Papworth Hospital NHS
NHS Foundation Trust

# New Papworth Hospital
# Appointment Business Case

## May 2014

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# EXECUTIVE SUMMARY

## Introduction

This is a final Appointment Business Case (ABC). At this stage in the process (following receipt and review of final bids) Skanska has been selected as the "minded to appoint" preferred bidder. The next stage of the process is to confirm appointment through a Preferred Bidder letter subject to approval by the Department of Health. This final ABC has been updated from the previous draft version to reflect that another financial year has passed and now incorporates Skanska's Unitary Payment within the long term financial model.

This final ABC is submitted by Papworth Hospital NHS Foundation Trust. It describes investment proposals via the Private Finance Initiative to develop a new cardiothoracic hospital that will provide a high quality, patient focussed environment on the Cambridge Biomedical Campus co-located with Addenbrooke's Hospital, the University of Cambridge School of Clinical Medicine and leading research organisations.

Papworth Hospital NHS Foundation Trust is one of the UK's leading cardiothoracic hospitals and an internationally recognised heart and lung centre. It provides services to a core catchment population of approximately three million in Norfolk, Suffolk, Cambridgeshire, Mid and North Bedfordshire and surrounding areas and receives referrals for certain sub-specialties from throughout the UK.

In 2012/13 almost 24,000 inpatients and day cases and 65,000 outpatients were treated and this activity is projected to grow. The Trust had a turnover of £135 million in 2012/13.

## Clinical Vision and Model of Care

The Trust developed a Clinical Vision for the development of its services in conjunction with Addenbrooke's Hospital, the Norfolk, Suffolk and Cambridgeshire Strategic Health Authority (now part of NHS Midlands and East), PCTs and other key stakeholders.

The delivery of the vision is best achieved by the development of the new Papworth Hospital on the Cambridge Biomedical Campus with more integrated, improved services for patients as a result of the partnership with Addenbrooke's Hospital and the University of Cambridge School of Clinical Medicine.

The model of care has been derived from the Clinical Vision. It represents a radical re-examination of the way in which care is delivered, a scrutiny of the structural processes behind the delivery of care, and a re-alignment of care delivery so that the patient is at the centre.

The Trust takes a whole systems approach to the emergency, elective and ambulatory care process, providing integrated service delivery with condition/disease-based care pathways based on severity of illness.

Key features of the hospital supporting the Model of Care are:

- Centralised diagnostic and imaging services
- Centralised Ambulatory Care & Outpatient Services

- Inpatient Services in single rooms, with en suite facilities
- Combined Cardiac & Respiratory Day Case Service
- Combined Theatre and Interventional Services
- Critical Care Services providing flexible use of critical care beds maintaining elective throughput and access for acute admissions.

A new Heart and Lung Research Institute (HLRI) is an integral part of the Trust's Clinical Vision, combining the scientific expertise of the Cardiovascular and Respiratory Medicine departments of the Clinical School with the clinical expertise and research capability of Papworth Hospital. Ensuring that scientific research is driven by clinical problems and that scientific discoveries are translated rapidly into new clinical treatments underpins the research vision.

The HLRI will be provided in a separate building adjacent to the new Papworth Hospital. This separate facility will be outside the PFI contract and funded by Papworth Hospital and the University of Cambridge through charitable funds.

## Option Appraisal

The SOC and the OBC considered two main options for the development of Papworth Hospital (as well as a Do Minimum option for comparison):

- A redevelopment of the hospital on the existing Papworth Everard site
- A new development on the Cambridge Biomedical Campus, close to both the University of Cambridge School of Clinical Medicine and Addenbrooke's Hospital

The option appraisal concluded that the relocation to a new hospital on the Cambridge Biomedical Campus was the preferred option. This remains the case.

## Public consultation and support

There was a substantial degree of public consultation at the SOC and OBC stages. Since submission of the SOC and the OBC the Trust has continued to engage with stakeholders in various ways, in particular through the Foundation Trust's membership and governors, as well as Patient and Public Involvement Forums, the Patients' Experience Panel, Patient Support Groups, wider Local Government interests and Members of Parliament. It has also continued to engage with staff, commissioners, referring hospitals, research organisations and the University of Cambridge.

## Case for change

Without change, the present facilities and ways of working at the Papworth Everard site will present an ever increasing challenge in meeting the Trust's objectives.

A new hospital will enhance patient care, improve staff working conditions, solve the worsening problems of functional suitability and site layout and enhance the ability to retain and recruit key staff and enable a significant enhancement in research and development capacity and capability.

Much of the current estate infrastructure will require replacement within the next few years if the hospital were to remain in its present location.

## Activity and capacity

Activity and capacity projections have been calculated for each financial year up to 2021/22. The activity projections take account of growth assumptions and known or planned service transfers. Performance and efficiency assumptions for throughput and utilisation have been applied to the activity estimates in order to derive the required capacity of the hospital.

Letters of support for the activity projections have been received from NHS Peterborough and Cambridgeshire, the National Specialist Commissioning Team, NHS Blood and Transplant, NHS Midlands and East and CUHFT.

Despite the planned growth in inpatient activity there is virtually the same number of inpatient beds in the new Papworth Hospital (217 when 23 Addenbrooke's respiratory beds are excluded) as exist on the present site (223).

The following table summarises the bed capacity of the old and new hospitals.

| | Existing Hospital Beds | New Hospital Beds |
|---|---|---|
| Inpatient | 223 | 217 |
| Day Case | 33 | 24 |
| Critical Care[2] | 33 | 46 |
| Recovery | 4 | |
| Addenbrooke's transfers[1] | | 23 |
| **Total** | **293** | **310** |

[1]New Hospital includes transfer of 23 inpatient beds from Addenbrooke's
[2]Critical Care in the new hospital includes 6 recovery beds

## Workforce implications of the new hospital

Working practices will adapt to serve the new model of care through revised working hours in areas where the expectations of the public require a move towards providing services in the evenings and at weekends. This will also allow the hospital to maximise its use of equipment and hospital facilities.

Clinical services will be provided by Trust employed staff. All hard FM services and the majority of soft FM services will be included in the PFI contract. Some support services will be shared with CUHFT including, waste disposal and sterile services. It is also planned that Pathology services will be provided by CUHFT.

It is assumed that the majority of Trust staff will transfer to the new hospital. Provision has been made to support staff through the transition process and a reward and recognition strategy is being developed to support the process whilst on the existing site and post transfer.

The hospital will continue its successful track record of developing new and enhanced roles based on a competency approach and will continue to invest in its workforce, specifically in education and development to improve skills, knowledge, experience and efficiency.

### Site acquisition

The Trust has an option to purchase a long leasehold interest (170 year lease) in a 3.1234 hectare site (the "Trust Land") in Cambridge from the Cambridge Biomedical Campus developers pursuant to an Option Agreement dated 22 December 2010. The Trust intends to exercise the option at an appropriate point prior to Financial Close of the project.

### Procurement

The procurement process for the new Papworth Hospital has followed DH guidance and has used the standard form documentation, payment mechanism and output specifications throughout, adjusted to take into account scheme specific issues.

The scheme procurement process commenced in August 2010 and has followed the Procurement Rules for PFI projects via the Competitive Dialogue process. The Trust confirms that the project remains within the scope of the OJEU notice.

The 2 shortlisted bidders (Bouygues and Skanska) provided comprehensive responses at the final bid stage. These final bids have been subject to evaluation and Skanska has been selected as the "minded to appoint" bidder by the Trust.

### Affordability

The preferred option, relocation to the Cambridge Biomedical Campus, is affordable under PFI procurement. In addition, the modelled downside results in an affordable position.

The Trust has a history of strong financial performance both in terms of growing EBITDA, and meeting its FRR targets (now CSRR). In the projected ABC Base Case and Downside, the Trust continues to meet its CSRR targets after the commencement of the PFI. The Trust has a good track record of attracting and treating growing numbers of patients across all areas of its business. This experience will be used to provide services for the predicted continued increase in patients requiring cardiothoracic services.

### Project management

The Board of Directors of Papworth Hospital NHSFT has ultimate responsibility for the successful delivery of the project with the project team retaining day to day responsibility for project management. The management of the project is formally under the control of the Board of Directors of the Trust. The Trust's Chief Executive, Stephen Bridge, as the Project Sponsor and Senior Responsible Officer, acts on behalf of the Trust. The Project Director reports directly to the Chief Executive. A Project Management Group reports to the Trust Board of Directors and includes senior clinical and management representatives.

### Risk management

A risk register is in place for the project. The register includes the risk, the probability and impact of each risk on the project together with its proximity. Each risk has an associated mitigation strategy and a risk owner responsible for managing the risk.

The Trust has prepared a Risk Allocation Matrix aligned to the draft contract documentation in accordance with the standard Department of Health guidance. The Risk Allocation Matrix seeks to determine where the management for key risks should rest between the Trust and Project Co in terms of who is best placed to manage the risk.

### Post project evaluation (PPE)

A Benefits Realisation Plan is used to track realisation of benefits across the project. A PPE Steering Group, chaired by the Director of Operations, will be established under the Project Management Group. The Board of Directors is responsible for approving the evaluation outcomes and follow-up action report.

### Conclusion

This ABC is for the provision of world class services to patients and leading edge research and development in a new cardiothoracic hospital for the Papworth Hospital NHS Foundation Trust. A modern state of the art building will provide a high quality, patient focussed environment co-located with Addenbrooke's Hospital and the University of Cambridge School of Clinical Medicine.

The case for investment offers an affordable solution under PFI with clear advantages over other options in terms of costs, non-financial benefits and exposure to risks.

This ABC is recommended for approval.

# 1. INTRODUCTION

## 1.1 SCOPE OF THE APPOINTMENT BUSINESS CASE

This Appointment Business Case (ABC)

- reaffirms the case for new Papworth Hospital as set out in the draft ABC approved by the Department of Health and Treasury on 1st May 2014.

- selects the Minded to Appoint Preferred Bidder following Close of Dialogue and evaluation of final bids.

This ABC is for the provision of world class services to patients and leading edge research and development in a new cardiothoracic hospital for the Papworth Hospital NHS Foundation Trust.

The overall scope of the project involves the reprovision of Papworth's services in a new purpose built hospital on the Cambridge Biomedical Campus adjacent to Addenbrooke's Hospital, the University of Cambridge School of Clinical Medicine, the Medical Research Council, Cancer Research UK and other major research organisations. The project is entirely new build on a greenfield site with no retained estate. The hospital will be adjacent to a new Heart and Lung Research Institute (HLRI) for the Papworth Hospital NHS Foundation Trust and the University of Cambridge School of Clinical Medicine. The close proximity of academic departments and clinical services will facilitate research and development and education.

From a regional perspective the further development of Papworth Hospital as a cardiorespiratory specialist centre together with the specialist clinical services already on the campus will assist with the wider transformation of service delivery in the region.

## 1.2 STRUCTURE OF THE APPOINTMENT BUSINESS CASE

This ABC contains 16 sections as follows:

- **Section 1 – Introduction** – outlines the scope of this business case, history of the scheme, summary of wider involvement, commissioning and strategic support for the project

- **Section 2 – Current Situation** – outlines current services, with an overview of Trust facilities and performance

- **Section 3 – Strategic Context** – outlines the strategic context for Trust services

- **Section 4 – Clinical Strategy and Model of Care** – summarises the Trust's Clinical Vision and describes the future model of care

- **Section 5 – Case for Change** – outlines the case for change

- **Section 6 – Activity and Capacity** – presents the results of the activity modelling and the future facility requirements

- **Section 7 – Research and Development** – describes the Research and Development programmes and vision for the new Papworth Hospital and co-located Heart and Lung Research Institute

- **Section 8 – Bidder Competition and Selection** – details the procurement strategy and the outcome at the interim and final bid stages.

- **Section 9 – Workforce Planning and Human Resources** – describes the workforce issues and the requirements for the future taking account of the new model of care

- **Section 10 – Project Management –** describes project management and key project dates

- **Section 11 – Risk Management Strategy** – presents the assessed risks and their mitigation and the risk transfer to Project Co

- **Section 12 – Benefits realisation and Post Project Evaluation** - describes plans to review the project post completion and the arrangements for ensuring that the benefits of the project are realised

## 1.3 HISTORY OF THE PROJECT

A Strategic Outline Case (SOC) submitted in April 2004 received approval from the Department of Health in July 2004. The SOC considered two main options (as well as a Do Minimum option for comparison):

- A redevelopment of the hospital on the existing Papworth Everard site

- A new development on the Cambridge Biomedical Campus, close to both the University of Cambridge School of Clinical Medicine and Addenbrooke's Hospital

The SOC proposed the option on the Cambridge Biomedical Campus as the preferred option.

An Outline Business Case (OBC) submitted in 2009 received approval from the Department of Health in April 2010.

The OBC provided detailed information on the review of the SOC Option Appraisal taking into account benefits assessment, capital costs and the outcome of the DH Generic Economic Model (GEM). The relocation of Papworth Hospital to the Cambridge Biomedical Campus remained the preferred option. In addition, it is the only option that meets the requirements of the Clinical and Research Vision and represents an affordable solution.

The OBC also provided details of the value for money assessment of a PFI procurement compared to a conventional procurement. This was conducted in accordance with HMT/DH guidance published in November 2008. The results of the quantitative and qualitative analysis supported the position that PFI offered better value for money than conventional procurement. A PFI procurement was the basis on which the OJEU notice was subsequently issued in August 2010. The GEM and the VFM analysis was updated and approved by the DH in 2012.

A Public Sector Comparator (PSC) was prepared as part of the OBC which provided a solution for delivery of the preferred option.

The following provides a brief description of the Cambridge Biomedical Campus, the site for the new hospital.

## 1.4 THE CAMBRIDGE BIOMEDICAL CAMPUS

In 1999 Addenbrooke's NHS Trust - now Cambridge University Hospitals NHSFT (CUHFT) - first set out its vision (The 2020 Vision at Addenbrooke's) for the future of the Addenbrooke's Hospital site – a vision for the transformation of the site into the Cambridge Biomedical Campus.

The Cambridge Biomedical Campus is already an international centre of excellence in biomedical research, which is set to expand considerably, significantly enhancing the capacity and capability for the translation of basic science into direct healthcare benefits. The Campus forms part of an Academic Health Science Centre – Cambridge University Health Partners (CUHP), approved in 2009 by the Department of Health.

The campus site is doubling in size from 70 acres to 140 acres. The world famous MRC Laboratory of Molecular Biology has relocated to the new site and was officially opened in May 2013. AstraZeneca has recently announced that its global R&D Centre and corporate HQ will relocate to the campus in 2016 following construction of its new facilities.

There has already been considerable public investment associated with the development of the Campus, including significant transport infrastructure involving a new access road from the M11 and the Cambridgeshire Guided Bus. Infrastructure development of the site is well advanced with services and new roads in place and a new Multi Storey Car Park to serve Addenbrooke's and Papworth Hospital under construction and due to open in Spring 2014.

The planning context for the development of the Cambridge Biomedical Campus is the Cambridgeshire and Peterborough Joint Structure Plan which was finalised in October 2003 and which outlines the way forward for the future development of the areas around Cambridge in terms of future housing expansion and the supporting transport and social infrastructure. As part of the Cambridge Southern Fringe Masterplan, the Cambridge Biomedical Campus is intended to provide clinical services to local people and to be a centre of excellence for treatment and research for the local and wider communities.

