. The Emergency Floor facility will be staffed as a subsidiary hot lab and additional staffing has been requested to ensure the 24 hours a day, 7 days a week service requirement is achieved.

5.6. Impact on Trust Balance Sheet

The table below sets out the impact on the Trust's balance sheet. Further details to support these figures are within Appendix 5A.

Table 5.7 Impact on Trust's Balance Sheet

	2013 /14 £	2014 /15 £	2015 /16 £	2016 /17 £	2017 /18 £
Assets Under Construction	568,764	6,368,024	17,698,095	18,341,114	353,030
Impairments on new building coming into use (DV likely revaluation)				- 15,718,000	
Impairment on partial demolition of Victoria based m ²		-2,424,261			
Depreciation				-201,870	-807,481
Change to Fixed Assets	568,764	3,943,762	17,698,095	2,421,244	-454,450

N.B. The table above does not include 18/19 as there is no further capital expenditure or impairments assumed beyond 17/18.

As can be seen, the demolition of part of the existing Victoria Building will lead to an impairment in the first instance and this has been based on the square meterage demolished as a percentage of the total building area.

The new Emergency Floor project is expected to be available in June 2017. Prior to this it is treated as an asset under construction.

Once fully operational, we have assumed that as a result of the District Valuer valuation there will be an impairment of 38%. The value of these impairments and the calculation of the new asset impairment value is shown below.

Table 5.8 Value of Impairments

Impairments	£K
Demolitions	2,424
New asset coming into use	15,718
Total	18,142

The impairment of the new asset has been calculated as follows:

Table 5.9 Calculation of Impairment Value

Item	£K
Total capital cost excluding equipment	40,926
Impaired Items	
Planning contingency	2,000
Fees	4,678
Demolitions	3,600
Refurbishment costs	5,440
Total Impairment	15,718
Remaining Value	25,208
Impairment	38%

5.7. Capital Charges

Below we set out the calculations which underpin the capital charge calculations which are shown within the I&E at table 5.6. Further details to support these figures are within Appendix 5A.

Table 5.10 Capital Charge Summary

	2014 /15 £	2015 /16 £	2016 /17 £	2017 /18 £	2018/19 £	2019/20 £
New depreciation	0	0	201,870	807,481	807,481	807,481
Reduction in depreciation re demolition	-177,031	-177,031	-177,031	-170,071	-170,071	-170,071
Change in depreciation	-177,031	-177,031	24,839	637,410	637,410	637,410
Reduction in RoR re demolition	-114,051	-114,051	-114,051	-114,051	-114,051	-114,051
RoR / interest on new build	69,016	587,215	1,101,217	1,070,789	1,024,339	977,778
Change in rate of return/ interest	-45,035	473,164	987,166	956,739	910,289	863,728

5.8. Sensitivity

A key sensitivity for the Trust is the activity levels. The Trust has set out in Section 5.4 the impact on the I&E position of activity based on the Better Care Together scenario. This assumes a 7.3% reduction in activity in 2015/16, and this has to be contrasted with an underlying increase in ED activity of circa 8%. An 8% increase in activity approximately equates to an increase in income of £3 million. The Trust has assumed that the cost of delivering the additional activity would be circa £1.65 million. Any level of activity higher than that assumed in the business case therefore will improve the Trust's income and expenditure position.

Other sensitivities include:

- ▶ increases in capital costs
- ▶ failure to deliver overall projected I&E position

Increases to capital costs are unlikely to be significant, given that the Trust has a Guaranteed Maximum Price (GMP). Outside of the GMP there is a contingency which is intended to fund anything outside of the assumptions stated in building up the GMP. Any increase in costs will therefore be small and will be unlikely to have revenue consequence as a result of the driver behind the increase in costs is unlikely to add value to the asset. If the Trust is unable to identify sufficient savings to mitigate the increase an increase in costs will have an impact on the Trust's operational capital programme. The Trust would therefore need to reprioritise other expenditure to manage the cost pressure including expenditure within ED.

Failure to achieve I&E position: the Trust has developed a detailed plan to achieve the required efficiency savings. There are also a number of areas where costs are assumed to increase (clinical support costs and equipment maintenance). Any failure to achieve FBC savings will be reviewed in the context of the total financial position relating to the business case, the focus being to ensure that the total savings identified can be achieved and increase in costs minimised. If one area fails to deliver savings additional savings or reduced costs will be sought elsewhere. The work around identifying additional savings will be on-going to improve the overall financial position. A major sensitivity is the impairment on the new development. The Trust has a sound methodology for calculating this, highlighted in Section 5.6 However, for every £1million valuation higher than anticipated the capital charges would be £57500 per annum (in year 1) more.

Linked to the development there are other related factors which have not been included in the financial analysis such as penalties for waiting times and ambulance turnaround. The Trust has incurred £4.6 million of fines to December in 2014/15, albeit that some of these fines are returned to the Trust and reinvested. It is expected that the EF development will address some of these issues and the level of fines will fall accordingly. Fines are expected to reduce (which is an upside risk) but cause and effect on performance of this business case in isolation is very subjective and it is not possible to accurately predict how much the fines will reduce as a consequence of this case. Thus the Trust has chosen to exclude reduced fines from the cash releasing benefits in the case.

Table 5.11 illustrates the impact of the sensitivities discussed above and summarises the mitigation strategy the Trust will adopt.

Table 5.11 Sensitivity Analysis on Revenue Assumptions

Area	Annual Impact on I&E	Mitigation/ Comment
Activity – 1% increase in activity	Improvement of £168,000	This may be understated depending on when step costs need to be allowed for
Increase in capital costs of 5% = £2.1 million	None	The Trust would initially look to compensate for any increase with reductions in the cost of the scheme elsewhere. Failing this the Trust would need to review its operational capital programme to remain within its overall capital limit. Despite the Trust having an agreed GMP, there are costs outside of this e.g. equipment, eventual VAT Recovery position; therefore a small increase in capital costs is possible.

