

## **Board of Directors**

### **Item 4.4a**

<b>Subject:</b>	<b>Outpatient Service Improvements-Full Business Case</b>
<b>Date of meeting:</b>	<b>Tuesday 28<sup>th</sup> July 2015</b>
<b>Prepared by:</b>	<b>Tony Bennett - Divisional Head of Operations Andrew Hunter – Clinical Services Business Partner</b>
<b>Supported by:</b>	<b>Tony Wilding - Chief Operating Officer Dave Sanderson - Head of Estates Dave MacMillan - Capital Program Manager Julie Perkin - Administration Lead Doreen Russell - Pulmonary Function Department Manager Janet Beukers - Cardiac Diagnostics Department Manager Dave Murphy - Head of IT Tracy Graham - IT Programme Manager Lyndsey Waktare - EPR Business Manager External suppliers (as appropriate)</b>
<b>Presented by:</b>	<b>David Jago - Chief Finance Officer</b>

## **1. Introduction**

This paper outlines the proposal to invest in the improvement of the OPD dept and supporting diagnostics facilities at the Trust to ensure;

- Improve capacity to deliver LHCH strategic plan for OPD activity.
- Increase OPD rooms within estate to support RTT targets
- Improve patient experience , enhanced environment
- Improve visual management systems
- Improve communication with patients
- Compliance with accreditation service specification

Furthermore this business case informs the Board of Directors on the development of OPD services at Liverpool Heart and Chest hospital (LHCH) and to seek approval for funding to develop a fit for purpose OPD environment which meets the ever increasing demands and creates an environment consistent with the ever improving LHCH estate to be the “Best Integrated Cardiothoracic Healthcare Organisation”.

## **2. Drivers for Change**

### **Accommodation**

The purpose of this business case is to demonstrate service improvements required within the Outpatient Department to provide a more effective and efficient service delivery. The existing arrangements have been reviewed internally, externally and through stakeholder engagement. Principles have been developed to

meet the ambitions of delivering a more stream lined service to improve patient experience and staff satisfaction.

### 3. Current/future Service

The current department has been in operation for over 9 years and activity and specialty has expanded. Improvements in design need to be made to meet the change in demand whilst maintaining patient quality and service delivery. From 2006 to date activity has increased annually and in the last financial year 2014-15 has increased by 30% across Outpatients and surrounding departments with a predicted trend to increase by at least another 10% in this financial year 2015-16. Significant areas for expansion being CF, ACHD, Increased surgical activity, EP, Respiratory services ("CPeX" – Cardio-pulmonary exercise testing) and Cardiac imaging (Complex Echocardiography).

### 4. Future Resource Requirements

Over the next 12-18 months through the 'healthy Liverpool' scheme there are plans to ensure more services are accessible in the community to the public. However, despite this the demand for clinic space is increasing with several requests received on a daily basis. It has reached a point where not all requests can be accommodated leading to a back log of patients waiting to be seen and a loss of potential revenue for additional clinics that cannot be facilitated. There is also the potential for patients to breach for clinics that are cancelled at short notice due to emergencies and can then not be rebooked in a timely manner. Therefore, additional capacity is required to meet the ambitions of the 5 year strategic plan.

The focus for service improvement within Outpatients has been on the agenda for many years and a previous project commenced in 2011 in response to the results of the National Patient satisfaction Surveys. The majority of the larger improvements required highlighted in 2011 remain with no significant change. This was reconfirmed with the results of the 2013 national patient Survey and internal projects which demonstrated investment is required to maintain the levels of quality the trust aspires too. The drive is to improve the Outpatient estate, improve patient experience with "tailored to need" outpatient clinics and improve the administrative and visual management processes within the area.