As part of the process of implementing the 2020 Vision, Liberty Property UK Ltd and Countryside Properties PLC, the developers of the Campus site, submitted an Outline Planning Application to Cambridge City Council in November 2006 for the whole of the 2020 site. The application comprised a number of documents including statements on Planning issues, Design and Access, Environmental Impact, Traffic/Transport, Landscape and Visual Impact, Flood Risk and the results of Geo Environmental studies. Outline Planning Consent was granted in October 2009.

The site for the new Papworth Hospital and the Heart and Lung Research Institute is a 3.1234 hectare serviced plot on the campus adjacent to the existing Addenbrooke's Hospital which is at the eastern boundary of the Papworth site. This adjacency is crucial to the clinical and design vision of the proposed new Papworth Hospital as there is a physical connection between the buildings to facilitate the provision of clinical services and the sharing of a range of support services.

The Trust has an Option Agreement to enter into a 170 year lease of the site with the Cambridge Biomedical Campus developers. The Option Agreement will be exercised prior to Financial Close.

## 1.5 CAMBRIDGE UNIVERSITY HEALTH PARTNERS

A significant context for the relocation of Papworth Hospital to the Cambridge Biomedical Campus is the development of Cambridge University Health Partners, one of five Academic Health Science Centres in England. The University of Cambridge, Cambridge University Hospitals NHS Foundation Trust, Cambridgeshire and Peterborough NHS Foundation Trust and Papworth Hospital NHS Foundation Trust made a successful joint application in March 2009 to the Department of Health to be designated as an Academic Health Science Centre (AHSC). The four organisations, which have many existing links agreed to come together into a more formal alliance and to create an entity known as Cambridge University Health Partners. The partnership brings the member organisations closer together in pursuit of excellence in clinical care, clinical education and health research so as to improve services to patients and the health of the wider population. It works to accelerate innovation and generate wider economic and social benefits in the Greater Cambridge area as well as nationally. It also provides a framework within which patient pathways can be streamlined and duplication of service provision avoided. Following its successful re-designation in 2014, Cambridge University Health Partners has begun its second period as an Academic Health Science Centre.

## 1.6 CLINICAL VISION

In 2003 the Trust commissioned the development of a Clinical Vision for cardiothoracic services in conjunction with Addenbrooke's Hospital, the Norfolk, Suffolk and Cambridgeshire Strategic Health Authority, the PCTs and referring hospitals in its principal catchment area and other stakeholders. The key themes of the vision are to:

- Consolidate and unify all major clinical specialities on one site for the benefit of patients
- Increase the capacity and capability to develop and deliver new services for patients
- Provide career and training opportunities for staff within a larger set of clinical and research institutions
- Integrate cardiothoracic basic research, clinical research and education to strengthen the position of the University of Cambridge as one of the leading international clinical academic centres, thereby leading to improved care for future patients
- Contribute to transforming the Cambridge Biomedical Campus into a world class centre for clinical and biomedical sciences

The 2003 Clinical Vision was updated in 2005 and again in 2010 to reflect the changes that have occurred in the rapidly changing fields of cardiothoracic medicine and surgery. A synopsis of the updated version is contained in Section 4. The key principles of the original document remain.

Central to the Clinical Vision is the concept of partnership working (as part of Cambridge University Health Partners) between the new Papworth Hospital, Addenbrooke's Hospital and the University of Cambridge. It is envisaged that each organisation will maintain their own identity, specialty and strengths but will be able to deliver more integrated, improved

services for patients as a result of the partnership. This is best achieved by the development of the new Papworth Hospital on the Cambridge Biomedical Campus as the vision is significantly impaired if it is geographically isolated from Addenbrooke's and the University's academic base which supports research and development.

Papworth retaining its own identity was one of the major issues which arose from public consultation, with exceptionally strong support for an independent organisation. This was also a condition of the Local Authority Overview and Scrutiny Committee's support for the relocation. Own identity gives a unique focus to the quality of care provided and to the ethos/culture of the organisation.

## 1.7 RECONCILIATION WITH THE OBC AND THE DRAFT / FINAL ABC

The completion of the ABC follows approval of the OBC and the draft ABC for the new Papworth Hospital .The scope of the project detailed in the draft ABC and the ABC differs from the OBC in only one main area. The scope of the project in the OBC included car parking provision for 600 cars. Car parking is now excluded from the scope of the project in the ABC with parking now being provided in an adjacent offsite 1200 space multi storey car park – a joint venture with and led by CUHFT. In addition to being a better value for money solution, offsite car parking provision releases space for landscaping and possible future expansion of Papworth Hospital. The scope of the project in the final ABC is identical to the scope of the project in the draft ABC.

## 1.8 APPROVALS PROCESS

The following table sets out the approvals to date.

| Approval | By | Date |
|---|---|---|
| SOC | DH | July 2004 |
| OBC | Papworth NHSFT Board of Directors | December 2007 |
| OBC - Financial Risk Rating (FRR) impact | Review by Monitor | July 2008 and August 2009 |
| OBC Strategic fit | East of England SHA | July 2008 |
| OBC | DH | April 2010 |
| Draft ABC | Papworth NHSFT Board of Directors | January 2012 |
| Strategic fit and Estates matters | NHS Midlands and East | January 2013 |
| Affordability / impact on FRR / CSRR | Review by Monitor | April 2012, April 2013 and March 2014 |
| Draft ABC approved | DH and HMT | May 2014 |

## 1.9 PROJECT STRUCTURE

The Trust has an agreed project structure to supervise the procurement and the development of the ABC as follows:

- Trust Board of Directors
- Project Sponsor (Papworth Hospital NHSFT Chief Executive)
- Project Management Group

The overall success of the complex programme detailed in this ABC involves a wide range of key stakeholders. Regular meetings are held with key stakeholders including the Papworth Hospital NHSFT Council of Governors, CUHFT, the University of Cambridge and commissioners.

The Board of Directors of Papworth Hospital NHSFT has ultimate responsibility for the successful delivery of the project. The Project Sponsor and Senior Responsible Officer is Stephen Bridge, Chief Executive of Papworth Hospital NHSFT. The Project Director reports directly to the Chief Executive.

A Project Management Group reports to the Trust Board of Directors. The Project Management Group includes senior clinical and management representatives.

## 1.10 GATEWAY REVIEWS

The Gateway Review process introduced by the Office of Government Commerce for procurement projects in Civil Central Government is an integrated element of the assurance process for major projects. The advice and guidance provided by the reviews at various stages of the project is intended to provide assurance to the procurement body that the project can proceed to the next stage.

This project was reviewed (Gateway 0) in December 2003 at the time of developing the SOC. Subsequently Gateway Healthchecks were carried out in July 2004 and February 2006 as part of the Outline Business Case development. A Gateway stage 1 Review (Business Justification) was carried out in January 2008. A Gateway stage 2 Review (Procurement Strategy) was carried out in November 2008. A Gateway 3 (Investment Decision) was carried out in July 2012.

The recommendations from all of the Gateway reviews and Healthchecks have been implemented.

## 1.11 PUBLIC INVOLVEMENT

The SOC reflected the significant engagement with the public and local and regional stakeholders which had already taken place, including the development of the Clinical Vision, the consultation on the application to become an NHS Foundation Trust, an earlier option appraisal and the new option appraisal described in the SOC. However, to ensure strong support for the final option chosen, both main options were taken forward to be tested through a full public engagement process.

The Trust carried out formal public consultation on the redevelopment of the hospital and also led the consultation on behalf of the PCTs. The consultation period ran from 1 June until 30 September 2005 with two options being consulted on:

- Redeveloping on the existing Papworth Everard hospital site
- Moving to the Cambridge Biomedical Campus, adjacent to Addenbrooke's Hospital and the University of Cambridge School of Clinical Medicine

To ensure that the public consultation document addressed the concerns of patients, carers and staff a number of meetings were held in advance of the preparation of the consultation document. The groups were representative of patient, family and carer opinion by geography, association with Papworth, age and gender. A series of departmental staff meetings were also held prior to the formal consultation process at which the Chief Executive and Project Director presented the redevelopment proposals.

A public consultation document was prepared by the Trust in support of the consultation process. *Building for our future. Public consultation on the proposed redevelopment of Papworth Hospital* (2005) explains why a new hospital is needed and outlines the merits and issues associated with both options.

11,000 consultation documents were issued to stakeholders including Foundation Trust Members, Governors, Staff, Fundraising Organisations, Parish Councils, Patient and Public Involvement Forums, Local Authorities, Members of Parliament, District General Hospitals, Primary Care Trusts, Strategic Health Authorities, Education Establishments, Research Establishments, Clinical Networks, Charities and Regional Agencies, East of England Ambulance Service, General Practitioners, Libraries and members of the general public. Thirty-eight stakeholder meetings were held during the consultation period including eight public meetings. Approximately 1,200 people attended a stakeholder meeting. 1050 questionnaires were received in response to the consultation document. The majority of respondents supported the relocation to the Cambridge Biomedical Campus.

The Papworth Joint Overview and Scrutiny Committee (OSC) was set up under the July 2003 Direction under Section 8 (4) of the Health and Social Care Act 2002. Cambridgeshire County Council acted as lead authority with other members representing the following Councils:

- Bedfordshire County Council
- Cambridgeshire County Council
- Essex County Council
- Hertfordshire County Council
- Lincolnshire County Council
- Norfolk County Council
- Peterborough City Council
- Suffolk County Council

The Joint OSC response to the consultation can be summarised as follows:

**"The Committee supports the proposed relocation of Papworth Hospital to the Cambridge Biomedical Campus, as the Committee believes that this option will be the best way to provide optimum clinical care for future patients".**

Since submission of the SOC, the OBC and the draft ABC the Trust has continued to engage with stakeholders in various ways, in particular through the Foundation Trust's membership and governors, as well as Patient and Public Involvement Forums, the Patients' Experience Panel, Patient Support Groups, wider Local Government interests and Members of Parliament. It has also continued to engage with staff, commissioners, referring hospitals, research organisations and the University of Cambridge.

Two stakeholder meetings were held to consider the design submissions from the shortlisted bidders. The first meeting received presentations from three bidders prior to the submission of interim bids and the second meeting received presentations from the two remaining bidders prior to the submission of the draft final bids. The meetings were extremely valuable interactive sessions that helped to influence the bidders' designs.

## 1.12 SUPPORT FOR THE PROJECT

As part of the development of the ABC activity projections were updated in consultation with commissioners. The updated projections are consistent with those contained in the OBC and confirm that the previous projections were robust. The activity projections used in this ABC also include the transfer of certain patient activity from Addenbrooke's Hospital as agreed with CUHFT.

Letters of support, covering over 80% of activity and income projections as shown in the following table, were received from NHS Peterborough and Cambridgeshire, the National Specialist Commissioning Team, NHS Blood and Transplant, Midlands Specialist Commissioning Group, East of England Specialist Commissioning Group and CUHFT.

### Figure 1-2 – 80% Test Applied in 2016/17

| Main Purchaser Name | APC Income | OP Income | Total Income | % of Total Income |
|---|---|---|---|---|
| National Specialist Commissioning Team (NSCT) | 20,470 | | 20,470 | 13% |
| East Midlands Commissioning Group | 10,425 | 968 | 11,393 | 8% |
| East of England Specialist Commissioning Group | 63,522 | 3,079 | 66,601 | 44% |
| Bedfordshire | 1,874 | 759 | 2,633 | 2% |
| Cambridgeshire | 11,108 | 2,691 | 13,800 | 9% |
| East and North Hertfordshire | 1,359 | 399 | 1,759 | 1% |
| Great Yarmouth and Waveney Teaching | 757 | 188 | 944 | 1% |
| Luton Teaching | 138 | 22 | 160 | 0% |
| Norfolk | 4,041 | 1,009 | 5,050 | 3% |
| Northamptonshire | 0 | | 0 | 0% |
| Peterborough | 1,626 | 414 | 2,040 | 1% |
| Suffolk | 5,288 | 878 | 6,165 | 4% |
| Addenbrooke's Activity Transfers | 3,289 | 1,828 | 5,117 | 3% |
| Tariff Reduction 12/13 | -4,745 | | -4,745 | -3% |
| **Assured Income** | **119,153** | **12,234** | **131,387** | **87%** |
| Private | 8,150 | 604 | 8,754 | 6% |
| Other Commissioners | 10,838 | 762 | 11,601 | 8% |
| **Non-Assured Income** | **18,988** | **1,367** | **20,355** | **13%** |
| Grand Total Gross Income | 138,141 | 13,600 | 151,741 | 100% |
| % Assured of Total Income | 91% | 9% | | |

Deloitte LLP was appointed in November 2012 by Midlands and East SHA to review projected activity levels in the business case. Their report substantiates the activity projections and this has been accepted by the commissioners and the SHA.

Following the reconfiguration of PCTs into Clinical Commissioning Groups (CCGs) in April 2013, Papworth's commissioning arrangements have changed to reflect the new landscape. Overall arrangements, however, remain very similar with the largest contract continuing to be managed by the Specialist Commissioning Group (SCG) which is now hosted by East Anglian Area Team. This contract amalgamates those previously covered by the National Specialist Commissioning Team, East Midlands and East of England Specialist Commissioning Groups and specialist elements of smaller contracts. The smaller, non-specialist contract covering the local PCTs is now lead commissioned by Cambridge and Peterborough CCG on behalf of associate local CCGs.

## 1.13 RELATIONSHIP WITH OTHER CAPITAL BUSINESS CASES

The Trust is not aware of any other capital investment business cases that will have a bearing on this business case.

## 1.14 HEART AND LUNG RESEARCH INSTITUTE

The development of the Heart and Lung Research Institute (HLRI), a joint venture between Papworth Hospital and the University of Cambridge is dependent upon the relocation of

Papworth Hospital to the Campus. This is a £40m project, to be co-located with the new Papworth Hospital and financed from charitable funds. It will be procured separately by the Trust in conjunction with the University of Cambridge. Cardiac and respiratory diseases remain the leading cause of GP consultation, hospital admission and death in the UK. The purpose of the Institute is to integrate basic science and clinical research resulting in improved clinical management of cardiovascular and respiratory diseases and better outcomes for patients.

The facilities for Education and Research include:

- A lecture theatre and seminar rooms
- Beds, outpatient and diagnostic facilities for clinical trials
- Laboratories for the University of Cambridge and for Papworth Hospital
- R&D infrastructure accommodation

The PFI bidders were required to masterplan the entire Trust site taking into account the adjacent Institute. Both bidders have satisfactorily responded to this requirement. Additionally the energy centre serving the new hospital will provide heat and power for the Institute.

The anticipated capital cost of the HLRI is approximately £40 million. Both the University and the Trust are confident that the necessary funding can be raised from charitable/philanthropic sources. The fund raising process has started and the Trust has access to existing charitable funds.

## 1.15 SUSTAINABILITY ISSUES

The Trust has developed its sustainability plans in line with guidance from the Department of Health. Sustainability is defined as 'Meeting the needs of current generations without compromising the ability of future generations to meet their own needs.' It is about energy efficiency, carbon reduction and recycling and also ensuring social justice and equity, and integrating environmental, health, social, political and economic issues into decision making.

