Royal Brompton & Harefield NHS
NHS Foundation Trust

Strategic Plan for 2014-19

Royal Brompton & Harefield NHS Foundation Trust

1.1 Strategic Plan for y/e 31 March 2015 to 2019

This document has been completed by (and Monitor queries to be directed to):

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Date	**June 30th 2014**

The attached Strategic Plan is intended to reflect the Trust's business plan over the next five years. Information included herein should accurately reflect the strategic and operational plans agreed by the Trust Board.

In signing below, the Trust is confirming that:

- **The Strategic Plan is an accurate reflection of the current shared vision and strategy of the Trust Board having had regard to the views of the Council of Governors;**
- **The Strategic Plan has been subject to at least the same level of Trust Board scrutiny as any of the Trust's other internal business and strategy plans;**
- **The Strategic Plan is consistent with the Trust's internal operational plans and provides a comprehensive overview of all key factors relevant to the delivery of these plans;**
- **All plans discussed and any numbers quoted in the Strategic Plan directly relate to the Trust's financial template submission; and**
- **The 'declaration of sustainability' is true to the best of its knowledge.**

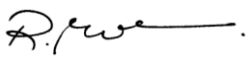
Approved on behalf of the Board of Directors by:

Name *(Chair)*	**Sir Robert Finch**

Signature 

Approved on behalf of the Board of Directors by:

Name *(Chief Executive)*	**Robert J. Bell**

Signature 

Approved on behalf of the Board of Directors by:

Name *(Finance Director)*	**Richard O'D. Paterson**

Signature 

1.2 Declaration of sustainability

The board declares that, on the basis of the plans as set out in this document, the Trust will be financially, operationally and clinically sustainable according to current regulatory standards in one, three and five years time.	***Confirmed***

1.3 Executive summary of the 2014-19 Strategic Plan

Introduction

- The accompanying detailed 2014-19 Strategic Plan (the 'Plan') sets out the Trust's strategy for the next five years, together with financial projections covering the same period (the 'Projections'). The first two years of the Projections, covering 2014/15 and 2015/16, have previously been submitted as part of the Trust's two year operational plan: the cash flow projection for 2015/16 (but not the reported surplus for that year) has been adjusted from that included in the earlier submission.
- The Plan reflects both the Trust's strategic intentions and its view of the 'most likely' of a number of possible scenarios and, as such, represents a worthwhile and credible exercise in forward planning. Both the Plan and the Projections, however, should be viewed with caution: irrespective of the outcome of the 2015 General Election and any changes to Government policy resulting from it, economic considerations may lead to wholesale changes to the public health sector which would inevitably affect the intentions and finances of every provider organisation.
- The fundamental assumption underlying the Plan and Projections is that the current macro-regime of NHS tariff deflation coupled with cost inflation and additional cost pressures (seven day working, Better Care Fund, etc.) will persevere throughout the five year period: whether the health sector can accommodate this continuing financial pressure without substantial changes appears today to be an open question. This underlying assumption is therefore vulnerable to the course of future events.
- The five year sustainability declaration by the Trust Board (section 1.2 of the Plan) should be viewed with the same caution.

Trust mission

- In an environment where clinical and financial sustainability may sometimes appear to be in competition with one another, the Trust's guiding principle has always been that clinical sustainability and patient welfare are paramount, even at the risk of compromising financial performance.
- This philosophy is reflected in the mission statement set out in the Trust's 2014/15 Annual Report to be 'the UK's leading specialist centre for heart and lung disease'. This is underpinned by a three-pronged approach:
    - Continual development of leading edge services through clinical refinement and research
    - Effective and efficient treatment through core specialist services
    - Managing the transition of more routine services to other centres to release capacity for new interventions
- No change to the Trust's mission is envisaged by the Plan.

Five year strategy alternatives

- The Trust faces a stark choice between two alternatives:
    - Either continuing essentially as before and, with the worsening macro-economic backdrop, seeing its financial performance fall away. Although the Trust will strive to maintain standards of clinical performance and patient care, cutbacks in investment in equipment, clinicians and research would be inevitable. This would lead to a

progressive deterioration in the Trust's facilities, clinical prowess and, ultimately, its reputation and standing as a leading specialist centre. That deterioration would, in turn, magnify the pressures on financial performance.

- Or seeing the current and likely medium-term environment as a call to invest and expand, in other words to adopt a transformational agenda.

- The Board is unanimous in its belief that the transformational approach is the right one.