### 5. Financial Analysis

**Table 1 – Summary Impact**

	2015/16	2016 - 2020	Total
Capital Expenditure £000's	-656	0	-656
Operating Income £000's	0	0	0
Operating Expenditure £000's	-6	-22	-28
<b>EBITDA £000's</b>	<b>-6</b>	<b>-22</b>	<b>-28</b>
Non-Operating Income £000's	0	0	0
Non Operating Expenditure £000's	-59	-217	-276
<b>Net Surplus £000's</b>	<b>-65</b>	<b>-239</b>	<b>-303</b>
Net Cash inflow/(outflow) £'000	-687	-106	-793

The financial time horizon is 5 years for equipment & software, 25 years for capital costs associated with alterations to buildings and environment. The table illustrates a minor effect on EBITDA of £28k over the 5 years 2015/16 to 2019/20, a negative effect on trust surplus of £303k over 5 years. Associated cash outflow is £793k over the same 5 year period i.e. inclusive of revenue, capital and financing charges. A more detailed discounted cash flow is contained in section 5 below.

The key financial assumptions are:

**Capital Expenditure:** Total capital spends of £656k is all in Year 1 (2015/16), this has been allocated in the 2015/16 Capital Program (subject to Board of Directors approval). This figure is inclusive of all planned building and engineering costs, self check-in kiosks and visual patient management system (all Inclusive of Vat @20%).

**Operating Income:** The proposed building changes will increase capacity within the outpatient physical space. The financial benefit of 4 additional consulting rooms, 1 specialist echo room and 1 spirometry room is acknowledged. It is particularly difficult to quantify with certainty the cash flow benefit, although introducing four additional clinic rooms into circulation will allow the opportunity for 40 extra clinical lists per week. Plus, two extra diagnostic rooms will also give the opportunity for 20 additional diagnostic lists per week. This resource will give rise to further income streams within the organisation. However, current financial analysis is focused on capital cost for this business case therefore this potential income is noted but currently not included in the cash flow above.

**Operating Expenditure:** for the purpose of this capital business case currently there are no significant on-going revenue costs apart from the annual maintenance charge for the self check-in kiosks quoted as £5k p.a. The only other cost is a B6 project role however this is part of capital as cost is solely associated with this project.

**Non-Operating Expenditure:** the above table includes depreciation and capital charges of £59k in year 2015/16 plus further financing charges £217k over the next 4 years 2016 to 2020. Total financing over 5 years is £276k.

## **6. Risk Analysis**

A detailed risk analysis has been undertaken by the directorate management team which identifies the risk and potential threat to the organisation if the business case is not approved. These risks include strategic, financial, operational and reputational. All these risks score as major concerns and would have a significant impact on the future delivery of OPD services at LHCH.

## **7. Project Management**

The delivery of the project will be jointly led by the capital project manager and the directorate management team. A user group (already established) will meet weekly to ensure the delivery of the project within the planned deadlines and financial envelope. As with previous capital developments patient involvement in the design phase will be key to the successful delivery of the project. It is important to note the project manager will not be working solely on the Capital estates work but also the IT enabling services plus working with the divisional clinical leads, their teams, administrative and EPR/IT links to deliver quality improvement schemes to drive efficiencies and improve patient experience with “tailored to need clinics”

## **8. Recommendation**

The Board of Directors is asked to consider and approve the proposal for the £656k capital and revenue resources required ensuring LHCH has the capability and capacity to continue delivering excellent services to our outpatients.

## **Executive Summary**

### **1.0 Introduction/Background**

**1.1** Outpatients is often regarded as the “window of the trust”. The department is one of the few areas in the trust that the majority of clinicians visit and caters for the full multidisciplinary team. As the first part of the elective patient journey, it is essential that as a trust we set the precedent for the rest of the hospital stay. Indeed it is the only department that some patients will ever attend. There is an increasing competition for services and the option of choose and book is through reputation. It is imperative we continue to deliver high quality efficient care to our patients with the appropriate working environment for our staff also. It is important that we meet the expectations of patients who experience areas within the organisation such as “Oak Ward, ‘Holly Suite and soon to be the new Cherry Ward’.