Area	Annual Impact on I&E	Mitigation/ Comment
Failure to make efficiency savings – 10%	£372,000	Within the overall assumption of £3.72 million there are a number of different areas for efficiency gains. Overall the Trust has taken a realistic view on what savings can be made, if efficiency savings are not delivered in one area the Trust will review how that can be made up elsewhere
Additional costs are overstated – 10%	£111,000	Additional clinical support costs have been derived in some isolation (e.g. radiology) and the Trust therefore may make gains as a result of other developments. In addition to this the Trust has assumed an additional £150,000 per annum on equipment maintenance. On which the Trust can look to existing budgets to cover some of this cost
Impairment assumed over stated by £1 million	£57,500	If valuer assumes a higher value than anticipated – discuss with valuer and reconcile back to methodology assumed. The Trust calculation assumes a value including VAT which may be excluded for valuation purposes

5.9. Affordability

In developing the FBC efficiencies have been identified which demonstrates the case is affordable to the Trust from a revenue income and expenditure perspective.

However, the Trust has been given guidance from the Department of Health, via the TDA, that the main affordability assessment of the case has to assume use of Interest Bearing Debt (IBD) as opposed to Public Dividend Capital (PDC).

As a consequence of this assumption there is a material impact on the ability the Trust has to manage the cash impact of making loan repayments. The Trust will need to make loan repayments starting in 2015/16 which total £1.58 million per year by 2018/19. Due to the current deficit position of the Trust, with no material cash reserves, it cannot generate the funds to repay this loan. In order to do so it would therefore need to:

- ▶ Reduce its capital expenditure by the £1.58 million per annum to fund the loan repayment until the deficit is removed
- ▶ Allow creditors (by delaying payments to suppliers) to increase to release cash
- ▶ Seek further cash funding in addition to borrowing requirements as a result of the deficit position

In light of this the Trust has reviewed the TDA's capital investment guidance which states the following:

‘Under the capital regime additional capital is available through loans or PDC made available through DH central programmes. However, in exceptional circumstances, where loans are deemed unaffordable, the NHS TDA may approach the DH to provide financing in the form of PDC.

Where investments cannot be financed from a NHS Trusts own resources and it cannot afford a Capital Investment Loan (CIL), PDC may be available in some exceptional circumstances such as those detailed below:

- *for patient health and safety reasons where remedial action is required*
- *following, for example, recommendations from the Care Quality Commission;*
- *there is already a clear contractual commitment that must be fulfilled*
- *(i.e. existing work requires completion);*
- *there is an agreed service reconfiguration / rationalisation;*
- *the expenditure forms part of a national programme;*
- *the expenditure is required to support the delivery of Quality,*
- *Innovation, Productivity and Prevention (QIPP) targets and demonstrates real and deliverable savings in the future;*

The NHS TDA will consider and put forward cases for Exceptional PDC to DH in circumstances where NHS Trusts are experiencing a critical operational requirement, financial distress or failure, where a NHS Trust has failed a PBA and/or where a major capital scheme forms part of the financial recovery of the NHS Trust.

Based on this guidance the Trust is clear that there is justification to support the use of PDC in funding this development. If the application for PDC is not supported by the TDA or the DH it is felt that the only practical solution to financing the cash impact would be further financial support to enable it to continue to invest in operational capital at the appropriate level and pay suppliers in accordance with NHS policy.

5.10. Comparison of IBD and PDC financing

Section 5.9 explores the affordability of the scheme using Interest Bearing Debt (IBD). This section demonstrates the differences between IBD and PDC on both income and expenditure and the Trust's cash position.

In calculating the impact of IBD we have assumed the following and reflected this in the analysis below:

- ▶ The first drawdown is in mid 2015/16 and thereafter mid year
- ▶ Interest rates are between 2.89% and 2.96% dependent on the length of the loan. and are based on the Government Works Loan rates for equal annual payments
- ▶ The loan will be for a 25 year period from the first drawdown, later draw downs will be timed to be paid off at the same time as the first draw down.

Using IBD the Trust will not incur the rate of return charge of 3.5% pa that it would with PDC. Over time as the value of the investment exceeds outstanding debt, the Trust

will pay a return on asset charge (3.5%) on the difference. This is expected to occur in 2031/32.

The loan financing is c£200k pa more expensive in revenue terms than PDC financing.

Table 5.12 Revenue impact of IBD vs PDC

	2014 /15 £	2015 /16 £	2016 /17 £	2017 /18 £	2018/19 £	2019/20 £
PDC	-	-447,748	-799,837	-834,256	-812,172	-783,910
Loan Interest	-	587,215	1,101,217	1,070,789	1,024,339	977,778
Additional Cost of a loan	-	139,466	301,380	236,534	212,167	193,868

However, the cash implication of a loan option has a material impact and the modelling on this is set out below.

Table 5.13 Cash impact of IBD vs PDC

	2014 /15 £	2015 /16 £	2016 /17 £	2017 /18 £	2018/19 £	2019/20 £
Cash Loan repayment	-	400,774	1,183,655	1,573,436	1,581,111	1,581,111
Loan interest	-	587,215	1,101,217	1,070,789	1,024,339	977,778
Cash payment Return on Asset	-	-447,748	-799,837	-834,256	-812,172	-783,910
Additional Cash Impact of a loan	-	540,241	1,485,036	1,809,970	1,793,279	1,774,979

5.11. VAT Recovery

Following various meetings held with the NHS Strategic VAT Advisor Colin Hall on 22nd December 2014 and 26th February 2015, and various email correspondence; the table below shows the current estimated VAT Recovery position as at 27th February 2015. This is based on the advice provided by Colin Hall, is subject to VAT Regulations and will be reviewed at the end of each financial year during the project.

The current advice as at 27th February 2015 anticipates that the level of VAT Recovery in the FBC will be achieved. Additional information can be found in the Estates Annex at Appendix 2Q.