In January 2009 the Department of Health issued 'Saving Carbon Improving Health' a document aimed at significantly reducing the impact the NHS has on the environment by setting a series of action points. 'Saving Carbon Improving Health' was developed in response to the need to take action on climate change in consultation with the NHS and other organisations.

One of the key recommendations in 'Saving Carbon Improving Health' is the development of a Board level Sustainable Development Management Plan**,** which Papworth Hospital's Board of Directors approved in March 2011. Success in the sustainable development management plan will allow Papworth Hospital to move towards being an environmentally responsible organisation, as well as contributing to the protection of natural resources and the development and support of sustainable local and global communities. The Sustainable Development Plan documents the initiatives to be actioned by the Trust's Sustainability Steering Group.

In order to monitor and reduce any negative impacts of the new hospital development on the environment a BREEAM Healthcare Assessment has been completed in respect of both bids

by an approved assessor. A BREEAM excellent assessment is required and both bidders achieved that rating. For further details please see Section 9.

### Green Travel Plan

Papworth's Travel Plan – the Greencare Plan – aims to promote greener, cleaner travel choices reducing energy consumption and waste.

The Greencare plan will cover staff, patients and visitors on both the existing site and the Cambridge Biomedical Campus. On relocation to the Biomedical Campus the Trust's plan will adopt the principles of the CUHFT travel plan to ensure consistency across the whole site.

In summary the key points of the Greencare Plan are:

- Promote healthier lifestyles
- Improve safety
- Reduce on site traffic

Methods to encourage staff and patients to use environmentally friendly alternatives to car travel wherever possible may include:

- The provision of secured bicycle racks located close to the main entrance
- The provision of centrally located staff showers and changing facilities for those cycling to work
- A staff car sharing scheme
- A reward mechanism for those staff taking part in the car sharing scheme
- Development of a flexible working culture enabling staff to work off-site
- Concessionary fares on local Public Transport
- On site public transport infrastructure – Cambridgeshire Guided Bus Scheme
- A fully integrated approach to the City's Public Transport links – e.g. Park and Ride

Some of the above initiatives have been implemented prior to relocation to support the Trust's sustainability agenda.

## 1.16 FM STRATEGY

In respect of hard and soft Facilities Management Services (FM) all hard FM services and the majority of soft FM services are included in the PFI contract. The Trust is not planning to have a period of interim services provided by the FM contractor within the PFI consortium given the complete relocation of the hospital to a new site. The potential for sharing services with CUHFT has been considered by both organisations and wherever possible and practical this will be introduced.

## 1.17 ENABLING WORKS

The Trust has negotiated an Option Agreement for the purchase from the Cambridge Biomedical Campus developers of a 3.1234 hectare plot of land for the new hospital and the HLRI. This is a fully serviced plot inclusive of site infrastructure and S106 contributions. Independent valuation and second opinion from suitably qualified surveyors support the proposed purchase, its terms and the price. The purchase of this land will be in advance of the sale of the existing site. Site purchase and sale of the existing site have been factored into the ABC financial model.

## 1.18 EXISTING PAPWORTH HOSPITAL SITE

The Local Development Framework for South Cambridgeshire District Council envisages a mixed use (housing and employment) planning consent for the existing site when it is no longer required as a hospital. Arrangements in respect of future use of the site will commence following Financial Close on the PFI for the new hospital.

# 2. CURRENT SITUATION

## 2.1 BRIEF OUTLINE OF THE TRUST

Papworth Hospital is an internationally recognised heart and lung centre and one of the leading cardiothoracic hospitals in the United Kingdom. It provides services to a core catchment of approximately three million people in Norfolk, Suffolk, Cambridgeshire, Mid and North Bedfordshire and surrounding areas and receives referrals for certain sub-specialties from throughout the UK. It is one of only five cardiothoracic centres in the UK able to carry out heart and lung transplants. In 2012/13 23,743 inpatients and day cases and 65,191 outpatients were treated and this activity is projected to grow.

The Trust provides adult services in cardiology, cardiac surgery, thoracic surgery, respiratory medicine and heart and lung transplantation. In 2012/13 the Trust had a turnover of £135 million and employed 1612 members of staff.

Papworth Hospital became a Foundation Trust on a shadow basis from April 2004, with full status from 1 July 2004.

## 2.2 THE TRUST'S SERVICES

Papworth Hospital's services are highly specialised and complex, characterised by:

- a focus on heart disease, lung disease and cancer (all of which are high national priorities)
- the use of complex technology with rapid development and change in approaches to diagnosis and treatment techniques and capability
- a network approach to disperse patient care and treatment where feasible to local settings
- growing numbers of elderly patients who have multi-system disease and co-morbidities and require multi-specialty care
- an emphasis on research, learning and development and the dissemination of expertise regionally, nationally and internationally

The heart and lung services can be broadly sub divided into three principal areas:

- Cardiac services. The management of heart disease, including a wide range of diagnostic and treatment modalities
- Thoracic (respiratory) services. The management of respiratory conditions by specialist thoracic surgeons and physicians, radiologists and histopathologists
- Transplant services. The transplantation of hearts and lungs

Additionally there is a range of vitally important clinical support services including Theatres, Critical Care and Anaesthetics (TCCA), pathology, radiology, sterile support services, pharmacy and professional support services.

All Trust services currently located on the Papworth site will either be included in the scope of the planned investment or provided in partnership with Addenbrooke's Hospital.

## 2.3 MISSION STATEMENT AND OBJECTIVES

The Trust's mission statement is:

> **"At Papworth our vision is to be the leading hospital providing excellence in specialist heart and lung patient care, based on research, education and innovation. Our focus is growth, value and effectiveness, with a commitment to the highest levels of clinical quality and providing the best standards of personalised care possible to our patients."**

This will mean:

- Being a recognised leader, nationally and internationally, in the introduction and development of specialist techniques, devices and therapies. Papworth Hospital will be an innovator and a pioneer
- Providing patient focussed care with the best possible outcomes. Papworth Hospital will be responsive to the needs and wishes of its patients and the population served
- Papworth Hospital's research will be fully integrated with clinical service provision, and will incorporate the highest academic standards, and critical appraisal
- Providing a high quality environment for teaching, training and development for both specialist and non-specialist staff
- Becoming ever more efficient and effective at what the hospital does. Papworth Hospital will meet and exceed its targets for activity, waiting times and quality, making the best possible use of resources
- Retaining and developing and recruiting excellent staff – Papworth Hospital will be an organisation that people of all disciplines aspire to join

## 2.4 COMMISSIONING FRAMEWORK AND TRUST CATCHMENT AREA

The commissioning arrangements are set out in Figure 2-1 below which details:

- the responsible commissioning body
- services commissioned
- contracted value of patient services income from commissioners in 2013/14 (which totals £121.1m )

Additionally the Trust has planned to receive £6.4m from private patients giving total patient services income of £127.5m.

## Figure 2-1 - Commissioning framework

| Commissioner | Service commissioned | Value of contracted activity 2012/13 |
|---|---|---|
| Specialist Commissioning Group (SCG) hosted by East Anglian LAT | Specialist services for residents of Norfolk, Suffolk, Cambridgeshire, Bedfordshire, Hertfordshire, Lincolnshire and Essex:<br>- Complex cardiology<br>- Cardiac surgery<br>- Thoracic surgery and medicine<br>- Transplantation including Ventricular Assist Devices (VADs),<br>- Pulmonary Thromboendarterectomy (PTE) - ECMO | £83m |
| Cambridgeshire and Peterborough CCG (on behalf of local CCGs) | Less Specialised Services for residents of Norfolk, Suffolk, Cambridgeshire, Bedfordshire, Hertfordshire, Lincolnshire and Essex comprising mainly:<br>- Cardiology<br>- Thoracic medicine, including Respiratory Support and Sleep | £31m |
| NHS Blood and Transplant | Transplant Donor Organ Retrieval | £1.6m |
| Other commissioners | Smaller contracts with NHS | £5.5m |

A local Joint Commissioning Group brings together a range of commissioners within the Eastern Area which represent the Trust's main local contracts, led by SCG and Cambridgeshire and Peterborough CCG. This group aims to balance increases in cardiothoracic activity required across the network to meet national revascularisation and catheterisation targets and the needs of a growing population within overall available resources.

### 2.5 DEMOGRAPHICS

The Trust's catchment population varies considerably by service. As the majority of referrals are received from Norfolk, Suffolk and Cambridgeshire, the population for these counties has been considered in analysing demographic changes.

Key growth forecasts for the population are as shown in Figure 2-2 below.

### Figure 2-2 - Population projections

| ONS Age Band | 2011 '000s | 2016 '000s | Percentage increase |
|---|---|---|---|
| 0-69 | 252 | 259 | 3% |
| 70-74 | 91 | 111 | 22% |
| 75-79 | 74 | 83 | 12% |
| 80-84 | 57 | 63 | 10% |
| 85+ | 55 | 66 | 20% |

## 2.6 PERFORMANCE INDICATORS

Papworth has a comprehensive system of key performance indicators. Regular reports are made to the Board of Directors, comparing the Trust's performance against national and local performance targets.

The following table compares the Trust's performance in 2012/13 against the targets included within Monitor's compliance framework.

| Monitor Metrics and National Priorities | Target 2012/13 | Performance 2012/13 |
|---|---|---|
| Clostridium difficile – meeting the C. Diff objective | 5 | 7 |
| MRSA – meeting the MRSA objective | 1 | 2 |
| Cancer – 31 day wait for second and subsequent treatment | 94% | 100% |
| Cancer – 62 day wait for first treatment from urgent GP referral (*reduced tolerance levels have been issued by CQC for certain specific single cancer sites. As Papworth only treats lung cancer the revised threshold of 79% applies)* | 79% | 82.1% |
| 18 weeks from GP referral to hospital treatment - admitted patients | 90% | 92.4% |
| 18 weeks from GP referral to hospital treatment - non-admitted patients | 95% | 98% |
| Cancer – 31 day wait from diagnosis to first treatment | 93% | 98.7% |
| Compliance with the requirements regarding access for people with learning disability | compliant | Achieved |

Monitor has rated the Trust as follows in the last 3 years:

| | 2010/11 | 2011/12 | 2012/13 |
|---|---|---|---|
| Financial Risk Rating | 5 | 4 | 4 |
| Governance | Green | Green | Green |

## 2.7 FINANCIAL AND ACTIVITY PERFORMANCE

The Trust reported a surplus of £6.48m for the 2012/13 year on a total income of £135m. The Trust over-achieved the planned Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) for the year and a healthy balance sheet position was achieved with a £37.2m cash balance.

In 2012/13 the Trust was very close to its planned activity targets for inpatients and day cases and significantly exceeded its target for outpatient attendances. The following table summarises the actual activity against plan in 2012/13.

**Figure 2-1 - Actual Activity against Planned Activity 2012/13**

| Service | Actual | Planned | Variance Fav/(Adv) |
|---|---|---|---|
| Cardiology | 8,509 | 8,467 | 42 |
| Cardiac Surgery | 2,508 | 2,372 | 136 |
| Thoracic Surgery | 527 | 603 | -76 |
| Respiratory Support and Sleep Centre | 6,897 | 7,210 | -313 |
| Transplant / Ventricular Assist Devices | 779 | 675 | 104 |
| Thoracic Medicine | 4,525 | 4,829 | -304 |
| **Total Inpatients / Day Cases** | **23,745** | **24,156** | **-411** |
| **Outpatients** | **63,968** | **61,181** | **2,787** |

*(Billed only)*

## 2.8 THE TRUST'S ESTATE

The main hospital site is based in the village of Papworth Everard approximately 15 miles from the centre of the City of Cambridge. Comprising 21 different buildings, the hospital is spread over 14 acres. It incorporates all of the clinical buildings as well as a central administration unit and offices. There are two nurses homes and a further three residential properties away from the main site in the village. A number of houses within Papworth Everard provide staff accommodation.

The main hospital facilities include:

- 5 theatres and 5 catheter laboratories
- 223 inpatient beds
- 33 day case beds
- 33 critical care beds
- 4 recovery beds
- 22 outpatient consulting rooms

A significant proportion of the estate dates back to before the hospital became part of the NHS in 1948, with some elements dating back to 1860. Much of the Trust's property, particularly that built pre-war, was not designed for the delivery of modern healthcare. Despite continuing investment to refurbish and modernise the estate much of it is beyond its functional life and has poor clinical adjacencies. The Trust recognises that it is close to the limit of further development of its current facilities.

## 2.9 LEARNING AND EDUCATION

Education, learning and development are essential for all staff at all levels within the organisation to be able to achieve a patient focused service. Learning for all staff is required to ensure that staff across the entire patient pathway have the required skills and competencies.

As a recognised "Investor in People" (IiP), Papworth has historically invested in education and learning at all levels within the organisation for both organisational needs and personal development.

Papworth has a clear 'Time for Learning' process which gives a framework for support for learning and development based on appraisals for all staff linked to organisational and individual objectives. A review of internal provision of training has resulted in workshops more focused on organisational priorities and an increasing focus on practical learning with clear work-based outcomes.

## 2.10 RESEARCH AND DEVELOPMENT

Research and Development activity at Papworth is described in Section 7.

# 3. STRATEGIC CONTEXT

## 3.1 INTRODUCTION

The 2007 OBC set out the case for new cardiothoracic hospital facilities in Cambridge in the light of existing national and local imperatives. The ABC confirms that position.

## 3.2 NATIONAL CONTEXT

The origins of the SOC and OBC are rooted in the NHS and Cancer Plans of 2000 and the subsequent National Service Frameworks for Coronary Heart Disease (CHD) and Older People. Many aspects of these plans remain highly relevant, but there have been significant developments in the national context since 2007.

The NHS Constitution 2010 established in law the principles, values, rights and responsibilities of the NHS to the public, patients and staff. The seven key principles that guide the NHS have been applied to every aspect of the planning for new Papworth Hospital in Cambridge:

- Providing a comprehensive service, available to all
- Access based on clinical need
- Care that aspires to the highest standards of excellence and professionalism
- Services that reflect the needs and preferences of patients, families and carers
- Working in partnership with other organisations in the interests of patients, local communities and the wider population
- Providing best value for tax payers' money
- Accountable to the public, communities and patients.

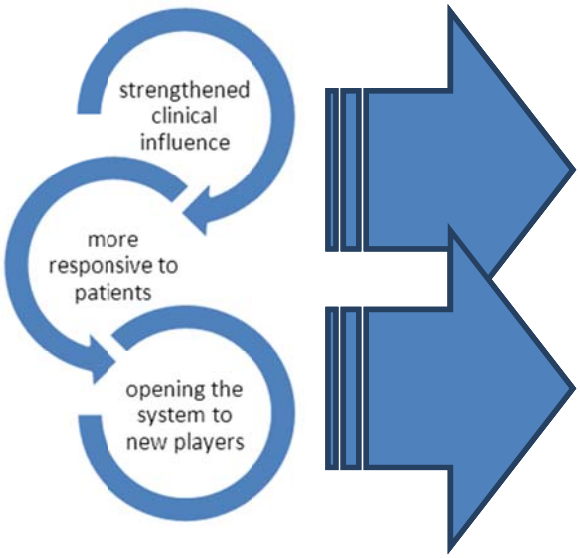
The provisions of the Health & Social Care Act 2012 have been addressed in the development of the ABC:

- Putting patients and public first – no decision about me without me; local Health Watch supported by Health Watch England
- Improving health care outcomes. NHS Outcomes Framework supported by commissioning guidance and provider payment mechanisms (tariff; standard contract; CQUIN)
- Commissioning for patients – clinically led GP Consortia; supported by NHS Commissioning Board
- Local democratic legitimacy – increased co-operation between the NHS and local authorities; a Health & Wellbeing Board for every upper tier local authority
- Regulating healthcare providers – enhanced role for governors of Foundation Trusts; removal of the private patient income cap; new licensing regime for FTs; new roles for Monitor.