**1.2** Outpatients including diagnostics treat approximately 100,000 per year. Based on a 50 week year equates to 2,000 patients per week, 400 per day, 50 patients per hour. Albeit patients will be in different areas within their journey during this time. Friends, family and carers plus ambulance patients have not been factored into the equation. With 56 chairs only within the waiting area many times especially at peak times people are required to stand. Majority of the chairs are the same design and all run in a uniform pattern in groups of 4. This layout does not cater adequately for patients needs. With improved seating and design the number of seats can be increased by over 25%

**1.3** More seats alone is not the answer and working with the Surgical and Medical Divisions “Tailored to need clinics” to improve flow, patient experience and drive efficiencies will reduce the amount of people waiting for procedures and to see clinical teams. A recent cardiology service line has improved its waiting time by 40% by “level loading”

### **2.0 Strategic Context**

**2.1** LHCH Outpatients treats patients from all areas although predominantly Merseyside, North Wales, the Isle of Man, and parts of Cheshire and Lancashire. There is a commitment to continue to identify service development opportunities and maintain stakeholder engagement which had been highlighted in the annual plan for 2014-2015, 2015-16. All the elements of this project are underpinned by the strategic review for clinical services division and cater for all business interests.

- **Quality**
- **Service**
- **Value**
- **Workforce**
- **Stakeholder**

### **2.2 Project Update**

A lot of time has been invested on this project to date with the core team of stakeholders. A working group has been formed and summary business cases have been written. The working group and Boston scientific have led on various improvement initiatives but it has been recognised that due to the scale of the project and time already invested it needs a dedicated project manager to coordinate and drive service transformation forward.

In conjunction with the requirements above, the Boston Scientific team and working group are reviewing all clinic services over the next 12/18 months for efficiencies and improvements, monitoring process mapping and flow. The drive is for all service lines to recognise and support the need for all OPD services to be process mapped and tailored to need the needs of the patient group/clinic. This will in turn improve patient and staff experience by levelling the load. It is important to note one approach does not meet all and each service line will most likely differ in their approach to deliver high quality efficient care to their patient groups. This target has commenced within the cardiology PCI service line with a change in practice which went live March 2015 to provide a more flexible way of working and efficiencies. This change in process has reduced waiting times currently by >40%, improved diagnostic process and identified further income generation of £265k per year.

There is a very committed workforce who constantly support change and recognise the need to constantly explore improvement initiatives. The Boston Scientific team and stakeholder working group are already engaged to support the project objectives. The OPD department is well integrated with majority of trust staff, very good rapport with all medical and nursing teams due to the variety of services delivered. There is staff and patient interaction on a daily basis. A patient engagement event has taken place November 2014 to capture feedback and patient views. (Questionnaires are only a partial reflection.)

By providing investment and supporting the project the main long term benefits can be achieved;