Transformation – justification and key initiatives

- There is substantial untapped demand for the Trust's services for both NHS and private patient work. However, we are operating at or close to capacity on both our hospital sites and cannot today take full advantage of this.
- The Plan sets out a number of examples of where we could, with additional capacity, generate further NHS revenues, relying on our specialist resources, skills and reputation. To respond to this demand, however, we need more wards for daycase, general and critical care, more diagnostic facilities, more efficient premises and more high calibre doctors and staff. There are also opportunities to expand both the breadth and the depth of our services which can only be seized with additional capacity.
- On the private patient side our catchment area is currently restricted: we are therefore planning to extend our London footprint by opening premises in the Harley Street area. These will house both outpatient and diagnostic services: in time we also intend to grow our PP inpatient services which many of these new patients will require. Private patient services currently represent just over 10% of our total clinical revenues: we believe we can grow this proportion substantially and at prices and margins considerably higher than equivalent NHS tariffs.

Transformation – financial implications

- The investment outlined above needs funding which will come from a number of sources:
  - The Trust is blessed with an investment (i.e. non-clinical) property portfolio: this it intends to dispose of with planning permissions and to reinvest the proceeds in the Royal Brompton Hospital. This will not only increase net clinical capacity but, as importantly, will improve patient welfare. To meet local planning requirements, however, these proceeds may not be invested in the Trust's other hospital at Harefield.
  - The Trust has recently, and for the first time, arranged funding from the Independent Trust Financing Facility (ITFF) to invest in additional and improved facilities at Harefield. The first phase of these works will commence in 2014/15 and the second phase be executed over the following two financial years with a view to being fully on stream from the start of 2018/19.
  - We are also negotiating with a commercial lending institution to fund the planned new PP facilities in the Harley Street area. ITFF funding is not available for non-NHS initiatives.
  - The Trust's linked Charity also owns a London property portfolio and has signalled that it will sell part of this and gift the proceeds to the Trust for the Royal Brompton redevelopment.
- At the end of the five year Plan period the Trust is projected to have significant long-term borrowings (£85m) but also total cash resources in the order of £70m, most of which represents funds generated from property disposals by Trust and Charity awaiting reinvestment in new Royal Brompton Hospital facilities. The additional, more efficient capacity

at both sites will enable substantially higher patient throughput, which in turn will facilitate the servicing of the debt burden and support the Trust's financial results. The impact of these efficiencies will become evident only in year 5 of the Plan period given the lead times involved. The projected results for that year disclose a reduced deficit (£3m) as compared to that for 2017/18 (£4m) as the additional capacity at Harefield will by then be fully operational.

- The Projections disclose modest (c.1% of revenues) deficits in each of the years 3, 4 and 5 of the Plan, following a near break-even result for year 2 (FY15/16). These would be the first deficits that the Trust has reported since its formation as a single NHS Trust in 1998.
- Notwithstanding these deficits, the Projections indicate that the Trust will maintain a Continuity of Service Rating of at least 3 over the five year period.

Transformation – risks

- The key risks to the Plan and Projections – beyond those system risks over which the Trust has no influence or control - are laid out below, together with their mitigations:
    - The possibility of tighter specialist commissioning budgets: c.85% of the Trust's NHS work is commissioned by NHS England. The Trust considers that the untapped and growing demand for our services in the key areas for the UK's growing and ageing population of cardiac and respiratory disease will mitigate this risk.
    - Going forward there will be more clinical standards guiding specialised commissioning. While derogations relating to services in the short-term are negotiable, in the longer-term we will be investing to meet the underlying standards.
    - The constraints of operating as specialist hospitals: the Trust has in place partnering arrangements for each of our hospitals with local DGHs (district general hospitals). These partnerships are being reinforced and extended.
    - Competition in certain service areas: the planned investments in both hospitals will strengthen the Trust's competitive position, as will our policy of recruiting high calibre clinicians internationally as well as nationally.
    - The loss of Project Diamond funding: for many years the Department of Health / NHS England has contributed this funding to the so-called Project Diamond Trusts to recognise that standard NHS tariffs do not adequately compensate specialist Trusts (or specialist services within other Trusts) for complex interventions. For the Trust, relative to its size this funding is particularly significant, at some £9m p.a (c2.5% of current turnover). It was understood for many years that this funding would be incorporated into tariff from 2015/16. However, it now appears that the earliest this could be achieved is 2016/17, as reflected in the Projections. The timing of this change is in the hands of Monitor and NHS England.