Table 5.14 VAT Recovery

	Value (£)	VAT (20%)	Recovery (%)	Total (£)	Comment
Works Cost	26,997,101	5,399,420	7.75	418,455	As C. Hall advice 26/02/15
PSCP fees	3,812,550	762,510	7.75	59,095	As C. Hall advice 26/02/15
Trust fees	911,718	182,344	100	182,344	100% recovery allowed on Trust Direct fees
Non Works Costs	63,351	12,670	0	0	To be assessed if spent
Equipment	2,002,672	400,534	0	0	As C. Hall advice 26/02/15 – only charitable trust is VAT recoverable
Planning Contingency (Trust Risk Generally)	580,000	116,000	0	0	To be assessed if spent
Planning Contingency (Trust Risk Asbestos)	455,500	91,100	7.75	7,060	100% recovery allowed and included in overall recovery % of 7.75%
PSCP Risk	1,056,428	211,286	0	0	To be assessed if spent
Inflation	781,099	156,220	7.75	12,107	As C. Hall advice 26/02/15
Total	36,660,419	7,332,084			
Current Estimated Total of VAT Recovery				679,060	
Amount of VAT Recovery in FBC				663,475	
Difference				15,585	

5.12. Long Term Financial Model

The Trust submitted an LTFM in June 2014 in support of the IBP. The LTFM is continuously being refreshed for various purposes including supporting business case submissions and their approval by the appropriate authorities. The updated LTFM can be found at Appendix 5D and a review of the impact of this FBC on the LTFM can be found at Appendix 5E.

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 proposed Emergency Floor development, the associated other service relocations required as a result of the decanting moves, service operational changes, and to secure the benefits sought through the investment.

PRINCE2 methodology is being applied to this project.

6.2 Project Governance Arrangements

Project Governance arrangements have been established to reflect the Trust's Project Management Plan for the delivery of capital investment, as shown in the diagram below:

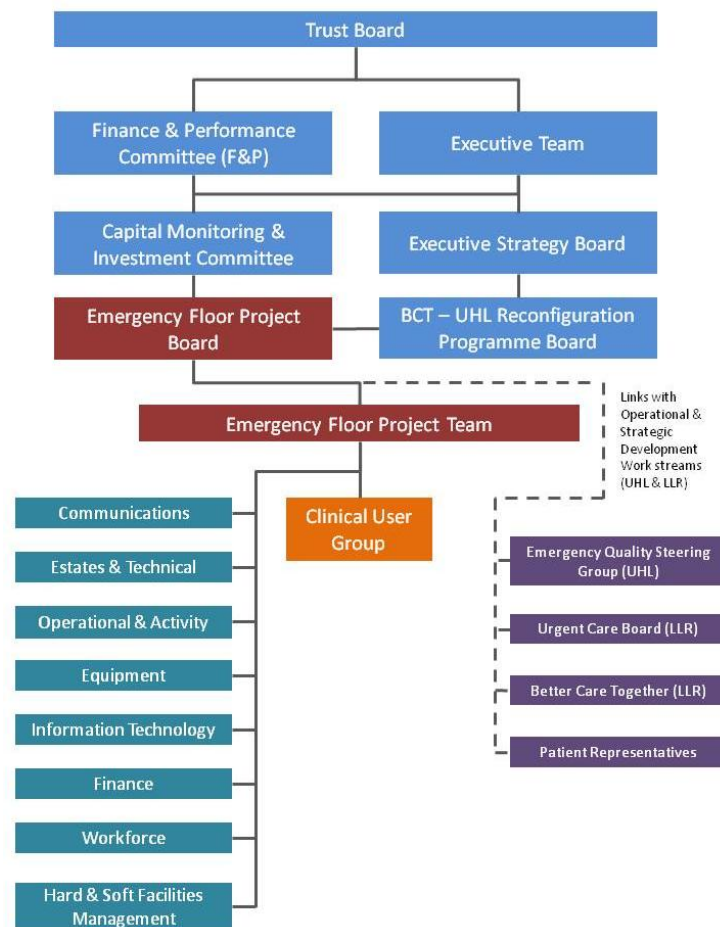


Figure 6.A Project Governance

6.3 Outline Project Roles & Responsibilities

Key Project delivery roles are described below:

- ▶ **Senior Responsible Owner (SRO):** This role is being performed by John Adler (Chief Executive), with responsibility to the Executive Trust Board for delivery of the project to meet their terms of reference. Kevin Harris (Medical Director) chairs the Project Board.
- ▶ **Senior User:** This role is being performed by Ian Lawrence (Clinical Director for the Emergency & Specialist Medicine CMG), with responsibility for ensuring that the project maintains alignment with the service and business targets described in the Business Case and working within the terms of reference set by the Project Board.
- ▶ **Project Director:** This role is being performed by Nicky Topham (Project Director) with overall responsibility for delivery of the project in accordance with the project brief.
- ▶ **Development Project Manager:** This role is being performed by Phil Tranter (Project Manager for Rider Levett Bucknall), who will have day to day responsibility for administration of the development of the project (within the delegated role permitted by Project Board).
- ▶ **Service Project Managers:** Senior managers from the ED and associated departments that are proposed to make up the Emergency Floor solution will undertake this role, having day to day responsibility for providing advice on the service brief to the development team and for planning and delivery of service and workforce change under the direction of the Senior User.

Regular Progress Reports are submitted to the Capital Planning Group, Executive Strategy Board and Trust Board for onward reporting and management within the established Trust management structure.

6.3.1 Core Groups & Responsibilities

A Project Execution Plan (PEP, included at Appendix 6A) has been prepared to provide detailed information on proposed project management arrangements, including:

- ▶ Aims and objectives
- ▶ Benefits and constraints
- ▶ Organisation
- ▶ Roles and responsibilities
- ▶ Detailed programme for stage activities
- ▶ Risk management arrangements
- ▶ Statutory Approvals and Quality Standards
- ▶ Project Communications

The roles and responsibilities for the main project groups are summarised as follows:

Executive Strategy Board (ESB)

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

- ▶ Advising the Trust Board on formulating strategy for the organisation.
- ▶ Ensuring 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.
- ▶ Leading the Trust executively, in accordance with the Trust's shared values, to deliver the Trust's vision and, in doing so, help shape a positive culture for the organisation.