## 3.3 A CHANGING SYSTEM

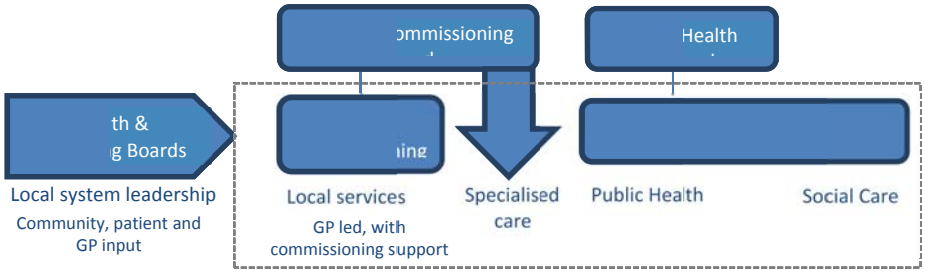
The NHS in England has undergone major system change in recent years, driven by structural changes, power shifts and enabling mechanisms.

System Reform:




Structural changes have transformed both the commissioning and provider landscapes:

Commissioning (from 2013)




Providers:

Moving to a position where most providers are:

- NHS Foundation Trusts (clinically and financially sustainable, independent from direct Department of Health control)
- Any Qualified Provider (AQP)
    - encouraging new entrants
    - changing delivery of NHS funded services to autonomous or semi-autonomous provider organisations meeting defined standards, and competing to deliver improved quality and efficiency

Enabling mechanisms include:

- more information for patients, and encouraging patient choice (providers and consultant teams)
- outcomes framework / national performance measures
- Quality Innovation Productivity and Prevention (QIPP) programme to deliver efficiency savings (up to £30bn by 2021)
- Any Qualified Provider (AQP) to permit new entrants
- Innovation strategy to drive adoption of best practice, new technologies and service improvements, including encouraging industry involvement
- using payment mechanisms to achieve better value (developing use of best practice and local tariff flexibilities, and penalising poor performance)

The most significant sustainable improvements in system cost-effectiveness will come from:

- more integrated care across current health and social care organisational and budgetary boundaries
- changes in how care is provided for the elderly and people with long term conditions, including domiciliary and community-based care
- hospital reconfiguration, including the provision of appropriate specialist care
- disease prevention including lifestyle choices

## 3.4 SERVICE STRATEGIES

### Coronary Heart Disease (CHD) Services

The National Service Framework was a 10 year strategy, launched in 2000, to reduce CHD and stroke-related deaths by 40% by March 2012. This target was met five years ahead of schedule. Well over 90% of people experiencing chest pain for the first time are now seen by a specialist within two weeks. Additions to the NSF in 2005 aim to ensure that people with arrhythmias (irregular heart beats) quickly receive an assessment and effective treatment. However, to quote NHS Choices, “March 2010 did not mark the end of the NSF. Much of what was set in the framework is as relevant now as it was12 years ago. .”

In addition to improvements in CHD services, the NHS has changed a lot since the NSF was published. Working practices in cardiology are changing; patient expectations have changed; technology has advanced. In future, the NHS will need to focus even more firmly on improving quality and productivity.

Papworth has been a major contributor to these improvements in CHD services, but its ability to fully meet future demands for further stepped changes in quality and productivity will be limited until the move to new facilities is complete.

### Cancer Services

The targets of the NHS Cancer Plan 2000 were strengthened in 2007 by the Cancer Reform Strategy to apply to referral from an NHS Screening Service.

In 2011 the National Cancer Director published his review of the Cancer Reform Strategy in a document titled "Improving Outcomes: A Strategy for Cancer". This included a review of the waiting times standards to ensure they retained clinical justification and remained appropriate, in line with the Coalition Government's commitment to focus on outcomes rather than process targets. The review concluded that cancer waiting time standards have helped drive service improvements and have been beneficial to patients and they should be retained without any changes. It noted that all the current waiting time standards are consistently achieved at national level but some Trusts and local health economies struggle to achieve them.

### Services for Older People

Research published in 2008 to support the NSF for care of older people (2001) concluded that the principle that frail older people, or those with complex needs, should receive integrated and long-term care services is a difficult one to put into operation. The research demonstrated a number of problematic areas for person-centred care; that services are often fragmented; that the needs of the system may prevail over those of service users; that old people are not enabled to make their own decisions; and that they are not always treated with dignity and respect. Recent national high profile events and extremely adverse publicity have reinforced these conclusions.

The planning and provision of services and facilities at the new Papworth Hospital will attach the highest importance to these aspects of patient care.

## 3.5 NHS EAST OF ENGLAND STRATEGY

The Strategic Health Authority in 2009 set out its clinical vision for the NHS in the East of England for the following decade in a document titled *Towards the best, together.* This set an ambitious goal of being the best health service in England. It drew on three earlier projects:

- Looking to the future
- Improving lives, saving lives
- Our NHS; our future

These earlier reviews provided the strategic context for the proposals in the OBC. The main drivers are unchanged and remain relevant to the ABC:

- A growth in the East of England population of over 11% over the next 14 years. This growth will arise in part from inward migration to new housing developments but the main cause is because people are living longer; the over-65 population is predicted to increase by 33% over the next 20 years
- Increased expectations from people that they will have a choice in their treatment and care and where and how they receive it

- The importance of quality standards in the delivery of health services and how achievement of standards will influence choice of providers
- Significant increases are likely in age related and long term conditions
- The influence of technological advances in driving change in services
- The need to create a high quality pattern of services that meet patient needs in an affordable way

*Towards the best, together* reaffirms that services should be centralised where this will improve outcomes or enhance the sustainability of services and that patient choice only relates to those services that meet quality standards. The SHA recognise that the co-location of Papworth and Addenbrooke's Hospitals on the Cambridge Biomedical Campus will allow both organisations to develop as specialist centres. The ABC is consistent with NHS East of England's view that Papworth's specialist cardiothoracic services must be co-located with the clinical services provided by Addenbrooke's Hospital and the research facilities that will be located on the Cambridge Biomedical Campus.

The draft Appointment Business Case was approved by the Board of the Midlands and East SHA at their meeting on 28 January 2013. The Board endorsed both the geographical location and the strategic fit of the proposals.

### 3.6 EAST OF ENGLAND SPECIALISED COMMISSIONING GROUP (SCG)

Papworth works closely with the SCG as a significant proportion of its services are commissioned by this group. The SCG's five year plan to 2015 is set out in its strategy *Driving Specialised Service Excellence* which complements the NHS East of England's clinical vision through alignment with its pledges and clinical pathway proposals.

The ABC addresses the SCG's ambition of commissioning specialist healthcare fit for the population. It is consistent with the SCG's analysis and projections based on demographic information for the East of England region and the data available on current activity and prevalence of specialist conditions.

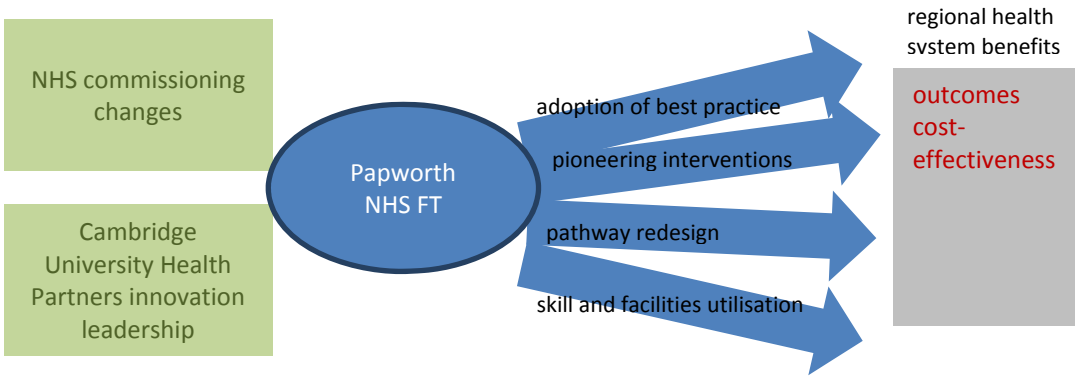
In the 2014/15 Commissioning intentions, the SCG wrote that they will continue to work closely with the Trust and with Cambridge University Hospitals to support the planned co-location of Papworth Hospital with the other organisations on the Cambridge Biomedical Campus. It recognises the importance of this and the benefits it will bring to its patients as they will have immediate access to a range of complimentary services and the development will also bring forth opportunities in terms of research and education.

### 3.7 PAPWORTH HOSPITAL WORKING IN PARTNERSHIP

The development of Cambridge University Health Partners (CUHP), further strengthened by the relocation of Papworth Hospital to the Cambridge Biomedical Campus, provides Papworth NHSFT with a vital opportunity to improve the outcomes and cost-effectiveness of cardiorespiratory care.

The relocation of Papworth to the Cambridge Biomedical Campus will further strengthen collaboration both within CUHP and with other research and life sciences partners.

As a specialist centre, Papworth has the opportunity to work with the new commissioners and through CUHP to deliver improvements to outcomes and the cost-effectiveness of cardiorespiratory care in the regional health economy.




Realising this opportunity will require leadership and collaborative influence during a period of major change and financial challenge. To achieve this potential, Papworth NHSFT's strategic positioning will be as a leader and key influencer of delivering high quality and cost-effective cardiorespiratory care in the regional healthcare system.

This will require a system-wide perspective and working closely with both commissioners and other providers to develop improvements in service delivery across the whole patient pathway, including diagnosis, treatment and follow-up monitoring, and could include changes to the location of care delivery where appropriate.

Through CUHP Papworth also has a lead role in the education and training of cardiorespiratory clinical expertise across the region.

# 4. CLINICAL STRATEGY

## 4.1 INTRODUCTION

Papworth's strategic direction is governed by the need to meet the needs of patients, to respond to national, regional and local strategic drivers, and to provide modern, safe and clinically effective patient pathways from a high quality purpose-built centre.

The Trust's central aim is to provide the highest quality, patient-focused care. This section describes the future model of care that has been developed to achieve this aim.

## 4.2 OVERVIEW OF THE MODEL OF CARE

The model of care has been derived from the Clinical Vision for new Papworth Hospital, the key themes of which are described in Section 4.3 below.

The model of care represents a radical re-examination of the way in which care is delivered, a scrutiny of the structural processes behind the delivery of care, and a re-alignment of care delivery to ensure that the patient continues to be at the centre. Continuing to improve the patient's experience is the driving principle, replacing historical processes with modern systems.

The Trust takes a whole systems approach to the emergency, elective and ambulatory care process, putting the patient at the heart of all processes and targeting healthcare needs. It provides integrated service delivery with condition/disease-based care pathways based on severity of illness.

The philosophy promotes a positive approach to assessment and diagnosis, ensuring that the patient is cared for in the most appropriate setting by the most appropriate people. Staff work collaboratively in multi-disciplinary teams using shared protocols and pathways, providing safe and effective intra and inter-specialty clinical care.

## 4.3 PRINCIPAL THEMES IN THE CLINICAL VISION

Central to the vision is the concept of partnership working between Papworth Hospital, Addenbrooke's Hospital and Cambridge University School of Clinical Medicine. The delivery of the Clinical Vision and, in particular, the co-location of specialist and general cardiac and respiratory services close to Addenbrooke's Hospital services, will benefit patients from the local area and those travelling from across the region and country. The key themes of the vision are to:

- Consolidate and unify all major clinical specialties on one site for the benefit of patients
- Increase capacity and capability to develop and deliver new services for patients
- Provide improved access to the full spectrum of specialist clinical services
- Enable speedier cross-referrals between specialties and earlier interventions
- Create a single cancer centre for pulmonary and upper gastrointestinal cancers

- Relocate cardiothoracic surgery, adjacent to and involved in the regional trauma centre

- Provide purpose built accommodation with state-of-the-art facilities which will improve the care environment

- Integrate cardiothoracic basic research, clinical research and education to strengthen the University of Cambridge's position as one of the leading international clinical academic centres, thereby leading to improved care for future patients, and attracting the highest calibre of staff

- Contribute to transforming the Cambridge Biomedical Campus into a world class centre for clinical and biomedical sciences

- Provide career and training opportunities for all staff

## 4.4 BENEFITS OF CO-LOCATION WITH ADDENBROOKE'S

There will be many improvements in services to patients as a result of Papworth Hospital being co-located with Addenbrooke's Hospital. Examples include:

- Co-location of services will facilitate access to other specialties e.g. diabetologists, renal physicians, neurologists, vascular surgeons and gastroenterologists. Many patients have other co-morbidities and rare complications which require specialist input

- New Papworth Hospital will be the location of Coronary Angiography and Percutaneous Coronary Intervention services on the campus and the interim Addenbrooke's Hospital provision of coronary angiography will be transferred to Papworth Hospital. This will result in a more efficient use of facilities and expert staff. The integrated outpatient facility at Papworth Hospital will enable the provision of a one-stop diagnostic service to include a clinical assessment followed by state-of-the-art non-invasive testing

- Structural heart disease requires input from a multi-disciplinary team. Whilst patient assessment and procedures will continue to be undertaken in new Papworth Hospital, the input from the wider team at Addenbrooke's Hospital will prove invaluable e.g. radiology, neurology, vascular surgeons. In addition the opportunity to expand the established endovascular intervention programme can be explored with the broader skill base on site

- Addenbrooke's Hospital High-Risk Pregnancy Service has an increasing number of referrals from across Norfolk, Suffolk and Cambridgeshire for antenatal care and delivery of complex patients, including those with cardiac disease in a multi-disciplinary environment. The Papworth Grown Up Congenital Heart Disease (GUCH) service refers patients to this service for management during pregnancy on a shared care basis. Direct input from Papworth GUCH cardiologists would be possible following the move to new Papworth Hospital. A pathway for referral to genetic services and counselling at Addenbrooke's Hospital has already been established and will be enhanced by the co-location of Papworth and Addenbrooke's Hospitals

- The sleep physicians at Papworth Hospital have excellent links with the neurology department at Addenbrooke's Hospital and a joined up service offered on a regional and supraregional basis for people with nocturnal epilepsy and parasomnias will be an area of development

- Among the most frequent referral sources to the Progressive Care Programme at Papworth Hospital are the general and neuro critical care units in Addenbrooke's Hospital. Co-location will allow regular input from Respiratory Support and Sleep Centre clinicians to assist patients who are failing to wean from invasive ventilation and allow early recognition of people likely to benefit from the programme

- The Cystic Fibrosis service runs joint clinics with Addenbrooke's Hospital diabetologists and hepatologists and has strong links with many other specialties at the hospital. The links with Addenbrooke's Hospital will be further enhanced by relocation to the Cambridge Biomedical Campus

- The tuberculosis service at Addenbrooke's Hospital sees a large number of cases. There will be an opportunity for joint working and natural synergy with Papworth Hospital's lung defence team dealing with non-tuberculosis mycobacteria.