2. Market analysis and context

2.1. The demographic context

2.1.1. The healthcare needs of the UK population are changing. Life expectancy has risen by almost one fifth since the inception of the NHS in 1948[1]. Half of those currently aged over 60 have a chronic illness[2] and this proportion will rise as the population of those aged 85 or older doubles in the next 20 years[3]. For many, advancing age is associated with increased frailty and dependency. Consultants today manage patients that are not only older, but have more co-morbidities and a far greater complexity of illness than those they encountered when they qualified.

2.1.2. Advances in medical science and technology have led to a huge increase in the scope, accuracy and range of diagnostic services, and of interventional procedures. In younger patients with an acute condition confined to a single organ system, the opportunity to intervene effectively and safely has never been greater. Advances in gene sequencing, for example, means that new services are emerging likely to raise further the expectations of the population[4]. By contrast, for older patients with multiple co-morbidities who make up a growing proportion of emergency medical admissions, the challenge in providing early, expert, holistic healthcare is daunting. The temptation to conduct complex interventions with no overall gain in quality of life is significant and is frequently demanded by patients and their carers.

2.1.3. Frail, elderly patients with severe systemic illnesses often complicated by cognitive impairment can become ensnared in hospital-based pathways, when the problem that needs to be addressed is ensuring their personal needs in the community are met; applying complex interventions may not prove effective. Such patients should and must benefit from service integration, with acute illness either prevented or anticipated and managed by escalating care in the community rather that defaulting to hospital admission.

2.2. The UK healthcare system

2.2.1. There have been several recent failures by NHS health and social care providers to give patients, their families or carers access to the best possible standards of healthcare and on a 7 day per week basis. Many of these failures have been thoroughly documented by the reports of the Francis Enquiry (2010, 2013), the Care Quality Commission (2011, 2013), and Keogh (2013), off the back of which wholesale cultural change has been demanded by the Berwick report on patient safety (2013). There are some areas of performance where the quality of services provided in the UK is clearly ahead of that in peer industrialised nations – eg avoidable hospital admissions due to diabetes run at 70 per 100,000 vs an OECD average of 165[5]: unadjusted 30-day mortality after paediatric cardiac surgery in the UK between 2009 and 2012 was 1.9%, compared with 3.6% in the US during 2005-10[6]; and median waiting times for knee

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[1] Department of Health, *Shaping the Future of Care Together*, Cm 7673, 2009, p 32

[2] Department of Health (2012): "Long-term conditions compendium of Information": 3rd edition

[3] National population projections, 2008-based, Office for National Statistics

4 Caulfield T, Evans J, McGuire A, McCabe C, Bubela T, et al. (November 2013) *Reflections on the Cost of "Low-Cost" Whole Genome Sequencing: Framing the Health Policy Debate*. PLoS Biol 11

[5] OECD "*Health at a Glance*" 2013

[6] Central Cardiac Audit Database; Welke et al, Circulation 2012 Abstract, "Surgeon Volume is Associated with Operative Mortality After Congenital Cardiac Surgery"

replacement surgery in the UK (87 days) compare favourably with Canada (101 days) and Australia (184 days).[7] Nevertheless the care delivered by the UK healthcare system is typified by a lack of integration between providers, through which component NHS services can be linked without losing sight of the need for an identifiable trained clinician taking responsibility for the clinical care being delivered both in the community and in hospitals[8].

2.2.2. The costs of providing a national healthcare system are almost certain to keep increasing. The highest projections of the Office for Budget Responsibility in 2012 forecast that, based on currently visible demographic trends, UK health and social care costs will rise from 7.9% of GDP in 2016/17 to 19.1% in 2061. To afford this level of spending while keeping government borrowing at a constant level would mean other Government spending would have to reduce by one-third.[9] The ability of providers in future to offset this growth in costs through productivity improvements may be limited – productivity gains across the whole NHS during1995-2010 averaged just below zero per year[10], as opposed to long-term pay cost growth of 2%[11].

2.2.3. Of more immediacy is the pressure faced by providers and commissioners alike to continue to deliver financial surpluses. As of January this year, the finance directors of more than 20% of provider Trusts and 13% of Clinical Commissioning Groups (CCGs) predicted that their Trust / CCG would record a deficit in FY13/14[12]. At an aggregate provider level, a combined FY12/13 surplus of £591m has been followed by a FY13/14 total deficit of £108m[13]. It is not surprising too that, off the back of both these financial pressures and the reports into failings of care by provider Trusts (as per 2.2.1 above), these finance directors identified the morale of their staff as their biggest worry, ahead even of compliance with A&E and 18 week wait targets.