Emergency Floor Project Board

The membership of the Project Board is:

Table 6.1 Emergency Floor Project Board Membership

Member	Title
Dr Kevin Harris	Chair/ Medical Director
Richard Kinnersley	Major Capital Projects Technical Director, UHL
Nicky Topham	Project Director/ Programme Director of Reconfiguration, UHL
Paul Traynor	Director of Finance
Phil Walmsley	Head of Operations
Dr. Ian Lawrence/ Jane Edyvean	Senior User/ Emergency & Specialist Medicine CMG Representative
Dr. Andrew Furlong	Senior User/ Deputy Medical Director
Dr. David Yoemanson	Senior User/ Woman's & Children's Divisional Representative
John Clarke	Chief Information Officer
Ian Crowe	Non Executive Director
Michael Pepperman	Healthwatch representative
Tiff Jones	Head of Communications

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

Monthly progress reports, including projections of forthcoming key activities and decisions, will be submitted to the Project Board by the Project Director. The standing agenda will be as follows:

- ▶ Apologies
- ▶ Minutes of Previous Meeting
- ▶ Matters Arising
- ▶ Highlight Progress Report
- ▶ Work-stream updates:
 - ♦ Operational issues – including workforce and clinical commissioning
 - ♦ Procurement
 - ♦ Finance
 - ♦ IM&T
 - ♦ Design & Construction
 - ♦ Stakeholders and Communications
- ▶ Any other business
- ▶ Date of Next Meeting

Emergency Floor Project Team Meeting

The membership of the Emergency Floor Project Team Meeting is the work-stream leads:

Table 6.2 Emergency Floor Project Team Membership

Member	Title	Role (work-stream lead)
Nicky Topham	Project Director, UHL	Chair
Richard Kinnersley	Major Capital Projects Technical Director, UHL	Estates & Technical
Jane Edyvean	CMG General manager	Workforce, activity & clinical commissioning
John Clarke	Chief Information Officer	IT
Richard Pitt	Head of Procurement	Equipment
Tiff Jones	Communications Manager	Communications
Louise Gallagher	Workforce manager	Workforce professional advisor
Paul Gowdridge	Head of Strategic Finance	Finance

Member	Title	Role (work-stream lead)
TBC	Interserve FM	Hard & Soft FM

This fortnightly group is a designated committee appointed by the Project Board, with responsibilities which ensures:

- ▶ Operational delivery of the scheme to time, quality and budget.
- ▶ Decision on matters for escalation for ESB and Trust Board direction/ information
- ▶ Management of risks and issues and escalation of appropriate matters for executive direction/ approval
- ▶ Drawing together the outputs of the Working Groups and coordination of cross cutting issues

Working Groups

Working Groups will be convened by the leads as above to provide advice and direction to the detailed design process. Their roles can be summarised as follows:

- ▶ **Estates & Technical Group:** This group will be led by the Trust's appointed Senior Supplier and Contractor, Interserve Construction Ltd, and will be responsible for:
 - ♦ Managing design progress and coordination issues
 - ♦ Identifying key matters for Trust assistance/ decision making
 - ♦ Identifying design risks and issues for management and if appropriate escalation to the project team
 - ♦ Service Development: Representing clinical services, responsibilities will include:
 - Provide comment to the Project Manager on Reviewable Design Information
 - Liaise with Infection Control to gain advice on final product/ detail selection issues
 - Refinement of Operational Policy(s)
 - Support the work of the Equipping process in preparation of key stage documents
- ▶ **Operational management:** This group will be responsible for the clinical operational aspects and delivery of the scheme. This will include:
 - ♦ Agreement of activity
 - ♦ Creation of the workforce plan and delivery of the models to achieve the agreed efficiencies
 - ♦ Clinical commissioning e.g. training, orientation

- ▶ **Equipping Group:** This group will be responsible for confirmation and procurement of equipment required for the operational needs of the Emergency Floor development. This will include:
 - ♦ Producing equipment schedules
 - ♦ Planning the procuring of equipment in accordance with the Trusts SFIs and SOs and to ensure compliance with BREEAM obligations
 - ♦ Planning the commissioning of equipment
 - ♦ Understanding the transfer requirements of existing equipment/ furniture (as appropriate)
- ▶ **Hard & Soft Facilities Management:** This group will represent the needs of hard and soft FM for the development of the Emergency Floor, and will provide the following support:
 - ♦ Providing comments to the Project Manager on reviewable design Information
 - ♦ Advising on FM related fittings, fixtures and equipping selection as part of the detailed design process
 - ♦ Updating whole hospital policies and service agreements to reflect the departmental operation of the proposed Emergency Floor
 - ♦ Advising on risks or issues which may threaten the success of the scheme
 - ♦ Managing delivery of client related BREEAM obligations
- ▶ **Information Management & Technology:** This group will be responsible for ensuring that voice and data requirements are delivered for the scheme, along with advice on equipment which is linked with communications (e.g. Electronic Paper Records (EPR) System, CCTV, entry systems, BMS etc). This will cover the following:
 - ♦ Addressing any queries from the Design Team in relation to the design of cabling and associated works
 - ♦ Reviewing any design information in relation to ICT
 - ♦ Planning the transfer and commissioning of voice and data provision from the existing operating locations to the new development
- ▶ **Communications:** This group is responsible for the delivery of the communications strategy. This will include:
 - ♦ Proactive communications for internal & external audiences on a regular basis (see Section 6.5)

Emergency Floor Clinical User Group

The membership of the Clinical User Group is:

Table 6.3 Emergency Floor Project Steering Group Membership

Member	Title
Nicky Topham	Project Director

Member	Title
Steve Kennedy	Design Manager – Interserve Construction
Roger Bancroft	Construction Project Manager – Interserve Construction
Aaron Vogel	Emergency Planning Officer
Andrew Rickett	Clinical Lead Imaging
Andy Coser	ED Matron
Angus McGregor	Clinical Lead Pathology
Anna Duke	Paediatric ED Matron
Anne Freestone	Pathology
Ben Teasdale	Clinical Lead ED
Cathy Lea	Imaging Service Manager
Chris Wighton	Clinical Lead SSPAU
Claire Ellwood	Clinical Lead Pharmacy
Colin Ross	Imaging
David Jenkins	Infection Prevention
Emily Laithwaite	Clinical Lead EFU / AFU
Geraldine Burdett	Clinical Lead Mental Health
Ian Lawrence	Emergency Medicine Medical Lead
Jane Edyvean	Emergency Medicine CMG Manager
Jay Banerjee	ED Consultant
Joyce Burns	Clinical Lead Ophthalmology
Julie Burdett	RAU / ACB / GP Initial Assessment
Kerry Morgan	ED Deputy Head of Nursing
Kim Wilding	Clinical Lead UCC
Lee Brentnall	EMAS Representative
Lee Walker	Clinical Lead Medical Assessment
Lisa Lane	ED Deputy Head of Nursing
Liz Collins	Infection Prevention
Marianne Elloy	Clinical Lead ENT
Mark Williams	Clinical Lead EDU
Mike Dunn	Radiation Protection Advisor
Paula Knowles	EDU Matron
Rachel Williams	ED Senior Service Manager
Sam Jones	Clinical Lead Paeds ED
Simon Conroy	EFU/ AFU
Tee Taylor	SSPAU Matron