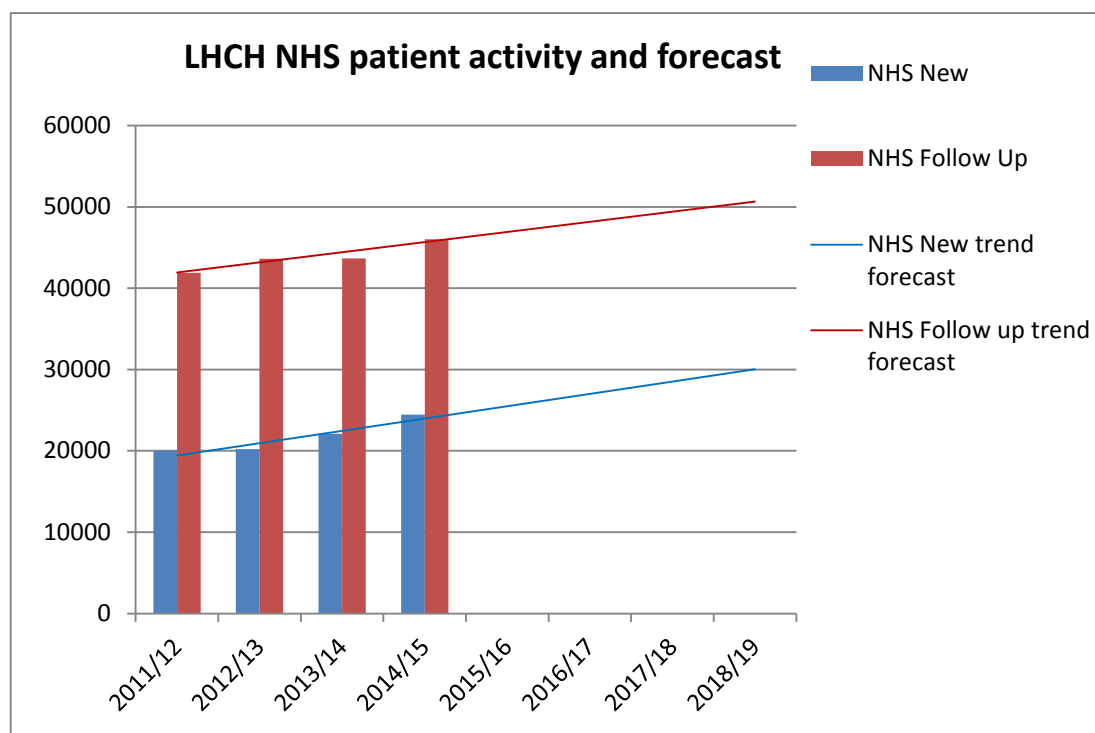
- **Improved overall patient experience**
- **Improved overall staff satisfaction**
- Improve dignity and reduce anxiety for patient experience
- More effective collection of patient feedback
- Improved patient flow (functionally/electronically) will provide the opportunity for increased activity, reduction in waiting times and potential for complaints
- An effective electronic scheduling system will allow capacity to be managed efficiently
- Potential to expand to cater for private patients
- Potential to support new research and development (the LSS scheduling tool would support OPD to develop lots of research initiatives with real time data combined with EPR)

**2.5** Figure 1 demonstrates the activity trend for the last 4 years and the predicted for coming 4 years. It is clear there is an ever increasing demand to undertake more clinics and treat more patients within an estate which has outgrown its footprint. By using the space more effectively and undertaking quality improvement schemes to eliminate waste we can continue to deliver high quality services within our current Outpatient area for future years. Note this is **OPD activity only** and does not include diagnostic testing and its rise in activity.