2.3. Our Trust's position within the health economy & challenges therein

2.3.1. Our Trust is a centre that provides a comprehensive range of tertiary and quaternary cardiac and respiratory services to treat paediatric and adult patients across a number of disease cohorts, the majority of whom are referred to our two hospitals from cardiac and respiratory clinicians based in District General Hospitals (DGHs) located not just in North West London, the North West Home Counties, London and the South-East of England, but also from many other regions of the UK. We therefore participate in a number of different LHEs (local health economies). Included within this service portfolio are nationally commissioned services such as our adult Cardiothoracic Transplantation, Pulmonary Hypertension and ECMO (extra-corporeal membrane oxygenation) programmes, and our paediatric Primary Ciliary Dyskinesia and respiratory ECMO services.

2.3.2. The Trust's management structure was modified in 2008/9 to incorporate a four Division (Harefield Heart, Royal Brompton Heart, Lung, Child Health) / three Directorate (Anaesthesia & Critical Care on each site, Laboratory Services) system. This has

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[7] OECD "*Health at a Glance*" 2013

[8] Ham C et al (2011) "*Where next for the NHS reforms: the case for integrated care"*. London: The King's Fund.

[9] "*Spending on health and social care over the next 50 years*": John Appleby, The King's Fund, 2013, p45

[10] "*Spending on health and social care over the next 50 years*": John Appleby, The King's Fund, 2013, p47

[11] "*A decade of austerity*?" Report by the Nuffield Trust, December 2012, p26

[12] "*How is the health and social care system performing?"* Quarterly monitoring report, The King's Fund, January 2014

[13] Analysis by Foundation Trust Network, policy update, June 2014

proved variably effective in focusing the attention of clinicians upon specific disease groupings (eg Care Group for Structural Heart Disease) rather than professional skills (eg Surgical Directorate), but has in all arenas facilitated the introduction of multi disciplinary team meetings as the clinical and management forums within which clinical decision making occurs, and the introduction of service line reporting. The Divisions have also been aligned with the broader research and development (specifically the NIHR-funded Biomedical Research Units) and educational and training strategies of the Trust.

2.3.3. Changing population demographics have meant that patients who present with single, acute heart and lung-based illnesses at our hospitals are becoming less common[14]. Increased and early specialization amongst medical staff in training, a national focus upon improving outcomes in specific diseases (eg stroke, heart attacks) and process-driven targets (eg to reduce waiting times) have all resulted in coordinated management of patients with multiple co-morbidities becoming increasingly difficult to deliver. Additionally, we have continued to see an increase in the number of acute episodes of illness in our cohorts of patients with long-term chronic conditions such as heart failure, congenital heart disease, cystic fibrosis, asthma and lung cancer[15]. Although these episodes are initially managed via the A&E at patients' local DGHs, more and more patients are referred back to our hospitals for management of this acute episode. There has also been a similar increase in the number of patients returning to our hospitals to receive symptom control or palliative care after a previous intervention or therapy.

2.3.4. In-patients queuing for the next intervention or step in the healthcare pathway, those for whom transfer is delayed pending arrangements for enhanced health or social care in the community are now common, although transfer should occur on the day the patient no longer requires an acute hospital bed. Ensuring this can occur consistently 7 days a week would unburden the pressures upon our inpatient resources. Thus, the concept of 'our hospitals' needs to change radically from an institutional, two site-based model where ward admission is required to "unlock" access to expert staff and equipment, to a nexus of clinical expertise and supporting technology organized to meet the needs of patients in terms of the type of care and the site where it is delivered. We therefore also need to consider how best our chronic disease patients can be managed in the community setting. This will require resources and efforts directed towards preventing exacerbations, relieving suffering, promoting wellness and physical independence.

2.4. Commissioning landscape

2.4.1. As we indicated in last year's annual plan, c.85% of our NHS clinical income is commissioned by NHS England specialist commissioning services (NHSESCS). In the wake of the £12.7bn national budget for specialist commissioning in FY2013-14 being overspent by c.£400m[16], the incoming NHS Chief Executive, Simon Stephens, has said that specialised commissioning will be targeted for tighter budget controls over the next 2-3 years[17]. While the majority of the overspend appears to have occurred in relation to specialist services provided by non-specialist acute Trusts, and while we have already agreed a fair and reasonable Heads of Terms with NHSESCS for FY14-15 activity,

[14] Internal RB&H clinical coding database

[15] Internal RB&H clinical coding database

[16] Consolidated 2013/14 finance report given by Paul Baumann to the NHS England Board, May 2014

[17] Speech by Simon Stevens, CEO NHS England, to the NHS Confederation Annual Conference, June 4th 2014

there is a concern that we and other specialist Trusts nevertheless are likely to face fiercer challenges to any over performance (in terms of activity over and above the amount initially contracted for), as well as more aggressive withholding of QIPP and any other performance-based income share.