- Benefits will result from co-location with Addenbrooke's Hospital in respect of Oncology services. Presently there are separate services for patients on the Addenbrooke's Hospital site who have disseminated disease or for other reasons are thought unsuitable for radical work up. Co-location will increase the accessibility of the Papworth Hospital team for these patients. At present the Addenbrooke's Hospital oncologists are visiting consultants at Papworth Hospital - co-location will further enhance accessibility to their expert advice for Papworth patients. Advanced VATS techniques have extended the palliative role of surgery in dealing with malignant effusions and are attracting both regional and national referrals. Papworth Hospital also provides surgical expertise to the paediatric oncology service at Addenbrooke's Hospital. With co-location there will be greater opportunities for joint discussion of patients in other cancer MDT's who may benefit from the opinion of Papworth Hospital specialists and vice versa.

- Pulmonary hypertension is associated with several medical conditions such as connective tissue disease, congenital heart diseases, liver diseases and HIV. The Pulmonary Vascular Diseases Unit at Papworth Hospital has close working relationships with many departments in Addenbrooke's Hospital, particularly respiratory medicine, cardiology, rheumatology, hepatology and haematology. This will be strengthened by the relocation of Papworth Hospital to the Cambridge Biomedical Campus.

- The relocation of Papworth Hospital to the Cambridge Biomedical Campus offers the perfect opportunity for closer working between transplant clinicians at Papworth and Addenbrooke's Hospitals. Addenbrooke's Hospital is a major centre for kidney, liver, small bowel, and pancreas transplantation. Where appropriate, integration of skills and resources for all the common areas of transplant services across the site can be considered. With respect to patient care for different organ groups, co-location will facilitate access to specialist clinical expertise across various specialties.

- Inpatient Care of Acute Respiratory Patients. Currently acute respiratory patients from the Addenbrooke's catchment area are treated in Addenbrooke's Hospital. The Clinical Vision proposes that these patients will be treated in the new Papworth Hospital as part of the integrated respiratory service. The vision for the integrated respiratory service will be to care for patients whose primary problem is respiratory within Papworth Hospital. In addition all respiratory patients will get improved access to the other specialist diagnostic and clinical services provided within Addenbrooke's Hospital.

- In respect of radiological services there will be an opportunity to co-operate effectively between both hospitals to ensure optimal use of imaging facilities. This has many potential benefits including easier management of equipment downtime. Also there will be improved ability to work closely with radiology staff in other specialties and better access to specialist clinical opinions and medical physics support.

## 4.5 INFORMATION AND COMMUNICATIONS TECHNOLOGY

Information systems and technology will be upgraded over the period leading up to the move to the Cambridge Biomedical Campus progressively making clinical and administrative processes more efficient, providing greater clinical support and improving patient safety, and easing the physical move of services to the new Papworth Hospital facilities.

## 4.6 MEETING THE NEEDS OF PATIENTS

Section 3 outlined the drivers for change in the NHS. Papworth is responding to these changes through its new model of care, both in the way in which it provides services now and also in the way in which services will be provided from a new purpose built hospital in the future. The ethos at Papworth has always been one of putting patients at the centre of its planning and delivery of services. The model of care places the patient at the centre of the service with particular emphasis being placed on correct clinical adjacencies, streamlined patient pathways and high quality services and environment. The following sections describe the key features of services in the new hospital.

### Inpatient Services

The organisation of beds is designed to meet the needs of patients. For example, the provision of inpatient beds in the new hospital will have 100% single rooms, all with en suite facilities. There is one minor exception in the Respiratory Support and Sleep Centre (RSSC) where two 4-bed bays are planned.

The model of care requires that all respiratory beds and the RSSC will have easy access to the diagnostic and outpatient services and day care beds. The cardiology and cardiothoracic surgical beds also have easy access to and from the day case unit, theatres, the interventional suite and critical care.

This configuration of services will allow the most effective use of nursing and junior medical staff with common skills. Ease of transfer of patients from one area to another is essential, for example cardiac intervention laboratories to cardiology wards and cardiothoracic surgical patients to critical care.

### Diagnostic Services

The centralised diagnostic and imaging services are required to support all stages of the patient pathway. Papworth's specialist expertise offers the opportunity to re-configure current cardiac non-invasive diagnostic facilities to create a more integrated diagnostic unit, thus improving patient pathways. The creation of a diagnostic centre will allow patients to access all appropriate services in one visit.

Whilst a diagnostic centre has been operational since 2008 at Papworth, constraints of the current site have meant that existing facilities have had to be re-configured to create the diagnostic centre. As a result a number of services that will be in the diagnostic zone when the hospital moves to the Cambridge Biomedical Campus are provided as separate services thus reducing the efficiency of delivery. Relocation to the new site will overcome such inefficiencies.

### Centralised Ambulatory Care and Outpatient Services

A key feature of the new model of care will be the requirement for efficient planning of ambulatory care treatments and outpatient services.

Within the new model of care, cardiac and respiratory outpatient services will be sited within a single centralised outpatient department, co-located with the diagnostic centre, offering patients easy access to imaging and other investigative services.

### Combined Cardiac and Respiratory Day Case Service

The day ward will provide for both cardiac and respiratory day patients. This is in contrast to the present inefficient split site arrangements. Patients who attend the hospital for a diagnostic or interventional procedure that requires a period of recovery will access a day case bed in the new hospital.

### Combined Theatre and Interventional Services

The combined suite is designed to offer flexibility within the disciplines of cardiothoracic surgery and cardiological intervention, in keeping with the dynamic developments and advances within these specialties.

Patients requiring cardiothoracic surgery will be taken to a pre-procedure waiting area and subsequently transferred to an operating theatre. Following surgery, the patient will be transferred directly into recovery or intensive care beds located within the critical care unit.

Patients requiring cardiology intervention will also be taken to a waiting area and then directly into the catheter laboratories. Following the procedure, the patient will be transferred to the day ward adjacent to the catheter laboratories, or to the appropriate inpatient facilities, which will be in close proximity to theatre and intensive care in case of emergency complications.

The facilities within the theatre and interventional suite will comprise five theatres, two hybrid theatre/intervention rooms and five catheter laboratories. To ensure future flexibility the design of the facilities are such that, if required, theatres can be converted to catheter laboratories and vice versa.

### Critical Care Services

Critical care services will provide for critical care levels 3 and 2 and support provision of levels 1 and 0 within the inpatient ward areas. This will facilitate flexible use of critical care beds maintaining elective throughput as well as providing access for acute admissions.

Critical care includes the surgical recovery area and high dependency beds and will be located directly adjacent to theatres and the catheter laboratories and has easy access to the wards.

## 4.7 DELIVERY OF NEW SERVICES WITHIN THE MODEL OF CARE

Relocation will facilitate the development of new services and provide opportunities to evaluate new devices and technologies, taking advantage of the expertise of the joint consultant workforce, research institutes and biotechnology companies on site.

Papworth will continue to provide elective and emergency pathways for cardiac and respiratory patients, with improvements made to the patient pathway as a result of a purpose built design and co-location with Addenbrooke's Hospital.

# 5. CASE FOR CHANGE

## 5.1 CASE FOR CHANGE AND CLINICAL VISION

The Trust's Case for Change arises from the need to realise the Clinical Vision and the increasing inadequacy and inappropriate location of the existing hospital. Papworth needs to invest in new purpose-designed facilities, incorporating the latest developments in hospital design and infection control, which will enhance patient care and allow the development of new services.

The Clinical Vision sets out a number of key objectives:

- Continue to provide patient care with the best possible outcomes
- Continue to introduce and develop specialist practices, techniques and therapies
- Fully integrate research with clinical service provision, incorporating the highest academic standards using research knowledge to improve patient treatments
- Provide a high quality environment for teaching, training and development for both specialist and non-specialist staff ensuring the workforce of the future has the skills and experience it will need
- Become more efficient and effective to ensure targets for activity, waiting times and quality are met and exceeded
- Retain, recruit and develop the staff that can help deliver the vision

## 5.2 CHALLENGE FROM PRESENT FACILITIES

Without change, the present facilities and ways of working at the Papworth Everard site will present an ever increasing challenge in meeting these objectives. For example:

- Poor clinical adjacencies and the condition of some of the facilities on the current site would continue to militate against the provision of high quality patient care
- Immediate access to the clinical specialties of a major acute hospital would continue to be unavailable to those Papworth patients who would benefit from co-location with Addenbrooke's Hospital
- Improvements in education, training, and research and development would be restricted
- It would be difficult for the Trust to achieve improvements in efficiency and performance

With the passage of time it has become increasingly evident that to continue to provide services from the present site in the medium term will require significant investment. Much of the current estate infrastructure will require replacement within the next few years if the hospital were to remain in its present location even for a limited period. A conservative estimate of this capital investment is £25m.

The new hospital will enhance patient care, improve staff working conditions, solve the worsening problems of functional suitability and site layout and enhance the ability to retain and recruit key staff and enable a significant enhancement in research and development capacity and capability.

## 5.3 AREAS OF BENEFIT

There are several major areas of benefit which will be realised by the proposed development of the new Papworth Hospital on the Cambridge Biomedical Campus. These are:

- **an improvement in the quality of patient services** - The clinical services at Papworth Hospital are recognised nationally to be excellent, despite the limits and constraints of the existing estate configurations and conditions and the inappropriate geographical location of the hospital. The model of care will lead to improved overall service quality with more streamlined and effective patient pathways. This should reduce delays in treatment and will also facilitate the achievement of shorter lengths of stay

- **an improvement in research and development and in learning and education.** Purpose built modern research & development facilities and modern learning and education facilities will be provided as part of an associated Design and Build HLRI. The relocation of Papworth to the Cambridge Biomedical Campus will contribute significantly to this site developing into a world class centre for clinical and bio-medical sciences. The relocation to the Cambridge Biomedical Campus will unlock additional capital and revenue resources from external bodies. Section 7 of the ABC details the research and development vision and the benefits that will arise from investment in this area

- **an improvement in the environmental quality of services** The existing Papworth Hospital has many pre-war buildings and overall was not designed for the delivery of modern healthcare. The site has grown incrementally over the years to meet the rising demand for cardiothoracic services. However this growth has resulted in poor functional relationships between clinical departments, characterised by the need to transport patients between a number of buildings, as well as site congestion. Although much has been done to improve the quality of the patient care environment at Papworth the underlying fundamental problems of aging infrastructure, poor functional suitability and site layout can only be addressed by the re-provision of the hospital

- **better access to services.** Access to hospital services can be assessed in terms of the ease or difficulty in being treated by the hospital and the ease or difficulty in reaching the hospital or other facilities where diagnosis and treatment are provided

    - Papworth Hospital serves a core catchment of around 3 million people in Norfolk, Suffolk, Cambridgeshire, Mid and North Bedfordshire and surrounding areas and also receives a large number of referrals from across the UK. Currently, the hospital is accessible by road but is almost inaccessible by public transport

    - Cambridgeshire County Council has improved the transport infrastructure by providing a Guided Bus System with direct links to the Cambridge Biomedical Campus as well as building a new link road to the campus from the M11. These improvements to the transport infrastructure will facilitate patient, public

and staff access to Papworth Hospital and its services on the Cambridge Biomedical Campus.

- **an improvement in productivity, efficiency and economy.** The proposed development will enable the continuing provision of high quality, efficient services to patients. The model of care that underpins this ABC will bring about better ways of working and greater productivity. The provision of purpose built facilities that are co-located with other related services will facilitate better organisation of care which will support innovative practice

    - Single room inpatient accommodation as well as providing direct patient care benefits will enable reductions in length of stay and an increase in occupancy levels.

    - Co-location with Addenbrooke's will facilitate the sharing of support services leading to an improvement in service provision and economies of scale

    - Investment in a new building will reduce expenditure by resolving poor clinical adjacencies and will create a modern facility with better energy performance and costs and more efficient space utilisation.

# 6. CAPACITY AND DEMAND

## 6.1 PURPOSE OF THIS SECTION

The purpose of this section is to document the methodology and assumptions that have been used in projecting future activity volumes and capacity requirements at the Trust, and to present the projections.

Activity and capacity projections have been calculated for each financial year up to 2021/22. These cover:

- Patient episodes for day cases, elective and non-elective inpatients
- Outpatient appointments
- Day case and inpatient beds
- Critical care beds
- Operating theatres
- Catheter laboratories
- Outpatient clinic rooms
- Radiology and other diagnostic facilities

The projections are presented here at a summary level; however any of the projected activity / capacity figures can be split according to:

- Purchaser (commissioning organisation)
- Admission / appointment type
- Specialty and/or subspecialty
- Service category
- Healthcare Resource Group (where appropriate)
- OPCS4 procedure code

## 6.2 OVERVIEW OF METHODOLOGY

At a high level, the methodology adopted is as follows. Each step is then explained more fully in the paragraphs below.

- The baseline activity for the model is the 2012/13 outturn
- Growth is applied to the baseline activity to estimate likely future activity

- Future activity is adjusted to account of any known or planned service transfers, either to or from the Trust
- Performance and efficiency assumptions are applied to the activity estimates
- Throughput and utilisation assumptions are applied to the activity estimates in order to derive the capacity required to accommodate future activity volumes

## 6.3 BASELINE

The baseline used in the model corresponds to the Trust's 2012/13 Admitted Patient Care Minimum Dataset, the Critical Care Period Extension and Outpatient Minimum Dataset. A summary of the baseline and projected activity at 2017/18 (first full year of operation) is shown in Figure 6-1.

**Figure 6-1 - 2012/13 Baseline**

| Speciality | Day cases and Inpatient spells at 2012/13 | Projected Inpatient and Day case activity at 2017/18 | Outpatient attendances at 2012/13 | Projected Outpatient activity at 2017/18 |
|---|---|---|---|---|
| | | | | |
| Cardiology | 8,509 | 11,446 | 20,785 | 28,355 |
| Cardiac Surgery | 2,508 | 3,190 | 5,077 | 6,489 |
| Thoracic Surgery | 527 | 756 | 881 | 1,229 |
| Respiratory Support and Sleep Centre | 6,897 | 8,716 | 17,290 | 22,118 |
| Transplant / Ventricular Assist Devices | 779 | 867 | 2,910 | 3,719 |
| Thoracic Medicine | 4,525 | 5,596 | 17,025 | 20,682 |
| Respiratory – from CUHFT | | 1,519 | | 6,468 |
| Cardiology – from CUHFT | | | | 8,925 |
| **Total** | **23,745** | **32,090** | **63,968** | **97,985** |

## 6.4 ACTIVITY GROWTH

Growth in activity takes account of:

- Predicted changes to the size, age and gender profile of the Trust's catchment population
- The need to continue to achieve waiting time targets
- Changes in levels of demand for specific specialist services, including the introduction of new services based on the Clinical Vision
- Per million population (pmp) targets for specific services, for example coronary revascularisation

- The transfer of acute respiratory inpatient services and cardiothoracic outpatient services from Addenbrooke's to Papworth in accordance with the Clinical Vision. In addition to this transfer, the repatriation of catheter laboratory activity which is currently undertaken at Addenbrooke's Hospital to Papworth has been agreed with NHS Cambridgeshire separately.