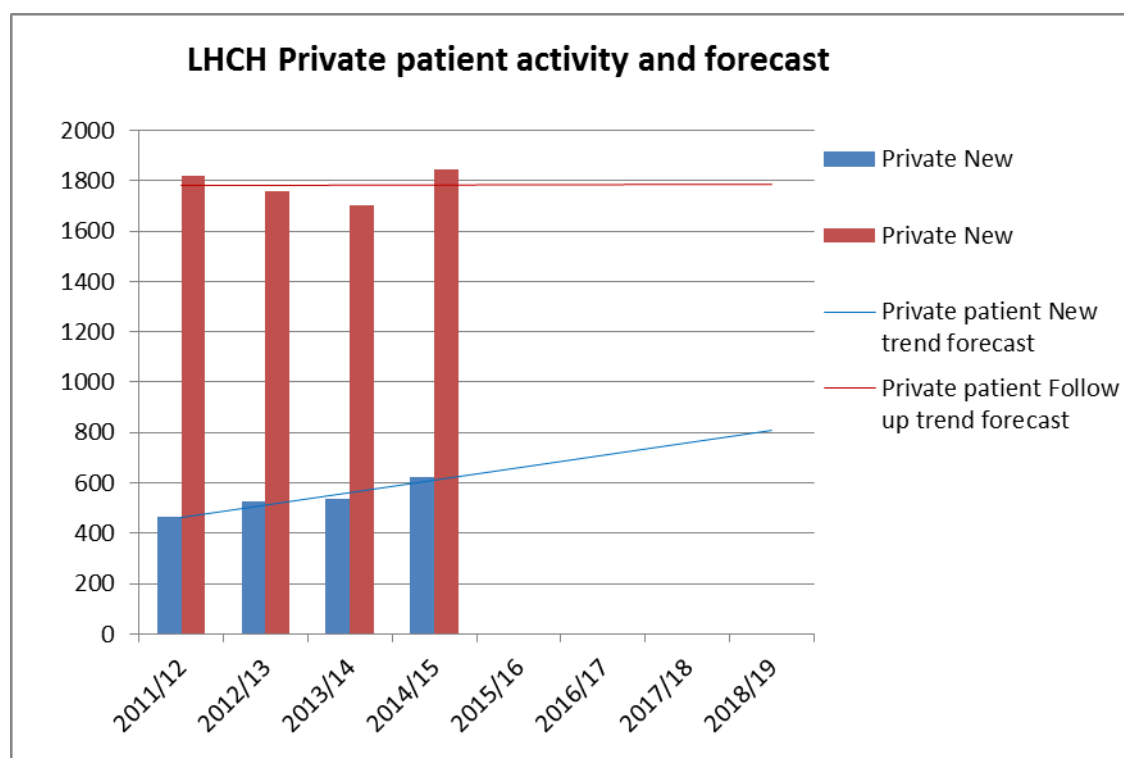
**Table 5 Appointment Activity**

Patient type	OPD	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
NHS	New	20021	20213	22,107	24,447				
NHS	Follow Up	41904	43632	43,651	46,038				
Patient type	OPD	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Private	New	463	524	537	623				
Private	Follow Up	1820	1759	1,701	1,844				
Patient type	OPD	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Total	New	20484	20737	22,644	25,070				
Total	Follow Up	43724	45391	45,352	47,882				

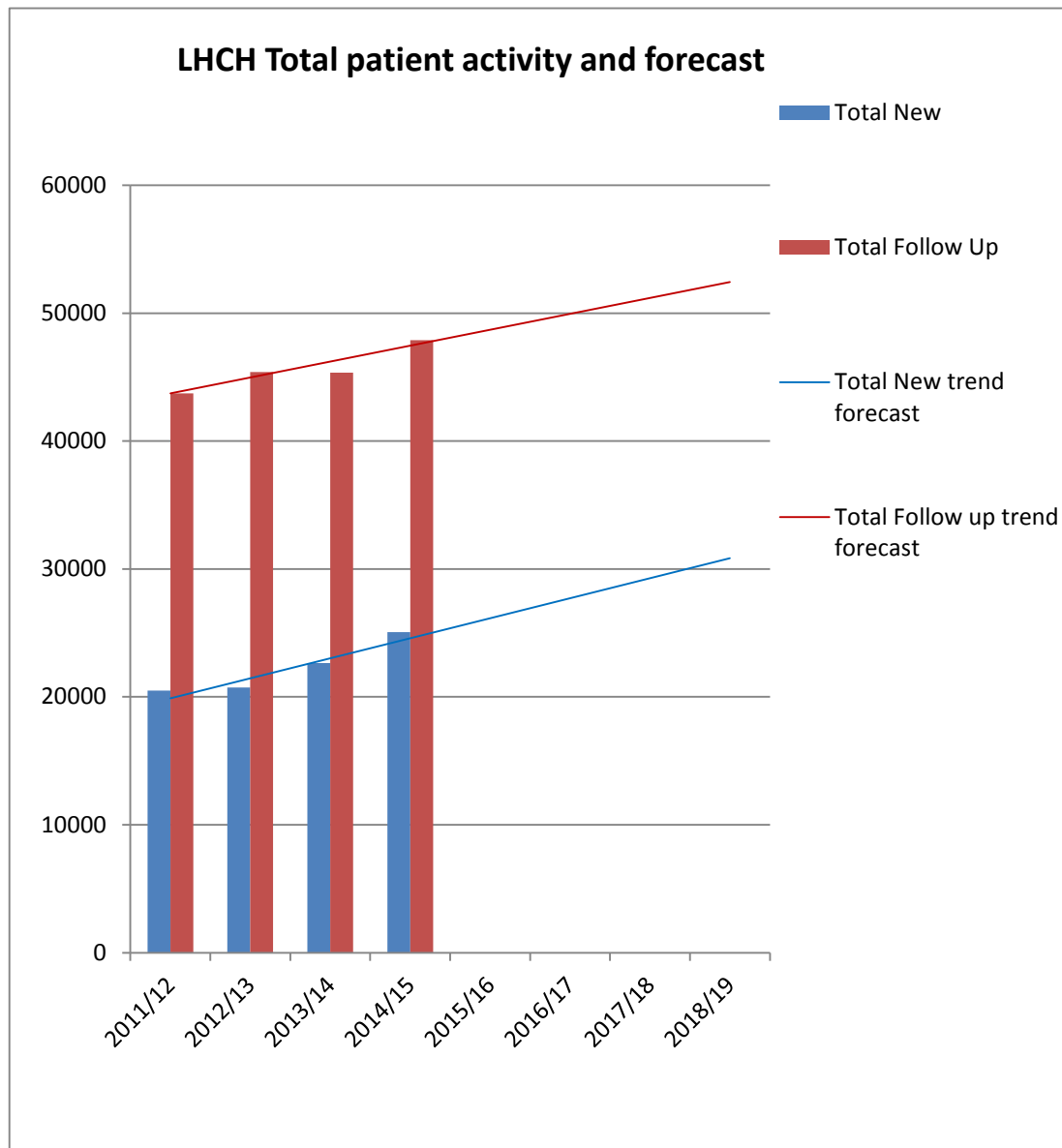
**Figure1: Continuing and forecasted growth of “NHS” OPD activity**