2.4.2. Efficiencies and economies of scale have also been identified as one of the secondary rationales put forward in early 2014 by NHSESCS's Medical Director, James Palmer[18], for consolidating specialised commissioning amongst 15-30 provider centres, although an improvement in clinical outcomes and patient experience were cited as the primary rationale. The precise shape and timing of his proposals is to form the major part of NHSESCS's 5 year strategic plan: however, given this plan has not yet been issued for consultation, nor agreed, we cannot therefore yet consider these proposals as concrete facts upon which to base our future strategic plans.

2.4.3. The mechanism stated by Mr Palmer for enforcing consolidation will be audits to demonstrate non-compliance with service specifications as defined by the national CRGs (Clinical Reference Groups). Our own services were assessed by the London team within NHSESCS in November 2013 and, barring one derogation relating to a shortage of appropriately configured capacity for our paediatric cystic fibrosis service, we were deemed compliant across all our services. Indeed, board papers of some CCGs and CSUs (Commissioning Support Units) suggest that in the areas of primary angioplasty and cardiac surgery, our two hospitals may be the beneficiary of ongoing consolidation both in the North West Home Counties and further afield, although again this cannot yet be confirmed.

2.4.4. We and a number of other teaching hospitals have for several years received Project Diamond funding in recognition of the complex nature of many of the services that we provide. Although the Department of Health have stated that the MFF component of this funding that we have received up until and including FY13/14 will no longer be paid, NHS England have announced that the remaining transitional funding portion of Project Diamond will continue in lump sum form in FY14/15 and probably in FY15/16, before being commuted into upward adjustments to tariff from FY16/17 onwards. It should be noted that these are intentions, not guarantees, and that there is a considerable lack of clarity both over the actual timing and the quantum of this funding.

2.4.5. It is not surprising that, given the state of flux in terms of personnel and policies within NHSESCS itself, the dividing line between the responsibilities of NHSESCS and of the Clinical Commissioning Groups (CCGs) remains unclear. The split of commissioning budgets between NHSE and the CCGs does not always follow patient pathways: for example, we have observed that while NHSE have mandated specialist Trusts such as ourselves to take over from GPs the ongoing prescription of complex drugs and the provision of related pharmacy support to complex respiratory and transplant patients when they have returned home, the funding for these drugs and support still remains within CCGs' budgets. The role too of Health and Wellbeing Boards, and how they will work with GPs and community services also is unresolved.

2.4.6. We observed in our annual plan last year that commissioners may want i) to see the provision of a much greater part of pathway of care, especially for certain complex patient cohorts, within 1-2 centres rather than across several providers, and ii) to

[18] Speech to representatives of provider Trusts, arranged by the Foundation Trust Network, at the NHS Health & Care Innovation Expo, Manchester, April 15th 2014

delegate the responsibility for managing the commissioning contract to one centre. While the King's Fund has issued a number of reports on examples of integrated care and Accountable Care Organisations in the UK and New Zealand[19], we have not been approached by our commissioners to discuss how we might extend the 'prime contracting' role that we have been doing for two years already for our adult cystic fibrosis patients, although we welcome the opportunity to participate in any such discussions.

2.5. Private patient market assessment

2.5.1. In our Private Patient markets, the health attachés of the London-based embassies of (in particular) Middle Eastern countries continue to play a critical role in facilitating the flow of patients requiring treatment. However within this flow, we have recognised the growing importance of the physician or cardiologist in the local hospital in (eg) Qatar who originates the patient referral, and (often) of the local overseas treatment board within the health ministry of that country which authorises the onward referral of patients for treatment overseas. Their needs now extend beyond ensuring that their patients receive excellent treatment and a very comfortable stay at our hospitals, and now are focused on increasing the engagement and support that they receive from our clinicians, either in person through visits to these local hospitals or virtually through video-conferenced second opinions. There is also considerable value attached to regular (4x a year) visits from Trust's private patient senior managers, in particular as several of these local overseas treatment boards are looking to reduce the number of providers used in each overseas provider country.