Population projections have been sourced from the latest Office for National Statistics (ONS) figures - the 2008 based sub-national population projections. The level of detail is:

- Metropolitan and non-metropolitan districts and unitary authorities
- 5-year age bands
- Gender

The population projections have been applied to the Trust's outturn activity in these levels of detail to ensure that their impact is accurately modelled.

In analysing the impact on the Trust of the pmp targets, catchment populations were weighted for age and circulatory morbidity to ensure an accurate comparison of current pmp activity levels against the targets. The pmp targets assumed are as follows:

- 487 CABGs pmp
- 1413 PTCAs pmp
- 3,990 cardiac catheterisations pmp
- 126 implantable defibrillators pmp

## 6.5 SERVICE TRANSFERS

It is expected that in future years, more district general hospitals will provide certain cardiac services, which would mean reductions in demand for these services at Papworth. The two services mainly affected are pacemakers and angioplasty. Adjustments for the transfer out of pacemakers vary by PCT and are based on commissioner intentions. The key transfer out for angioplasty is for Suffolk PCT in 2014/15.

In 2017/18 it is assumed that 90% of catheter work from NHS Cambridgeshire will transfer to Papworth Hospital following the hospital relocation.

## 6.6 PERFORMANCE AND EFFICIENCY

Various aspects of Trust performance have been analysed, specifically:

- Day case ratios
- Inpatient lengths of stay
- Did not attend rates
- Ratio of follow-up to first outpatient appointments

The area that has most potential for improvement is length of stay. Lengths of stay for elective and non-elective inpatients have been benchmarked, HRG-by-HRG, against a cardiothoracic services peer group of other providers. Where there is scope for improvement, internal targets have been set leading up to the move in 2017/18 and are monitored on a quarterly basis. The internal targets are higher than the 75th percentile HRG length of stay for the peer group to reflect performance efficiencies achievable in a new hospital.

## 6.7 THROUGHPUT AND UTILISATION OF CAPACITY

In order to derive future capacity requirements, assumptions relating to the following areas have been made:

- Number of available bed days per bed per year
- Inpatient bed occupancy
- Availability and utilisation of operating theatre and catheter laboratory sessions
- Average time in theatre / catheter laboratory per case

Inpatient beds are assumed to be available 365 days per year. Day case beds are assumed to be available 298 days per year.

Bed occupancy in future years has been calculated to ensure that there are sufficient beds of the appropriate type to accommodate peaks in demand for beds, and at the same time, outliers are kept to a minimum. Assumed occupancies are as follows:

- 90% for inpatient beds
- 70% for sleep study inpatient beds
- 75% for intensive care and high-dependency beds
- Throughput of 1.2 patients per bed per day for Day Case

The following assumptions have been made concerning scheduled theatre and catheter laboratory sessions:

- 4 hours per session
- 17 sessions per theatre per week
- 17 catheter laboratory sessions per week
- 48 weeks per year

**Figure 6-2 – Comparison of current and projected capacity and utilisation**

| Utilisation/Capacity Indicator | 2012/13 | ABC projection |
|---|---|---|
| No. available bed days per inpatient bed per year | 365 | 365 |
| No. available bed days per day case bed per year | 253 | 298 |
| Inpatient bed occupancy | 85% | 90% |
| Inpatient bed occupancy – Sleep study only | 74% | 70% |
| ICU and HDU bed occupancy | 80% | 75% |
| Theatre/cath lab sessions per week | 118 | 204 |

In compliance with guidance produced by the Audit Commission[1], the following theatre utilisation targets have been assumed:

- 7.5% session cancellation rate;
- 90% utilisation of scheduled time;
- 92% of utilised time actually spent operating.

90% utilisation accounts for the fact that operations will not always exactly fill a session and hence sessions will under-run on average. The 92% assumption accounts for 8% of utilised time being spent on clean-up and turnaround between cases. Average procedure times in minutes were specified by the Trust at OPCS4-level.

[1] 'Operating theatres – review of national findings', Audit Commission (2003)

## 6.8 ACTIVITY AND CAPACITY PROJECTIONS

### Figure 6-3 - Summary of Projected Inpatient and Day Case Activity at 2017/18

| Speciality | Admission Type | | Modelled Totals | Activity transferred from CUHFT | Grand Total Spells |
|---|---|---|---|---|---|
| | Day Case | Inpatient | | | |
| | | | 0 | | |
| Cardiology | 5,289 | 6,157 | 11,446 | | 11,446 |
| Cardiac Surgery | 47 | 3,143 | 3,190 | | 3,190 |
| Thoracic Surgery | 12 | 744 | 756 | | 756 |
| Respiratory Support and Sleep Centre | 446 | 8,270 | 8,716 | | 8,716 |
| Transplant / Ventricular Assist Devices | 81 | 786 | 867 | | 867 |
| Thoracic Medicine | 3,327 | 2,269 | 5,596 | | 5,596 |
| Respiratory – from CUHFT | | | | 1,519 | 1,519 |
| **Total** | **9,202** | **21,369** | **30,571** | **1,519** | **32,090** |

### Figure 6-4 - Summary of Projected Outpatient Activity at 2017/18

| Outpatient Attendances by Service | 2017/18 | CUHFT | Totals |
|---|---|---|---|
| Cardiology | 28,355 | 8,925 | 37,280 |
| Cardiac Surgery | 6,489 | | 6,489 |
| Thoracic Surgery | 1,229 | | 1,229 |
| Respiratory Support and Sleep Centre | 22,118 | 6,468 | 28,586 |
| Transplant / Ventricular Assist Devices | 3,719 | | 3,719 |
| Thoracic Medicine | 20,682 | | 20,682 |
| **Grand Total** | **82,592** | **15,393** | **97,985** |

## 6.9 CAPACITY REQUIREMENTS

The activity projections and performance assumptions summarised above result in the capacity requirements set out in figures 6-5 and 6-6 below. The total bed numbers available amount to 310.

**Figure 6-5 – Planned Bed Capacity by Specialty for 2017/18**

| Specialty | Day cases | Inpatient |
|---|---|---|
| Cardiac surgery | | 63 |
| Cardiology | 14 | 46 |
| Cardiothoracic transplantation | | 12 |
| Respiratory support and Sleep studies | | 37 |
| Thoracic medicine (excluding CF and including CUHFT transfers) | 10 | 54 |
| Cystic Fibrosis | | 15 |
| Thoracic surgery | | 13 |
| **Sub-Total** | **24** | **240** |
| **ICU / HDU / Recovery beds** | **-** | **46** |

The numbers of beds by specialty are notional. It is intended that in the new hospital bed pooling arrangements will apply to accommodate changes in clinical practice and to maximize efficiency.

The new hospital will not be at full capacity at opening apart from in the Day Ward. It will reach maximum capacity in terms of inpatient throughput in 2018/19. Within the Day Ward there are a number of options for increasing the throughput of patients including the extension of opening times, increased number of days opened (from 298) and the use of recliners rather than beds.

Despite the planned growth in inpatient activity there is virtually the same number of inpatient beds in the new Papworth Hospital (217) when 23 Addenbrooke's respiratory beds are excluded) as exist on the present site (223). This is due to the efficiency gains referred to above which can be generated by being in a purpose built state-of-the-art hospital.

All of the planned facilities in figure 6.6 are based on the projected demand for Papworth patients and will be fully utilised. Similar facilities at Addenbrooke's are fully utilised by their patients and will not therefore be available to Papworth patients. The sharing of clinical facilities with Addenbrooke's has been discussed in detail. As a result Papworth will obtain all of its pathology and CSSD requirements from Addenbrooke's.

### Figure 6-6 - Planned Treatment and Diagnostic Facilities

| | Facilities |
|---|---|
| Theatres | 5 |
| Catheter laboratories | 5 |
| Hybrid Theatre/Catheter laboratory | 2 |
| Consult / Examination | 30 |
| ECG | 3 |
| Exercise tolerance / Stress ECG | 2 |
| Ambulatory Monitor | 1 |
| Echo & Ultrasound | 4 |
| Tilt-testing | 1 |
| Bronchoscopy | 1 |
| Lung Function | 6 |
| Fluoroscopy | 1 |
| Plain film x-ray | 3 |
| CT & MRI | 4 |
| PET CT | 1 |
| Nuclear Scan | 1 |

# 7. RESEARCH AND DEVELOPMENT

## 7.1 INTRODUCTION

Papworth Hospital NHS Foundation Trust has a tripartite mission of research, education and clinical practice. As a regional and in some cases national provider of cardiothoracic services the Trust brings together large groups of patients with common conditions such as ischaemic heart disease and smaller but unique cohorts of patients with for example chronic thromboembolic disease for surgical assessment and people with ataxia telangiectasia. To justify the status of specialist provider the Trust has an obligation to offer the best possible care to its patients and with this comes the opportunity to advance this care through well structured research. The Trust is committed to building Papworth's international reputation for undertaking research and development (R&D) of the highest quality to reduce the burden of diseases of the heart and lung and improve the care of patients with these conditions.

R&D is a key driver for establishing the new Papworth Hospital and the co-located Heart and Lung Research Institute (HLRI) on the Cambridge Biomedical Campus. "Building for our Future," the 2005 Public Consultation on the Proposed Redevelopment of Papworth Hospital described how dedicated research infrastructure for Papworth on the Campus would:

"*Enhance our research capability, which will help us significantly improve the care we provide for patients in the future*."

With significant progress in the development of the project for the new Papworth Hospital on the Cambridge Biomedical Campus, this section updates the Trust's Research Vision.

## 7.2 OVERVIEW OF CURRENT R&D / RESEARCH CONTINUUM

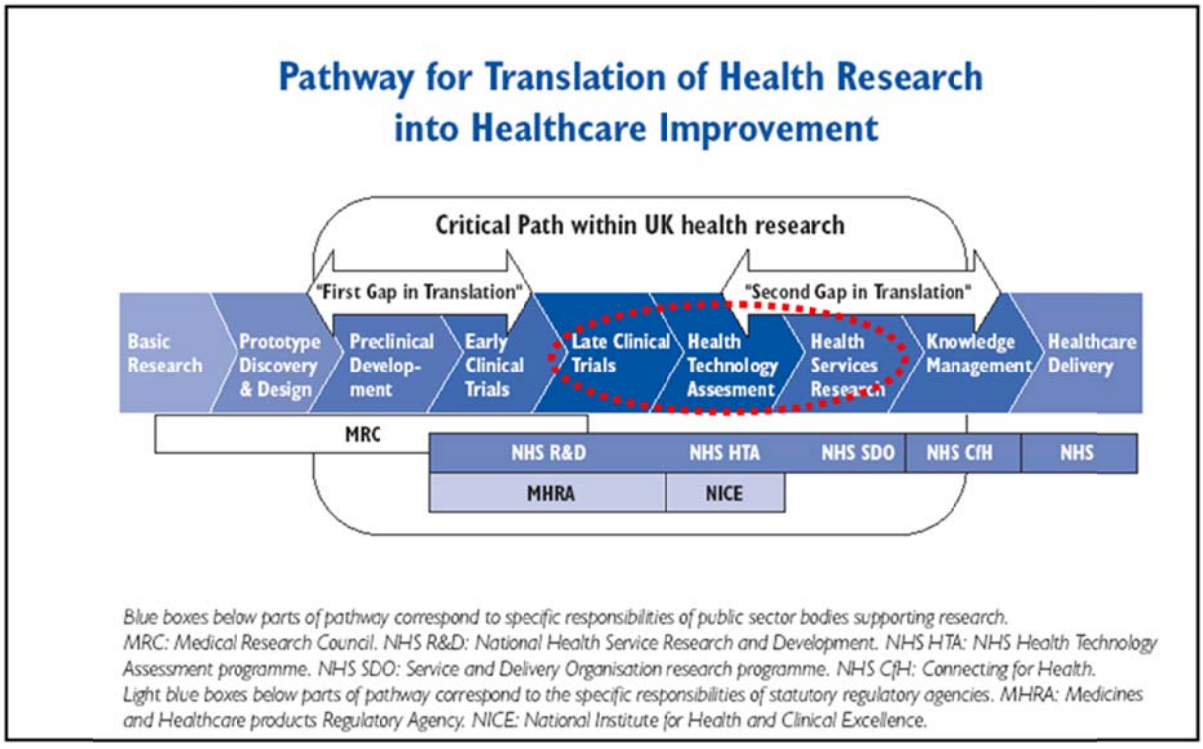
Research activity at Papworth is mainly embedded in the sub-specialty clinical groups. Most innovations and project ideas are generated in these clinical groups. On other occasions calls from major funders of research such as the National Institute for Health Research (NIHR) are identified by the core R&D team and disseminated to researchers in the Trust who are best able to reply. Up to 150 research projects, funded via external peer-reviewed grants from the NIHR, major charities, industry and by internal funds, are active at any one point in time. The Trust is Sponsor for most of these and around half are multi-centre studies. The Papworth Tissue and Blood Bank generates significant internal and external research. Each clinical directorate is represented on the R&D Directorate (RDD) Committee which oversees all R&D issues at the Trust. Papworth's main research collaborators have been the University of Cambridge School of Medicine Divisions of Cardiovascular Medicine and Respiratory Medicine. Key new collaborations are developing with staff for example from Cancer Research UK, and other University departments including Chemical Engineering and Biotechnology.

The Papworth R&D Unit performs a dual function in providing research management and governance along with a comprehensive research capacity development function via longstanding relationships with the Cambridge MRC Biostatistics Unit and the Brunel University Health Economics Research Group.

Figure 7-1 illustrates the 'bench to bedside' translational research continuum for health-related R&D. This continuum is assumed to be bidirectional (*i.e.* 'bench to bedside and back again') and not unidirectional as shown in the schematic.

The ellipse indicates the area of applied clinical research where Papworth has developed greatest expertise evidenced by the Trust's track-record in NIHR Health Technology Assessment (HTA). Although research active in other areas of the continuum most R&D undertaken at Papworth consists of patient-focused trials towards the bedside end of the pathway. In contrast, the Trust's partners in the Cambridge University Health Partners Academic Health Science Centre (CUHP AHSC) have different research strengths mostly towards the bench end of the Continuum.

**Figure 7-1: Translational Research Continuum**




Adapted from: *Sir David Cooksey. A review of UK health research funding; HMSO: 2006.*

Consideration of the continuum highlights the fundamental importance of the applied patient-focused R&D undertaken at Papworth. It can be seen that this type of research drives direct improvements in clinical care and/or the delivery of care. At a macro scale, the mission defined in Best Research for Best Health (the national health research strategy published in 2006) was to:

*"create a health system in which the NHS supports outstanding individuals, working in world-class facilities, conducting leading-edge research, focused upon the needs of patients and the public."*

## 7.3 RESEARCH VISION, STRATEGIC RESEARCH AIM AND OBJECTIVES

The Research Vision, reflecting the Trust's position as an NHS provider, is to deliver timely, high quality, clinical research to drive forward improvements in patient care at Papworth, across the NHS and beyond. In addition to Papworth centred clinical studies the R&D directorate will instil and maintain a research focused ethos in the hospital such that all aspects of care are scrutinised and only best evidenced practice is encouraged. The systems of care and of informatics underlying the hospital will facilitate and encourage

collaborative work across the continuum of research activity from bench to bedside. Through these activities as a core partner of CUHP, Papworth will make a major contribution to the Cambridge Biomedical Campus as a truly world-class centre for biomedical and clinical science.