Member	Title
Vicki Enright	ED and Medical Assessment Operational Manager

This group will be chaired by the Project Director. Key roles and responsibilities will include:

- ▶ Day to day responsibility for the clinical delivery of the project to meet the parameters described within the business case
- ▶ Provision of appropriate reports on status to the Project Director
- ▶ Providing working groups with detailed briefs
- ▶ Ensure continuing commitment of stakeholders, both internal and external

The group will meet monthly or more frequently as required in accordance with the phase of the project.

6.3.2 Project Plan

The Project Programme is intended to deliver the project by summer 2017, though this timeline is predicated on meeting key submission and approval dates to both the Trust Board and NTDA. Delivery of the new models of care is predicated on the opening of the new Emergency Floor and therefore expediency of delivery is essential, in order to ensure an improved patient pathway, a quality environment and achievement of the Trust's targets.

The construction programme (Appendix 6B) identifies the construction timeline for the Phase 1 new build, and a timeline for the Phase 2 refurbishment works based on the drawn solution.

Table 6.4 Project Milestones

Milestone	Date
Commence isolation, diversion, demolition works	December 2014
NTDA approval of Developed Outline Business Case	March 2015
Trust Board approval of Full Business Case	April 2015
NTDA Capital Investment Group approval of Full Business Case	April 2015
NTDA Board approval of the Full Business Case	May 2015
Isolation, Diversion, Demolition complete	June 2015
Commence construction (Phase 1 – ED)	July 2015
Complete construction (Phase 1 – ED)	Winter 2016

Commence construction (Phase 2 – Medical Assessment & Frailty Units)	January 2017
Complete construction (Phase 2 – Medical Assessment & Frailty Units)	Summer 2017

6.4 Use of Special Advisors

Special advisers have been used in a timely and cost-effective manner in accordance with the Treasury Guidance. Procurement of Interserve Construction Ltd has been endorsed by Beachcrofts, the trust's legal advisors. (Appendix 6F)

Table 6.5 External Advisors

Emergency Floor Development		
1	Interserve Construction Ltd	Building/ Construction Supervisors
2	Interserve Engineering Services	MEP Detailed Design & Installation
3	Rider Levett Bucknall	Trust Project Management & Cost Advisors
4	Capita	Architects
5	Capita	Cost Consultants
6	Capita	Business case / Finance analysis
7	Capita	Structural Engineers
8	Capita	Mechanical and Electrical Engineers
9	Capita	CDM

6.5 Stakeholder Engagement

A Communications Strategy (Appendix 6C) has been developed in consultation with the Trust's Communications and Marketing Team; this identifies key stakeholder groups and key messages that need to be shared at key milestones in the project. This is an extremely important plan for the Trust since the Emergency Floor project represents the first large capital project being undertaken as part of a wider Trust reconfiguration plan.

Stakeholders have been identified as follows:

Table 6.6 Key Project Stakeholders

NHS Staff	Patients
UHL – all staff	Patients and Visitors
LRI – all staff, especially those working in ED, Medical Assessment and Frailty Units	Patient Representatives – Healthwatch
GPs and other referrers	UHL Patient Advisors

CCGs	UHL Volunteers
Service Providers – Interserve FM, staff from George Elliot Hospital Trust	
External Stakeholders	General
Leicester City Council	People living in Leicester and the surrounding areas
League of Nurses	The general public
Heritage Groups	The media – print, TV and radio
MPs & Ward Councillors	
NHS Trust Development Authority (NTDA)	
Local Area Team (LAT)	
Age Concern & Age UK	
University of Leicester	
Conservation Area Advisory Panel	
Professional Groups	
Royal Colleges	

Methods of communicating information about the Project to various Stakeholders are detailed below:

6.5.1 Internal

- ▶ **Face to face briefings:** These should be used as the primary source of communication with staff
- ▶ **INsite pages:** A section on the Emergency Floor reconfiguration project can be included on the staff intranet 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.

6.5.2 External

- ▶ **Social media:** Utilising the Trust's Twitter and Facebook accounts
- ▶ **Website:** A section on the Emergency Floor reconfiguration 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**
- ▶ **University Hospitals of Leicester Membership:** A group of over 14,000 local people who have expressed an interest in what we do. Members are representative of Leicester's population in terms of sex, ethnicity and age.

6.5.3 Clinical

Clinical representatives from the Emergency Department, Urgent Care Centre, Short Stay Assessment Units and clinical Support Services have been fully involved in the project since conception; as well as relevant external organisations such as East Midlands Ambulance Service (EMAS). Clinical input has been sought and received for all key aspects of the project including investment objectives, options appraisal, models of care, operational policies, clinical adjacencies, 1:200 and 1:50 layouts, equipment lists, fittings and finishes. A wide range of staff members have been consulted, including nurses (e.g. Simon Standen, Matt Wensley, Donna Pywell, Matthew Hull), matrons (e.g. Anne Duke, Kerry Morgan, Lisa Lane, Andy Coser, Julie Burdett) and consultants (e.g. Dr. Catherine Free, Dr. Lee Walker, Dr. Simon Conroy, Dr. Emily Laithwaite, Dr. Jay Banerjee, Dr. Ben Teasdale, Dr. Mark Williams, Dr. Sam Jones, Dr. Chris Wighton, Dr. Andy Rickett, Dr. Anne Freestone, Dr. Joyce Burns). A full list of the clinicians who formed the Clinical Steering Group and their roles/ titles can be found in Section 6.3.