**Figure2: Continuing and forecasted growth of “Private” OPD activity**



**Figure2: Continuing and forecasted growth of “Private + NHS” OPD activity**



## Future Service Model / Outpatient Requirements

The table below outlines the aspirational schemes of work for over the coming years to meet the growing demand in activity within areas where efficiencies in flow and process could be made:

Number	Objective Description	Outcome Benefit	Metric Measurement	Strategic Objective
1	Self-check in's/ visual scheduling (pre-awarded)	To improve patient flow with a more efficient service and reduce pressure on desk staff, queues forming at the desk. Keep trust up to date with technology	Monitor the percentage of patients utilising the self-check ins. There should be reduced queues forming at the desk and a reduction in waiting times as a result of improved patient flow	Workforce
2	Patient appointment reminder service	To reduce the number of DNA and make it easier for patients to reschedule appointments	Through the text reminder service. In house PAS reports and national target reports.	Value
3	Text FFT survey	Support the patient and family experience to be able to obtain increased, improved quality of patient feedback by providing the patients with the survey at a time to complete to suit the individual	Through the text reminder service. In house and national target reports.	Quality
4	Digital Consultations (i.e. Skype)	To free up capacity within the department and provide more patient choice for relevant patient groups. To meet national objectives for 2015	Select patients appropriate for this service i.e. Cystic Fibrosis/Oncology	Value
5	LSS scheduling system	To provide a more transparent visual schedule for clinicians to view clinic availability. To bring in line with rest of trust as already used in theatre and catheter lab	Integrating the scheduling system into the LSS design model in keeping with scheduling across the Trust would provide more functions for audit and management purposes. Provide a planned activity forecast. Potential increase in revenue with the expansion of services through more effective management of capacity	Quality
6	Estates work (inclusive of Cardiac Diagnostics and Pulmonary Function) The echo room would be to meet the accredited requirements	Improve the flow from point of arrival; provide more comfortable seating, additional capacity for echo, spirometry and increase potential for space within OPD clinic rooms (turn exam rooms into clinic rooms). Through effective capacity utilisation potential for expansion of other services and increased revenue.	Patient feedback and activity in OPD	Quality Service Stakeholder
7	Highly commended reputation as a department	An improved reputation provides the potential for referrals in turn generating more franchise	An improved reputation provides the potential for referrals in turn generating more franchise	Quality Value



## 5.0 Financial Analysis

**5.1** In order to continue to deliver the high quality services to our current patients and the expected increase in activity we will require additional capital investment. The cash flow below illustrates in more detail the capital, revenue and associated financing costs required for the OPD expansion. Over the 5 years the total cash out flow is £793k, discounted to present value of £785k.