### Research Vision: "Research Today for Patient Benefit Tomorrow"

The Research Vision requires the clinical translation of evidence along the translational research continuum. The successful clinical translation of clinically relevant evidence from pragmatic clinical research trials undertaken at Papworth is therefore the Trust's strategic research aim.

### Strategic Research Aim: "Clinical Translation of Clinical Research Evidence"

Four strategic research objectives will allow the Trust to deliver the Research Vision:

- Incentivising researchers in the clinical groups to engage with the highest quality of research. This will be achieved by transparent and equitable job planning where research is judged as valuable to the mission of the Trust as clinical work and supported accordingly

- Building capacity to allow research activity at a level commensurate with the Trust's vision, on a trajectory to optimally utilise the resource of the HLRI when it opens. This will require the appointment of new research leaders within some sub-specialities. Changing work practices and the optimal use of existing under utilised funds will support the increase in activity

- Raising the quality of research activity. Although there are a large number of projects active in Papworth the conversion rate to high impact publications with a major influence on clinical practice can be improved. This will be achieved by re-focusing approvals for studies through competitive tendering for internal funds and an increased drive for peer reviewed external funding

- Collaboration and alignment in particular with our partners in the University of Cambridge

The Board of Directors is considering additional funding over 3 years to support the strategic aims of the R&D Directorate and achieve the changes needed to ensure that research in Papworth is fit for the purpose of making best use of the opportunities offered by the new hospital and HLRI. It is intended that these funds will be set aside for an annual pump priming fund for consumables and other expenses, for research fellows who will be employed to develop systems such as databases or new protocols within a sub specialist area building for future research and for senior researcher time to allow new projects to be brought forward. These will allow clinical teams to appoint research active personnel on contracts with up to 50% of their time dedicated to research activity.

A major aim of the Papworth Five Year R&D Strategy is to increase the number of NIHR Portfolio studies at the Trust.[2] NIHR Portfolio studies are recognised as the 'building blocks'

[2] A NIHR Portfolio Study is a clinical trial or other well designed study, funded by the NIHR or a NIHR partner, awarded as a result of open competition with high-quality peer review and which is of clear value to the NHS.

of increased research capacity in the NHS R&D 'market' introduced by Best Research for Best Health. Each Clinical Research Group will be expected to manage at least one active NIHR Portfolio study. Activity will be performance managed by the RDD Committee who will report quarterly to the Papworth Board of Directors. Consistent with the Trust's Research Vision, the primary key performance indicator is the number of clinical trials that are successfully translated into clinical practice. Other performance indicators include the number of: new research disclosures; grant applications and successful grant applications; research approvals; active studies and participants recruited.

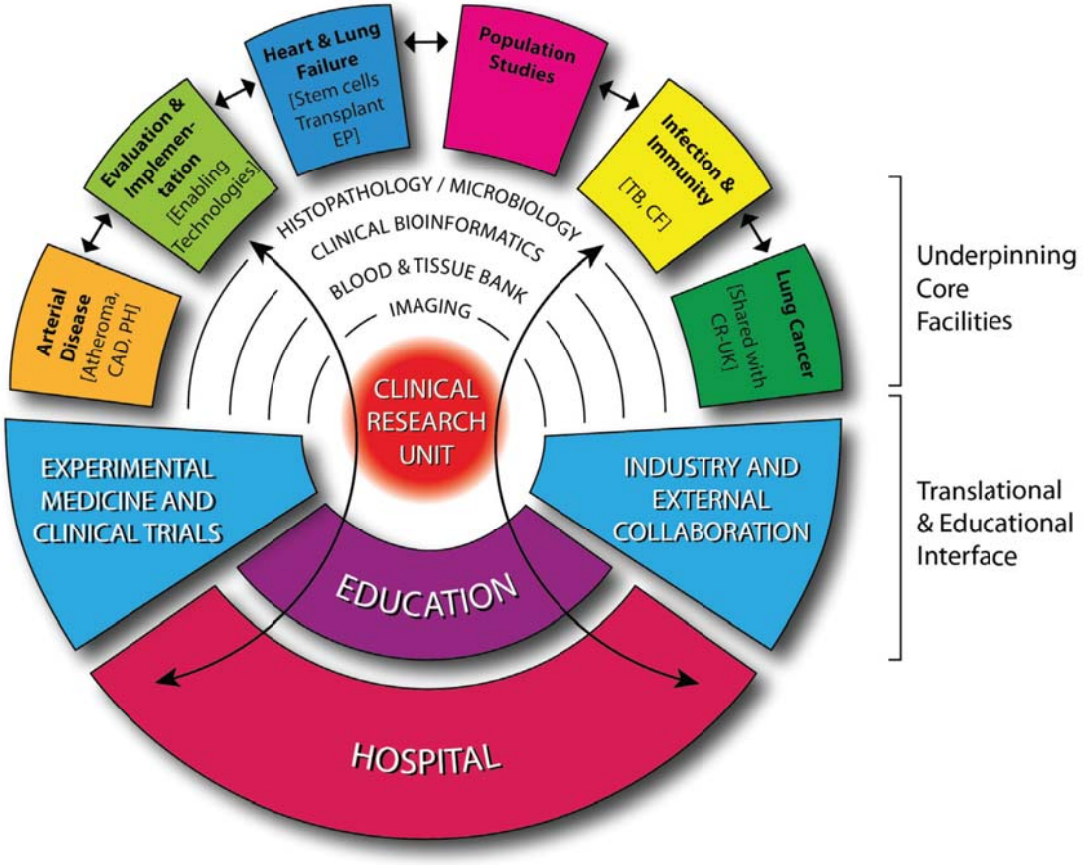
A review of the internal processes and structures of R&D is ongoing. The aim is to refocus the department to support researchers but facilitate independence and self sufficiency to allow growth in research without an obligatory parallel expansion of core R&D staff.

The strategy to build on collaboration and alignment will be enacted through a number of initiatives. Two new bodies have been incorporated and will be responsible for developing joint systems between Papworth and the University around the HLRI. These are the HLRI planning board chaired by a Papworth Non Executive Director with senior representation from both partners covering the scientific agenda, education, estates management and fund raising. Reporting to the planning board is the Shadow Scientific Steering Committee (SSSC), jointly chaired by research leaders from Papworth Hospital and the University (currently Papworth's Director of R&D and the BHF Professor of Cardiovascular Sciences). The SSSC is charged with defining the major research themes for the HLRI and is now working to define the management structure and the contents of the HLRI. This will culminate in a recruitment strategy for the next few years.

## 7.4 PAPWORTH HEART AND LUNG RESEARCH INSTITUTE

The Papworth HLRI will provide the best environment and facilities for high-quality cardiothoracic research and education on the Cambridge Biomedical Campus. The HLRI will be physically separate but co-located with new Papworth Hospital, the Clinical School, Cambridge University Hospitals NHS Foundation Trust and all other major Campus infrastructure. The Institute will be funded by Papworth and the University via capital grants from charitable organisations and a major fundraising appeal. It will facilitate the Research Vision for Papworth by establishing a facility that ensures clinical research is driven by clinical problems and unmet need and by ensuring that new discoveries can be translated rapidly into clinical benefits. Although the building will be made up of separate areas the Institute will function as one: an integrated cardiothoracic research unit for which the whole is greater than the sum of the parts. The building will include basic science laboratories, an inpatient Clinical Trials Unit, a Clinical Investigation and Procedures Unit, an Outpatient Research Clinic Area, Seminar Rooms and Lecture Theatre facilities and supporting office accommodation.

The concept diagram below outlines the proposal for six major research themes within the HLRI, all underpinned by core facilities including the tissue and blood bank, imaging and informatics. It shows how these are linked through the clinical research unit to both multidisciplinary education and to the hospital, for translation of research findings into patient care. This model provides an ideal platform for experimental medicine and clinical trial work, together with interactions with industrial partners.




## 7.5 CONCLUSION

The primary Research Vision for Papworth, reflecting the Trust's position as an NHS provider, involves driving forward improvements in patient care through high quality clinical research. Reflecting the Trust's position as a partner of CUHP, the Trust will make a major contribution to the overall success of CUHP and the Cambridge Biomedical Campus.

The Papworth HLRI is essential to achieving the Trust's Research Vision. The blueprint for the Institute involves not just the provision of dedicated additional R&D infrastructure but the creation of an environment that will facilitate synergistic research interaction and collaboration along the translational research continuum.

# 8. BIDDER COMPETITION AND SELECTION

## 8.1 INTRODUCTION

This section details the procurement strategy and the outcome at the interim and final bid stages.

## 8.2 PROCUREMENT PROCESS

The procurement process for the new Papworth Hospital has followed DH guidance and has used the standard form documentation, payment mechanism and output specifications throughout, adjusted to take into account scheme specific issues.

The scheme procurement process commenced in August 2010 and followed the Procurement Rules[3] for PFI projects via the Competitive Dialogue process. The Trust confirms that the project remains within the scope of the OJEU notice.

Completed PQQs were received from

- Apex Health
- Balfour Beatty
- The Bouygues Consortium
- Brookfield Health
- Sir Robert McAlpine
- Skanska

A two stage PQQ evaluation was undertaken in accordance with DH guidance. The first stage preliminary evaluation consisted of a number of financial hurdle questions that addressed the turnover of both construction and the facilities management provider, independent credit ratings, annual accounts qualifications, and worrying trends. This preliminary financial evaluation was undertaken by the Trust's financial advisers, KPMG.

The second stage detailed evaluation involved reviewing and scoring bidder responses to each PQQ question. In accordance with DH guidance, each score was weighted and the weighted scores were fed through into an overall quantitative assessment of the bidders' technical capability (in terms of experience, working practices and structure), capacity (in terms of expertise and availability), financial and economic standing.

Following the PQQ evaluation Apex Health, The Bouygues Consortium and Skanska were short listed to proceed to the Dialogue stage of the Competitive Dialogue process. The Trust's ITPD documents, including the Project Agreement, were issued to the 3 short listed

[3] Directive 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public services contracts. Implemented in the UK by the Public Contracts Regulations 2006 (SI 2006/5)

bidders and fortnightly meetings were held with each bidder to enable them to develop their commercial, financial, facilities management and design solutions.

Submission of interim bids at the end of June 2011 marked the end of Phase 1 of the Dialogue stage and following the evaluation of the interim submissions against the Trust's interim bid deliverables, The Bouygues Consortium and Skanska were selected to continue Dialogue (Phase 2) to the final bid stage.

Draft final bids were submitted on 25 November 2011 and were assessed by the Trust and its advisers to test and identify whether the solutions:

- meet the Trust's requirements
- meet the needs of the clinical services
- are robust
- are well defined
- are affordable

Final Bids were submitted by Bouygues and Skanska in October 2012. Due to delays in the approval process the bids were not evaluated until October / November 2013. The evaluation process followed the same format as the draft final bid process. The recommendation from the evaluation was the selection of Skanska as "minded to appoint Preferred Bidder" with the Preferred Bidder letter due to be signed in June 2014.

# 9. WORKFORCE PLANNING AND HUMAN RESOURCES ISSUES

## 9.1 WORKFORCE VISION AND CHALLENGES

Papworth's workforce vision is set out in the Workforce and Education Strategy outlining how the Trust will recruit, develop and retain the right people with the right attitude, behaviour and skills to deliver Papworth's values of the highest quality care, excellence and innovation.

The next 5 years will be a period of unprecedented change for the Trust:

- the commissioning of the new hospital and the period of transition leading to its opening will present significant challenges
- the financial climate in which the Trust is operating requires the delivery of substantial improvements in cost-effectiveness
- major reforms to the NHS will see radical changes in commissioning and increased competition

To meet these challenges will require the commitment of all who work at Papworth, high quality leadership across the organisation and development and adaptability both individually and organisationally. Continued focus on our culture, our people and how we work together is therefore fundamental to the Trust's success.

In summary, the workforce challenges the Trust faces are:

- to continue the implementation of its long-term strategic approach to integrated workforce planning to support service re-design through the development of new roles and workforce competence
- to embed the Performance Management Framework to support effective management of staff, service improvement and cultural change through Personal Governance and our Papworth People campaign
- to develop employment packages and practices to reward, retain and motivate staff to maintain operational delivery
- to contribute to the development of the Local Education and Training Boards and continued partnership with CUHP to ensure Papworth's future educational and workforce requirements are met
- to engage front line clinical staff in key decisions to maintain and improve patient services
- to maximise the flexibilities of Agenda for Change and tailored to the needs of individual staff
- to develop clinical leadership and support future talent to provide staff with rewarding and satisfying careers to enable retention and recruitment of staff
- to implement model employment practices in response to changing circumstances and external developments to promote a positive working

environment that is both supportive and developmental, irrespective of race, gender, disability, religion or religious belief, age and sexual orientation.

## 9.2 WORKFORCE OBJECTIVES

The Trust's 10 key workforce objectives are to:

- redesign its workforce based on improving the efficiency of the patient pathway and improving access for patients over a 24 hour period
- ensure the Trust has a flexible workforce with skills and roles that develop and change to meet the needs of patients
- invest in the design and implementation of educational and training packages to support a competency approach
- implement support mechanisms as a model employer by providing a career structure for staff
- use its freedom as a Foundation Trust to develop and invest in educational, research and development opportunities
- implement an effective staff engagement/communication strategy
- develop the capability and capacity of the workforce to drive and achieve effective organisational change
- maintain Papworth's culture and ethos
- promote Papworth as an employer of choice through effective strategies for the retention, recruitment and return of staff
- work in partnership with staff and key stakeholders to address concerns about the relocation to Cambridge

## 9.3 CURRENT WORKFORCE PROFILE

The workforce profile as at March 2013 was as follows:

**Figure 9-1- Staff numbers as at March 2013**

| Staff Group | WTE | Heads |
|---|---|---|
| Add Prof Scientific and Technical | 59.15 | 70 |
| Additional Clinical Services | 195.11 | 224 |
| Administrative and Clerical | 294.88 | 336 |
| Allied Health Professionals | 69.27 | 82 |
| Estates and Ancillary | 89.76 | 98 |
| Healthcare Scientists | 89.25 | 101 |
| Management | 49.41 | 54 |
| Medical | 168.63 | 173 |
| Nursing Registered | 532.58 | 602 |
| **Grand Total** | **1548.04** | **1740** |

Clinical staff comprise approximately 80% of the total workforce. In addition to the above staff numbers certain services are contracted out including, domestic and catering services, payroll and perfusion.

The following is a summary of the age profile of the Trust's workforce

- Approximately 9% of the workforce is under 25 and this, in part, recognises new initiatives to recruit and retain younger workers such as apprentices and newly qualified nurses.
- 55% of the workforce is aged between 25 and 44, and over 70% of registered nurses, allied health professionals and healthcare scientists fall within this age band.
- 23% of the workforce is aged between 45 and 55 and 12% aged over 55. The Trust has a proven track record in retaining experienced, competent staff with long service and they make a major contribution to ensuring the continued high standards of clinical care.

## 9.4 THE WORKFORCE IN THE NEW HOSPITAL

Clinical services will continue to be provided by hospital employed staff and as previously noted hard and soft FM services will be included in the PFI contract. Certain services will be shared with CUHFT including sterile services and pathology services.

Working practices will adapt to serve the new model of care through revised working hours in areas where the expectations of the public require a move towards providing services in the evenings and at weekends, for example outpatients and diagnostics. As well as meeting patient requirements, this will allow the Trust to maximise its use of equipment and hospital facilities and support the work/life balance of its staff.