6.5.4 Infection Prevention

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

- ▶ provision of side rooms, barrier nursing rooms, en-suite toilets & shower rooms
- ▶ decontamination room and associated services
- ▶ locations and quantity of clean & dirty utility rooms, disposal holds
- ▶ floor, wall and ceiling finishes
- ▶ fittings and fixtures including door tracks
- ▶ supply of potable water including tank & piping
- ▶ ventilation

6.5.5 Security

Representatives from UHL's security staff as well as the local police service have been consulted on the project and the design solution. Specific input was provided regarding

the location of a security office at the adult ED front door, as well as identifying suitable positions for security staff to base themselves to view the adult and paediatric waiting rooms. Security representatives also advised on the following:

- ▶ CCTV coverage both inside and outside the new ED
- ▶ Safety of staff including staff attack alarm systems
- ▶ Suitable system for locking down the department, both as a whole and on a zone by zone basis
- ▶ Major Incident and Special Incident plans

6.5.6 Health & Safety

Representatives from UHL's Health & Safety team were consulted on the project and design solution. The size and layout of rooms throughout the department, including staff areas such as offices and meeting rooms, were reviewed as well as specific items such as safety catches and door holds. Mental Health rooms were reviewed in specific detail to ensure compliance for patient and staff safety.

6.5.7 Manual Handling

Representatives from UHL's Manual Handling team were consulted on the project and design solution. The main areas of review were around the flows and movement of clinical supplies, linen and waste both into and out of the department. The Manual Handling team were involved in the development of strategies relating to the movement of goods. Sandra Mosses and Capita healthcare experts subjected the design to an ergonomic risk assessment.

6.5.8 Fire

UHL's Fire Advisor was consulted on the project and provided input into the design, specifically identification of suitable fire zones, provision of fire doors, locations and access to fire escapes. A Fire Strategy, Fire Drawings, Building Regulations Initial Report, and Letter of Comfort from Building Control can be found in the Estates Annex at Appendix 2Q.

6.5.9 Public & Patient Involvement

Geriatric and Adolescent Design groups have been set up to provide input into the design and interior design, including:

- ▶ Layout of rooms within an specific area of the department
- ▶ Suitable floor & wall finishes, colour schemes and decoration
- ▶ Provision of equipment and items such as large face clocks, WC signs to improve patient experience.

These groups involved:

- ▶ Representatives from the Trust's public and patient involvement groups
- ▶ Local representatives from national charities such as AgeUK and VistaBlind
- ▶ A research team from Loughborough University who recently received a £50m grant from the Department of Health in order to carry out pilot schemes to trial improvements to geriatric environments within the acute care setting

The project's Level 2 Gateway Report identified these efforts as an example of best practice: *"The equality, disability and patient engagement has been excellent, involving them within the project team, and this offers an example of best practice"*.

6.6 Outline Arrangements for Change & Contract Management

The Change Control procedures will be undertaken in accordance with the flow charts identified within the NEC3 contract framework.

Project specific versions of these will be prepared identifying the basic process in relation to:

- ▶ Issue of Project Manager's Instruction
- ▶ Contractor confirms price and programme implications within 3 weeks
- ▶ Project Manager raises Compensation Event within 2 weeks if in agreement
- ▶ Client Accepts Compensation Event and signs accordingly
- ▶ Contractor updates Programme

Change management associated with the project will be managed through the Project Board and executive forums that preside over it, under the chairmanship of the Senior Responsible Owner (SRO) and Trust Board respectively. Day to day change management issues will be discussed at the Emergency Floor Project Team meetings and any resultant contract and/ or cost changes will need to be approved by the Project Board.

6.7 Outline Arrangements for Benefits Realisation

The delivery of benefits will be managed through the Emergency Floor Project Board. A copy of the benefits realisation plan can be seen in Section 2.17; this 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 sufficient capacity to meet demand, efficiencies in service delivery, compliance to standards and minimised disruption to overall Trust operations.

Key benefits of the project are:

- ▶ To implement a design solution that provides a safe emergency care service that ensures capacity and known flexibility for current and known future demands of patients requiring emergency care
- ▶ Improve patient pathway management reducing the clinical risk and discomfort through the emergency care pathway
- ▶ Support and consolidate the provision of an Emergency Floor concept at LRI
- ▶ Ensures that the service model of care is delivered in line with National, Trust and local health economy KPI's
- ▶ Patient safety is enhanced, and clinical risk is reduced
- ▶ Quality of care is enhanced, in terms of the model of care, and seamless pathways of care and patient flows
- ▶ The built environment enhances clinical practice that support clinical effectiveness, improved patient outcomes and patient safety
- ▶ Provides enhanced departmental relationships and clinical adjacencies that support clinical effectiveness and improved patient outcomes
- ▶ Ensures facilities are future proofed and adaptable to the changing needs of the health economy
- ▶ Improved Privacy and dignity provisions for all patients
- ▶ Consolidates existing services & provides clinical expertise whilst realising the Emergency Floor concept
- ▶ Improved patient access through a single front door process
- ▶ Enhances patient, visitor and staff safety through the built environment
- ▶ The design solution minimises the impact of the construction process on the site and therefore delivery of the Trust core services
- ▶ Option enables future proofing of the physical ED environment aligned to DCP future expansion needs
- ▶ The enabling moves will facilitate the Emergency Floor programme whilst minimising delay to delivery
- ▶ Reduces complexity and sequence dependency of enabling moves
- ▶ Maintains blue light access throughout whole build process

6.8 Outline Arrangements for Risk Management

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 (in particular one of this size and complexity) that the risk management process involves all key members of the project team including:

- ▶ Trust Estates
- ▶ Trust FM
- ▶ Project Consultant Team
- ▶ Contractor
- ▶ Designers

6.8.1 Risk Management Policy

The risk management system is described in the Trust's Risk Management Policy which is accessible to all staff via the Trust Intranet. It is based on an iterative process of:

- ▶ Identifying and prioritising the risks to the achievement of the organisation's policies, aims and objectives
- ▶ Evaluating the likelihood of those risks being realised and the impact should they be realised
- ▶ Managing the risks efficiently, effectively and economically

This is achieved through a sound organisational framework, underpinned by a robust policy framework, which promotes early identification of risk, the co-ordination of risk management activity, the provision of a safe environment for staff and patients, and the effective use of financial resources.