### Actual Cash Flow OPD Expansion

			0	1	2	3	4
Cashflow	Signage		2015/16	2016/17	2017/18	2018/19	2019/20
<b>Revenue Cash Outflows</b>							
Pay Costs	-ve		0	0	0	0	0
Non Pay	-ve		(5)	(5)	(5)	(5)	(5)
Contingencies	-ve		(0)	(0)	(0)	(0)	(0)
Less Cost savings	+ve		0	0	0	0	0
<b>Total Revenue Cash Outflows</b>			<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>
<b>Revenue Cash Inflows</b>							
	+ve		0	0	0	0	0
	+ve		0	0	0	0	0
	+ve		0	0	0	0	0
	+ve		0	0	0	0	0
	+ve		0	0	0	0	0
<b>Total Cash Inflows</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Net Revenue Cash Flows</b>			<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>
<b>Capital Cash Outflows</b>							
Building & Engineering	-ve		(619)	0	0	0	0
Equipment & Software	-ve		(37)	0	0	0	0
Capital Contingency	-ve		0	0	0	0	0
Financing	-ve		(26)	(24)	(22)	(20)	(18)
<b>Total Capital Cash Outflows</b>			<b>(681)</b>	<b>(24)</b>	<b>(22)</b>	<b>(20)</b>	<b>(18)</b>
<b>Capital cost inflows</b>							
PDC			0	0	0	0	0
Loan			0	0	0	0	0
Charitable Funds			0	0	0	0	0
<b>Total Capital Cash Inflows</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Net Capital cashflows</b>			<b>(681)</b>	<b>(24)</b>	<b>(22)</b>	<b>(20)</b>	<b>(18)</b>
<b>Net Cashflow</b>			<b>(687)</b>	<b>(29)</b>	<b>(28)</b>	<b>(26)</b>	<b>(24)</b>
<b>Cum cashflow</b>			<b>(687)</b>	<b>(717)</b>	<b>(744)</b>	<b>(770)</b>	<b>(793)</b>
<b>Payback period indicator</b>				-	-	-	-
<b>Payback period</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Discount @</b>		<b>3.50%</b>					
<b>DCF</b>			1.00	0.97	0.93	0.90	0.87
<b>Cumm DCF</b>			<b>(687)</b>	<b>(716)</b>	<b>(741)</b>	<b>(764)</b>	<b>(785)</b>

## 5.2 The key assumptions on which the business case financial analysis is predicated are as follows:

A consideration for cost mitigation is potential to reduce staff requirements equating to a cash saving. Potentially staff saving would come into play once the self check-in system is running effectively and had chance to be embedded (estimated at 6-12 months post installation). A member of staff may leave in that time through retirement, natural progression or be redeployed. However due to uncertainty and the possibility for redeployment, at this stage the cash benefit is not recognised in the cash flow above.

The revenue cost included above is the annual maintenance charge for the self check-in system (£5k p.a). Although a separate part of the project, for consideration there is a potential cost for the self-check-in systems to link into the Trust PAS, in particular around updates for the patient demographics. At present as this cost is not quantified it is therefore not included in cash flow above. Currently there is no foreseen additional cost for the systems to link into the Trust EPR system.

As noted in paragraphs above there are no certain identified savings through staff efficiency however there are potential additional revenues from the investment. It is recognised that through increased capacity due to building alterations there is potential to increase volume of appointments. This income from efficiencies has been estimated but not included in the cash flow at this stage. Further revenue consideration is the follow-on effect to inpatients. Depending upon conversion rates i.e. from an outpatient appointment to an inpatient spell or day case, there will be additional activity and associated income. This is difficult to quantify at this stage but should be noted as a 'downstream' consideration.