Workforce projections take into account the need for additional staff where this is necessary to deliver increased activity.

## 9.5 STAFF ENGAGEMENT

From April 2007, all new staff have been informed prior to appointment and through their written statement of terms and conditions of employment of the hospital's intention to relocate. A reward and recognition strategy is being developed informed by the results of the local staff survey and will be tailored to recognise the differing needs of staff groups and individuals. The hospital continues to monitor the movement of staff and undertakes an annual review of where staff live.

### Staff Consultation and Involvement

The Trust uses a variety of ways to provide employees with the information they need about the Trust's activities, including information on clinical and financial performance. Meetings of the Senior Management Forum (SMF) take place regularly throughout the year. Staff receive information through the Trust's Intranet site, a monthly staff newsletter, a weekly electronic bulletin and communication via line management arrangements.

All clinical guidelines, policies, procedures, protocols and other relevant information can be found on the Trust's intranet. Staff are also involved in contributing to business planning through the Directorate structure. There are seven Staff Governors elected to the Trust's Board of Governors to help ensure that the staff voice is heard.

### Partnership Working

The Joint Staff Consultative Committee (JSC) is the formal management/staff interface. The Trust has worked with staff side to respond to the results of the annual national and local staff surveys including the development of a staff survey action plan. The Trust is working in partnership ensuring the staff engagement strategy is implemented to improve the retention and health and wellbeing of staff. Partnership working remains a key priority for the Trust to enable acceleration of productivity and efficiency gains in a challenging financial situation. Pro-active engagement of staff side to review local pay reforms is on going.

Both bidders have confirmed their recognition of trade unions representing the transferring staff.

## 9.6 TRANSFER OF STAFF

The relocation to Cambridge is considered as "suitable alternative employment" and the majority of Trust staff will transfer to the new hospital. Provision has been made to support staff through the transition process and a reward and recognition strategy is being developed to support the process whilst on the existing site and post transfer.

Following consultation with the DH PFU, it has been agreed that as the majority of soft FM services are outsourced already, retention of employment (ROE) will not apply to the PFI

project and all hospital employees who transfer to another employer will be covered by TUPE regulations. Hard FM staff will transfer to the PFI provider from a date to be agreed as will those soft FM staff currently employed by the Trust and those currently contracted out.

Skanska has provided full details of their proposals for the transfer and transition process in relation to the transfer of Trust staff and contracted out staff under TUPE. A strategy and detailed timetable for staff transfers will be agreed at the preferred bidder stage. Skanska have submitted full details of their proposals for the recruitment and retention of new staff leading up to and beyond the opening of the new hospital.

## 9.7 PENSIONS

The Skanska bid complies with the requirements of the Cabinet Office Statement – "Staff Transfers in the Public Sector" and the HM Treasury Guidance – "A Fair Deal for Staff Pensions". All transferring NHS staff will be provided with broadly comparable pensions. The bidders have been asked to provide full details as to how the obligations relating to transferring employees will be discharged (for both initial and subsequent transfers). All transferring employees who are members of or who are entitled to become members of the NHS Pension Scheme will be offered membership of a pension scheme which has been certified by the Government Actuary's Department (GAD) as being broadly comparable to the NHS Pension Scheme by means of a bulk transfer on a day for day past service credit basis plus enhanced redundancy terms on premature retirement at age 50 or over as currently available under the NHS Pension Scheme.

Skanska have submitted:

- copies of their current GAD certification
- a written undertaking that all eligible employees will be offered enhanced early retirement benefits as are currently available under the NHS Pension Scheme and relevant supporting regulations
- a written undertaking that all eligible employees will have the option to transfer any accrued benefits from the NHS Pension Scheme to any new broadly comparable scheme by means of a bulk transfer which will provide day by day (or equivalent) service credit in the new scheme
- a written undertaking that on expiry or termination of the scheme or on subcontracting which is in consequence of the current new Papworth Hospital scheme, the eligible employees will be given the option to move any accrued benefit in the broadly comparable scheme to the new employer's scheme by means of a bulk transfer on terms which are no less favourable than the original bulk transfer from the NHS Pension Scheme.

## 9.8 EDUCATION VISION AND OBJECTIVES

The hospital will continue its successful track record of developing new and enhanced roles based on a competency approach and will continue to invest in its workforce, specifically in education and development to improve skills, knowledge, experience and efficiency.

The Clinical Vision for the new hospital identified the learning and development benefits from greater sharing and partnership working with CUHFT. Both CUHFT and Papworth Hospital will gain substantially from the transferability of skills and knowledge across the clinical

specialties and professions. The HLRI will provide an excellent environment for training clinical and other staff.

The development of the workforce is multi-disciplinary with all staff playing their part to support the organisation's success. Whilst the emphasis of the strategy focuses on clinical development and leadership, non-clinical staff have a significant contribution to make to ensure that clinicians can develop capacity and capability to develop new ways of working to benefit the quality of patient services provided and improve the effectiveness and efficiency of the Trust.

In line with service improvement projects identified across the organisation, a number of new ways of working are already in place or undergoing a trial. In order to meet the wide range of targets, both external from professional/validating/legislative bodies and also the internal drive for efficiency and effectiveness, new roles/ways of working will be created to support organisational change. Such change requires teams from across organisational boundaries to communicate effectively to determine agreed approaches to the merging of professions to deliver timely and effective care.

# 10. PROJECT MANAGEMENT AND TIMETABLE

## 10.1 PROJECT STRUCTURE

As outlined in Section 1.8, the Trust has an agreed project structure to supervise the procurement and the development of the ABC and CBC.

The Board of Directors of Papworth Hospital NHSFT has ultimate responsibility for the successful delivery of the project with the project team retaining day to day responsibility for project management. The management of the project is formally under the control of the Board of Directors of the Trust. The Trust's Chief Executive, Stephen Bridge, as the Project Sponsor and Senior Responsible Officer, acts on behalf of the Trust. The Project Director reports directly to the Chief Executive.

A Project Management Group reports to the Trust Board of Directors and includes senior clinical and management representatives.

The Project Director has overall responsibility for the planning and delivery of all stages of the project and manages the project team which comprises in-house staff and external advisers. The structure and composition of the Trust's project team is shown below;

| **Project Director (1 WTE)<br>Deputy Project Director (1 WTE)** | | |
|---|---|---|
| **Internal** | **External** | |
| **Project Office** | **Commercial** | **Technical** |
| General project manager (1 WTE)<br><br>Clinical project manager (1 WTE)<br><br>Technical project manager (1 WTE)<br><br>Project accountant (0.8 WTE)<br><br>Project administrator (1 WTE) | Legal adviser<br>Bevan Brittan<br><br>Financial adviser<br>KPMG<br><br>Insurance adviser<br>Marsh | Architect and healthcare planning advisers<br>Devereux / SHP<br><br>Lead Technical Adviser/Technical Commercial Adviser<br>WSP<br><br>Planning adviser<br>Savills |

## 10.2 KEY RESPONSIBILITIES

Key responsibilities of the Project Management Group, as set out in its Terms of Reference, are as follows:

- Ensuring that robust processes are followed (e.g. evaluation of fit with the Trust's overall strategy, use of appropriate independent professional advisers)
- Monitoring compliance with DH policies and procedures

- Monitoring progress and performance and ensuring that, where appropriate, alternative strategies are developed to maintain key targets, costs and dates
- Monitoring overall progress against plan
- Managing all risks associated with the new Papworth Hospital project
- Overseeing and ensuring appropriate clinical engagement at each specific stage of the project
- Communication and consultation with stakeholders
- Approving the ABC and CBC
- Approving key decisions in the procurement process, e.g. short-listing of bidders at PQQ and interim bid stages, selection of preferred bidder, any major change to the scope of the project and variations

### 10.3 PROCUREMENT GROUPS

Throughout the procurement process the project team and advisers have been supported by Trust senior managers and clinicians who have joined project team members and advisers in a number of procurement groups that have met regularly with bidders to clarify the Trust's requirements. Relevant groups will continue to meet throughout the construction phase to ensure there is a continuity of approach and that the range of skills and experience required to take the project to financial close and into construction are available.

Membership of these groups is set out below;

| | Design | Equipment | Technical | Commercial | Financial | FM | Art |
|---|---|---|---|---|---|---|---|
| Medical Director | ✓ | | | | | | |
| Director of Nursing | ✓ | | | | | | ✓ |
| Director of Operations | ✓ | ✓ | | | | ✓ | |
| Deputy Director of Operations | ✓ | | ✓ | | | ✓ | |
| Director of Finance | | | | | ✓ | | |
| Clinical Directors (3) | ✓ | | | | | | |
| Director of HR | | | | | | ✓ | |
| Project Director | ✓ | | | ✓ | ✓ | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Deputy Project Director | | | | ✓ | | ✓ | ✓ |
| Clinical Project Manager | ✓ | | | | | | |
| Project Manager | ✓ | ✓ | | | | ✓ | |
| Technical Project Manager | ✓ | | ✓ | | | | |
| Project Accountant | | ✓ | | | ✓ | ✓ | |
| Advisers | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |

In addition there has been substantial involvement of clinical and other staff from throughout the Trust in design development of individual departments.

Trust senior managers who will ultimately be responsible for contract monitoring have been involved throughout Dialogue in the development of the clinical and technical design solution, the hard and soft FM service proposals and in discussions regarding the application of the payment mechanism to unavailability events and performance failures.

## 10.4 PROJECT TEAM FUNDING

Funding was received from the East of England SHA in 2006 and 2008 totalling £5.9m towards the cost of the new hospital project. The amount received was based upon the capital value (including VAT) of the scheme in 2006. The funding received was intended to cover the cost of the project team and external advisers.

A three year extension in the project timelines was caused by planning permission and other delays and as a result the project funding has been used up in 2013/14. The Trust is aware of this position and has budgeted accordingly for the expected costs up to and including 2017/18.

# 11. RISK MANAGEMENT

## 11.1 RISK MANAGEMENT REGISTER

A risk register is in place for the project. The register includes the risk, the probability and impact of each risk on the project together with its proximity. Each risk has an associated mitigation strategy and a risk owner responsible for managing the risk and escalating it to the Project Management Group or Board of Directors if required.

The risk register is maintained by the Deputy Project Director but risks are the responsibility of the allocated risk owner. All members of the project team and Project Management Group are responsible for risk identification and mitigation. Any identified risks are reported to the Deputy Project Director for entry onto the risk register.

Risks are reported to the Project Management Group and the Trust's Board of Directors and the key project risks are included in the Trust's Board Assurance Framework.

## 11.2 RISK ALLOCATION BETWEEN THE TRUST AND PROJECT CO

The Trust has prepared a Risk Allocation Matrix aligned to the draft contract documentation in accordance with the standard Department of Health guidance. The Risk Allocation Matrix seeks to determine where the management for key risks should rest between the Trust and Project Co in terms of who is best placed to manage the risk.

# 12. BENEFITS REALISATION AND POST PROJECT EVALUATION

## 12.1 POST PROJECT EVALUATION INTRODUCTION

It is recognised that post-project evaluation ("PPE") is a mandatory requirement for a capital investment project of this scale. The Trust is committed to ensuring that a thorough and robust PPE is undertaken at key stages in the process to ensure that positive lessons can be learnt from the project.

## 12.2 STAGES OF POST PROJECT EVALUATION

NHS guidance on PPE[4] identifies four key stages at which evaluation must take place. These are:

Stage 1: Plan and cost the scope of the PPE work at the project appraisal stage. This is detailed in the business case.

Stage 2: Monitor the progress of the project and the measurement indicators set out in the Benefits Realisation Plan framework. This includes setting up the base line assessment and evaluating the project outputs upon completion and implementation.

Stage 3: Review the outcomes of the project as it moves into the operational phase, usually six to twelve months after the facility has been commissioned. This will include the analysis of any significant changes relative to the original assumptions and the ongoing recording and monitoring of the measurement indicators.

Stage 4: Follow post-project evaluation to assess longer-term service outcomes two years after the facility has been commissioned.

This business case sets out Stage 1 of the PPE process and creates a framework within which the evaluation will take place. The detailed evaluation plan is set out below.

## 12.3 BENEFITS REALISATION PLAN

A Benefits Realisation Plan is used to track realisation of benefits across the project.

OGC guidance states:

- The Benefits Realisation Plan should clearly show what will happen, where and when the benefits occur and who will be responsible for their delivery. The plan for benefits needs to be integrated into or co-ordinated with the programme plan and should be very clear about handover and responsibilities for ongoing operations in the changed state (where the benefits will actually accrue)

- There should also be a tracking process which monitors achievement of benefits against expectations and targets. The tracking process must be capable of tracking both ‘hard’ (e.g. cost, headcount) and ‘soft’ (e.g. image) benefits and operates alongside the changed operation

[4] *Good Practice Guide: Learning Lessons from Post-Project Evaluation*, January 2002

- In addition, there should be evidence of realisation of actual benefits (through the tracking process). The benefits claimed should be defensible against third party scrutiny

The Benefits Realisation Plan will be reviewed as part of the framework for completing PPE.

- The Benefits Realisation Plan for this project identifies the benefits, measures and monitoring arrangements, date for realisation of the benefit and benefit owner. Its integration with the programme is set out in Section 12.6 (Timescales) below.

- The Benefits Realisation Plan will be underpinned by an assessment of the base line conditions and performance of the current facilities and services. Those that are not currently available and included in this final ABC will need to be gathered in advance of the evaluation of the Benefits Realisation Plan.

## 12.4 THE EVALUATION TEAM

A PPE Steering Group, chaired by the Director of Operations, will be established under the Project Management Group. The role of the Director of Operations will be to manage and coordinate the PPE process and report the findings to the Project Management Group and the Board of Directors. The Director of Operations will delegate the responsibility for the collection and analysis of the various data sets within the framework measurement indicators to appropriate members of staff.

### PPE Steering Group

- Chaired by the Director of Operations or a nominated officer, the Steering Group will comprise staff involved in the development of the project, staff involved in the operational phase of the project and representatives of major stakeholders. Patient/public involvement will be an important part of the evaluation.

- The “Benefit Owner” as referred to in the Benefits Realisation Plan will be responsible for ensuring that agreed actions arising from the evaluation are followed up.

The Board of Directors is responsible for approving the evaluation outcomes and follow-up action report.

The approved action report will be disseminated to the Project Management Group, the Management Executive and other relevant stakeholders. A 'lessons learned' report will also be developed and disseminated across the Trust and relevant stakeholders.

## 12.5 RESOURCES

The PPE will be resourced from within the existing corporate structure of the Trust.

## 12.6 TIMESCALES

The timescales for the PPE are set out in the table below:

| Stage | Timescale | Scope |
|---|---|---|
| Handover evaluation | At handover. | Compliance with contract (and Benefits Realisation Plan where relevant). |
| Initial Evaluation | 1 year after hospital opening. | All project objectives – Benefits Realisation Plan. |
| Follow-up evaluation of service outcomes | 2 years after hospital opening. | All project objectives – Benefits Realisation Plan. |
| Ongoing | Trust services – every 3 years after follow-up evaluation.<br><br>Contractor services – as set out in the contract. | Project objectives (Benefits Realisation Plan).<br><br>Building running costs, maintenance costs, energy consumption and building effectiveness. |