The Trust Risk Register details, in order of relative importance, all the significant risks facing the Trust which are most likely to affect (positively or otherwise) achievement of the Trust's objectives.

All new Trust employees attend the corporate induction course, which includes elements of risk management, before they commence their duties in the workplace. This corporate induction is followed by a local induction, delivered by the service line manager, during which time staff receive information on risks specific to that service.

Risks are identified through feedback from many sources such as proactive risk assessments, adverse incident reporting and trends, clinical benchmarking and audit data, complaints, legal claims, patient and public feedback, stakeholder/partnership feedback and internal/external assurance assessments. Appendix 6D provides an overview of the robust system of risk management across the Trust.

6.8.2 Assurance Framework

The Trust's Assurance Framework provides it with a simple but comprehensive method for the effective and focused management of the principal risks to meeting the Trust's corporate objectives. In this way it provides a structure and describes the controls and assurance mechanisms in place to manage the identified risks. This simplifies Board reporting and the prioritisation of action plans, which, in turn, allows for more effective performance management.

The key elements of the Assurance Framework are:

- ▶ Establishment of the Trust's principal objectives (strategic & directorate)
- ▶ Identification of the principal risks that might threaten the achievement of these objectives
- ▶ Identification and evaluation of the key controls intended to manage these principal risks
- ▶ Setting out of the arrangements for obtaining assurance on the effectiveness of the key controls across all areas of principal risk
- ▶ Evaluation of the assurance across all areas of principal risk
- ▶ Identification of the positive assurances and areas where there are gaps in controls and or assurances
- ▶ Putting in place of plans to take corrective action where gaps have been identified in relation to principal risks
- ▶ Maintenance of dynamic risk management arrangements including, crucially, a well-informed risk register

Therefore, the Assurance Framework provides a simple framework for reporting key information to Boards. It identifies which of the organisation's objectives are at risk because of inadequacies in the operation of controls or where the organisation has insufficient assurance about them. At the same time it provides structured assurances about where risks are being managed effectively and objectives are being delivered.

The primary focus is confidence that effective processes are in place to deliver the strategic objectives of the Trust. This allows Boards to determine where to make efficient use of their resources and address the issues identified in order to improve the quality and safety of care.

Where any significant gaps in assurance are identified they are transferred to the risk register and an action plan is developed.

6.8.3 Project Risk Register

The current risk register has been developed through a workshop environment. For each identified risk the following are noted:

- ▶ Reference

- ▶ Category
- ▶ Risk and associated likely impact
- ▶ Probability and impact factors and associated overall risk rating
- ▶ Mitigation measures
- ▶ Cost and time impacts
- ▶ Risk owner and / or manager
- ▶ Action Date

The risk register can be found at Appendix 2T – this is a working document and will be developed throughout the duration of the project. The register will be reviewed regularly focussing on the high impact risks and those with pending Action Dates.

Over time the allocation of the individual risks (Trust or PSCP) will also be reviewed to ensure risks are placed with the party best placed to deal with it.

6.9 Outline Arrangements for Post Project Evaluation

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

The outline arrangements for post Project Evaluation (PPE) have been established in accordance with best practice and are outlined in the UHL Project Management Plan.

The purpose of the PPE is to document the project journey and the outcome of the project and product. It will give stakeholders the opportunity to contribute and comment on the following:

- ▶ Was the brief interpreted correctly?
- ▶ Did the design meet the brief?
- ▶ Was there pro active liaison regarding:
 - ♦ Briefing Stage?
 - ♦ Design Stage?
 - ♦ Construction Stage?
- ▶ Was the project delivered within programme?
- ▶ Was the project delivered within budget?
- ▶ Additional comments from the user
- ▶ Additional comments from the project manager
- ▶ Analysis of the gateway review recommendations to ensure compliance

- ▶ Analysis and evaluation of the of the DQI recommendations

Key emphasis will also be placed on the success of the space derogations in the emergency floor. Clinical functionality will be evaluated against the operational policy and original project brief.

The Post Project Evaluation Forms will be completed by the Project Clinical Leads and the Project Manager.

The Post Project Evaluation form will be used as a learning tool and therefore honest feedback will be sought.

These will be of benefit to:

- ▶ The Trust – in using this knowledge for future capital schemes
- ▶ Other key local stakeholders – to inform their approaches to future projects
- ▶ The NHS more widely – to test whether the policies and procedures used in this procurement have been used effectively
- ▶ Contractors – to understand the healthcare environment better

The evaluation will examine the following elements:

- ▶ The effectiveness of the project management of the scheme – viewed internally and externally
- ▶ The quality of the documentation prepared by the Trust for the contractors and suppliers
- ▶ Communications and involvement during procurement
- ▶ The effectiveness of advisers utilised on the scheme
- ▶ The efficacy of NHS guidance in delivery the scheme
- ▶ Perceptions of advice, guidance and support from the strategic health authority and NHS Estates in progressing the scheme.

The purpose of the Post Project Evaluation meeting with the Design Team and Contractor is to examine and document the project journey and the outcome of the project and product. This will be undertaken once the project is completed and has financial closure.

It gives the Project Manager, The Design Team and the Contractor the opportunity to contribute and comment on the following:

- ▶ Introduction
- ▶ Brief
- ▶ Brief interpretation
- ▶ Contractor feed back
- ▶ Team meetings/site meetings

- ▶ Design Process/Change Management
- ▶ Sub-Contractor performance
- ▶ Quality and Control
- ▶ Health and Safety
- ▶ Programme
- ▶ Finance

Process

The Post Project Evaluation Meeting is a Formal Meeting and therefore should be recorded as such. The meeting will be arranged with 5 working days notice with the agenda being issued 3 days prior to the session.

Formal post project evaluation reports will be compiled by project staff, and reported to the Board to ensure compliance to stated objectives. The evaluation report will also be shared with the NTDA and Projects Assurance Unit.

6.9.1 Post Implementation Review (PIR)

These reviews ascertain whether the anticipated benefits have been delivered and are timed to take place immediately after the new Emergency Floor opens and then 2 years later to consider the benefits planned.