**Table 10 Summary I&E Impact**

Trading position:

	2015/16	2016/17	2017/18	2018/19	2020/21
	£'000	£'000	£'000	£'000	£'000
<b>Operating Income</b>	-	-	-	-	-
Pay costs	-	-	-	-	-
Non Pay costs	(5)	(5)	(5)	(5)	(5)
PFI costs	-	-	-	-	-
Other operating costs	(0)	(0)	(0)	(0)	(0)
<b>EBITDA</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>
Depreciation	(33)	(33)	(33)	(33)	(33)
Net interest	(26)	(24)	(22)	(20)	(18)
Other non-operating items					
<b>Net Surplus / (Deficit)</b>	<b>(65)</b>	<b>(63)</b>	<b>(61)</b>	<b>(59)</b>	<b>(57)</b>
Changes in Working Capital					
Other non-cash items	59	57	55	53	51
<b>Cashflow from Operations</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>
Purchase of assets	(656)	-	-	-	-
<b>Cashflow before financing</b>	<b>(661)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>	<b>(6)</b>
Interest/ dividend payment	(26)	(24)	(22)	(20)	(18)
Drawdown of loan/ PDC	-	-	-	-	-
Principal repayment	-	-	-	-	-
<b>Net increase/(decrease) in cash</b>	<b>(687)</b>	<b>(29)</b>	<b>(28)</b>	<b>(26)</b>	<b>(24)</b>

*EBITDA margin*

	*	*	*	*	*
Cumulative net surplus/(deficit)	(65)	(127)	(188)	(247)	(303)
Cumulative cash	(687)	(717)	(744)	(770)	(793)

## 6.0 Risk Analysis

The risk analysis for this project is based on the following two options.

### 7.1 Option 1 – Do Nothing

**7.1.1** This option would see the Trust not investing any additional investment into the estate and service improvements schemes. This would result in difficulties to support RTT compliance due to lack of clinical rooms and losing British Society of Echocardiography (BSE) Departmental accreditation as the organisation does not possess a clinical room within the department which meets requirements. Lack of investment would also result in service improvement innovations to drive efficiencies and experience being lost.

Risks identified against this option

Objective	Risk	Likelihood	Impact	Level
Strategic	The organisation will be unable to provide sufficient clinical rooms to meet OPD activity impacting on RTT	Almost certain	High	Significant (4 x 5) Score - 20
Strategic	Any inability to provide expansion of services or new services could result in services going elsewhere	Possible	High	Major (3 x 4) Score - 12
Financial	The organisation will lose income and contribution	Almost certain	High	Significant (3 x 5) Score - 15
Reputation	If LHCH cannot provide services and an environment to the standard we at LHCH set ourselves this may result in poor FFT responses and an impact on or reputation with Commissioners, patients and families	Possible	High	Major (3 x 4) Score - 12
Operational	Lack of resource and capacity will result in long waits for clinic appointments and admission	Almost Certain	High	Major (3 x 5) Score - 15

### 7.2 Option 2 – Provide the required resources

**7.2.1** This option is based on the Trust supporting the business case and the required additional resources made available. This would see us meeting specific service specifications and delivering a fully compliant service for our patients.

## 8.0 Project Management

**8.1** Project management for the proposed capital development and service improvement schemes will be required. A dedicated project manager allocated to the project will be managed in-line with our Trust capital development policies and procedures.

**8.2** A user group (already established) which includes key stakeholders will meet weekly to ensure the business case is delivered on schedule and within the financial envelope. Delivery of the service model and workforce requirements of this business case will be delivered by the directorate.

## **9.0 Conclusion and Recommendations**

**9.1** To continue to deliver high quality care and treatment to our outpatients and also to be able to expand our service innovations to improve patient experience will require additional financial resource.

Without further investment the department has exhausted ways to make improvements on a significant scale. Since commencing this episode of improvement work it has become apparent that additional funding is required to meet the strategic growth and increase in service portfolio.

It is recommended the trust supports and recognises the desire and need to invest a capital spend of £656k in our Outpatient estate. This commitment will ensure we can continue to build and deliver a high quality outpatient experience to our patient their families and carers. It is important we keep up with the ever improving technological advancements in service delivery to meet our vision of being the “Best Integrated Healthcare Organisation”.