Benefits realisation will be evaluated against the agreed metrics used to evaluate performance (section 2.17). These Key Performance Indicators relate directly to the project objectives and benefit criteria (table 2.9 metrics for Performance management).

6.10 Gateway Review Arrangements

Gateway reviews provide a valuable perspective on the issues facing the internal project team, and an external challenge to the robustness of plans and processes. The Gateway process provides support to SROs by helping them to ensure the following:

- ▶ The best available skills and experience are deployed on the programme or project
- ▶ All the stakeholders covered by the programme or project fully understand the current status and the issues involved
- ▶ The programme or project can progress more confidently to the next stage of development, implementation or realisation
- ▶ Achievement of more realistic time and cost targets for the programme or project

The Gateway Project Review Process looks at a project or programme at six key stages in the life of the project and considers the readiness to progress to the next phase.

The six stages or Gates are:

- ▶ Gate 0 - Strategic Assessment
- ▶ Gate 1 - Business Justification
- ▶ Gate 2 - Delivery Strategy
- ▶ Gate 3 - Investment Decision
- ▶ Gate 4 - Readiness For Service
- ▶ Gate 5 - Operations Review and Benefits Evaluation

A Health Gateway Review 3: Investment Decision was undertaken and associated report issued to the Project SRO on the 29th January 2015 (Appendix 6E). A Delivery Confidence Assessment of GREEN/ AMBER was issued by the review team, indicating that successful delivery of the project appears likely; along with recommendations for consideration/ implementation.

The Gateway recommendations and subsequent actions are as follows:

Table 6.7 Gateway 3 Recommendations

Ref.	Recommendation	Timing	Action Taken
1	Develop the benefits management strategy for the project and the UHL Reconfiguration Programme.	Do by September 2015	UHL Programme action for Autumn 2015. Ongoing.
2	Review project management arrangements for the non-construction elements of the next phase.	Do by March 2015	Work-streams delivering the end product are well established. These include workforce, equipment, IT, communications & finance. The operational commissioning work-stream has been established and a plan of work has commenced.
3	Plan the next stage of operational commissioning including wider stakeholder engagement and communication arrangements.	Do by September 2015	The communications strategy will be reviewed and strengthened to include the wider aspects of external engagement to ensure widespread communications on the new Emergency Floor.
4	Determine how the wider EF project dependencies will be managed leading to the opening of the new Emergency Floor.	Do by June 2015	A detailed project plan will be developed by work-stream leads to ensure readiness for the new Emergency Floor.

6.11 Contingency Plans

The Trust has a framework for Business/Service Continuity. In this instance, the Emergency Care Directorate ensures that the Trust's emergency care service contingency plans are in place for the event of any disruption.

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 the event that this project fails and the ED is not re-developed, the Trust will continue to implement and realise the benefits of its current Emergency Care action plan. The Trust will also implement the Do Minimum option; albeit limiting in achieving capacity requirements and efficiencies, it will enable a continuation of Emergency services within its existing facility.

Appendices

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

Appendix 1A	CCG Letter of Support
Appendix 2A	ECIST Review 2013
Appendix 2B	Design Operational Policy 2013
Appendix 2C	Emergency Care 4hr Trajectory 2013
Appendix 2D	LLR Winter Urgent Care Action Plan 2014/15
Appendix 2E	Trust Extreme & High Risks (15 and above)
Appendix 2F	Trust Moderate Risks (8-12)
Appendix 2G	Detailed Guiding Strategies
Appendix 2H	Trust Clinical Strategy (draft)
Appendix 2I	UHL 5 Year Estates Strategy
Appendix 2J	Clinical Justification
Appendix 2K	Model of Care
Appendix 2L	Clinical Operational Policy - ED
Appendix 2M	Clinical Operational Policy - Assessment
Appendix 2N	Clinical Operational Policy - Support
Appendix 2O	Clinical Service Dependencies
Appendix 2P	Imaging Turnaround Times Report
Appendix 2Q	Estates Annex
Appendix 2R	CQC Inspection Report 2014
Appendix 2S	DQI Report 2014
Appendix 2T	Risk Register
Appendix 3A	FB forms
Appendix 3B	Notes on FB forms
Appendix 3C	Comparison between OB forms and FB forms
Appendix 3D	Non-attributable Fees Report
Appendix 3E	GMP
Appendix 3F	1:500 Emergency Floor
Appendix 3G	1:200 New Build
Appendix 3H	1:200 Refurbishment
Appendix 3I	1:50 Resus
Appendix 3J	1:50 Majors

Appendix 3K	1:50 MIAMI
Appendix 3L	1:50 Streaming Zone
Appendix 3M	1:50 Adult Reception & Waiting
Appendix 3N	1:50 Paediatric ED
Appendix 3O	1:50 SSPAU
Appendix 3P	1:50 EDU
Appendix 3Q	1:50 EFU & AFU
Appendix 3R	1:50 RAU (partial)
Appendix 3S	1:50 ACB & RAU (partial)
Appendix 3T	1:50 GP Referral Unit
Appendix 3U	1:50 Diagnostic Imaging
Appendix 3V	1:50 Ground Floor
Appendix 3W	Construction Materials Palette
Appendix 3X	Roof Plan New Build
Appendix 3Y	Visualisation Adult Main Entrance
Appendix 3Z	Visualisation Paediatric Main Entrance
Appendix 3ZZ	Schedule of Accommodation
Appendix 4A	Planning Approval & Conditions
Appendix 4B	Planning Conditions Tracker
Appendix 4C	BREEAM Interim Certificate
Appendix 4D	Equipment List (capital)
Appendix 4E	Equipment List (revenue)
Appendix 4F	Equipment Procurement Strategy
Appendix 5A	Capital Costs
Appendix 5B	I&E and Workforce calculations
Appendix 5C	Workforce Plan (narrative)
Appendix 5D	LTFM
Appendix 5E	Notes on LTFM
Appendix 6A	Project Execution Plan
Appendix 6B	Programme
Appendix 6C	Communications Strategy
Appendix 6D	Trust Risk Management Policy 2014
Appendix 6E	Gateway 3 Review – Final Report
Appendix 6F	Beachcrofts Procurement – Letter of Support

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