2.5.2. The insurance activities of the health insurance companies (eg BUPA, Axa, Spire), who constitute another source of our private patient referrals, were largely ignored in the recent report [20] by the Competition and Markets Authority, which instead focused on their provider / hospital activities. In general health insurers are continuing to put downward pressure both on our consultants' fees and our (the Trust's) tariffs, with some insurers starting to draw back on the 'open referral' practice by limiting which hospitals a GP can refer an insured patient for treatment. More positively, others are now finding newer ways to work collaboratively with us – eg funding the set-up of jointly branded clinics, and helping direct their patients on a self-pay basis to some services that we provide that are not covered within their standard packages.

2.6. Competitor assessment

2.6.1. The intensity of competition for tertiary referral flows to our hospitals varies considerably across our portfolio of services. There are few, if any (though see caveat below), similarly broad-based tertiary competitors in respiratory medicine in the UK, when compared to 7-8 tertiary cardiac peer centres in London & South East. There are perhaps two reasons for this. Firstly, cardiac diseases and conditions involve inpatient interventions to a greater extent than respiratory diseases, which because of a demonstrable broad generic linkage between interventions' volumes and their

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[19] "*The quest for integrated health and social care: a case study in Canterbury, New Zealand*", The King's Fund, 2013: "*Accountable care organisations in the United States and England: Testing, evaluating and learning what works*", The King's Fund 2014

[20] "*Private Healthcare Market Investigation – Final Report*", 2nd April 2014, Competition & Markets Authority

outcomes[21], tend to form an obvious target for commissioners' reviews and programmes to consolidate providers. In turn, this results in an intensification in competition between ourselves and other centres. Secondly, our respiratory activities hold a more clearly defined position of market leadership, founded principally upon critical mass within each of a broad set of niches across a wide range of common and rare respiratory diseases and also therapeutic areas, but also upon a UK-leading[22] joint research capability shared with Imperial College. It could be argued too that we have not been able to carve out as many distinctive niches within our cardiac activities, largely because of the need to work on less complex as well as more complex cases in order to maintain the required thresholds of volume of interventional activity.

2.6.2. In the cardiac field, our primary tertiary competitor for surgical and arrhythmia work is Imperial College Healthcare Trust (ICHT), whose interventionists attend the same outreach MDT meetings at DGHs as our interventionists in order to win patient referral flows. At a regional level, Guys and Thomas's are developing a specialist aortic surgical unit, with strong interventional radiologist support. Papworth continue to top the SCTS[23]'s database in terms of activity volumes and outcomes for cardiac surgery, and draws some patients from our hospitals' catchment areas. The merger of Barts and the Heart Hospital has in the short-term created some opportunities to win incremental referral work: longer-term, the combined entity could have unrivalled breadth and depth of coverage across many sub-specialty areas.

2.6.3. From a respiratory perspective, although there is no broad-based tertiary competitor with a comparable spectrum of niche activities, there are several London-based competitors within particular niches. The Guys and Thomas's (GSTT) Lane Fox unit is particularly strong in managing and weaning ventilated patients, and has recently opened a satellite unit in Redhill in partnership with BOC (British Oxygen Company)[24]. GSTT also have a well-developed capability in managing acute lung failure within their ICUs: they like us are one of 5 centres nationally commissioned to provide respiratory ECMO (extra-corporeal membraneous oxygenation). We understand too that their ambitions in the critical care arena extend potentially to helping support and monitor DGHs' ITU patients remotely through a recently installed Philips technology solution[25].

2.6.4. There are now several NHS and private providers in the arena of home-based ventilation through CPAP (continuous positive airway pressure) monitoring, although many lack the volumes to be able to invest in the necessary support infrastructure. For community-based pulmonary rehabilitation and oxygen assessment services, BOC is emerging as an effective competitor by building off the back of its role as a supplier of oxygen canisters to patients' homes. Although for thoracic surgery our two hospitals' caseload combined make us the largest centre in the UK, Oxford in particular are actively expanding their clinical team in order to compete for surgical patient flows from DGHs in the NW Home Counties, while ICHT remain the incumbent for patient flows from several NW London DGHs.

2.6.5. The flows of international private patient referrals that we receive from our Middle East based referrers will evolve over time, not least because our local partners will become

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[21] "*Hospital volume and surgical mortality in the United States",* Birkmeyer et al*,* New England Journal of Medicine, 2002

[22] 2013 RAND analysis of highly-cited papers

[23] Society of Cardiothoracic Surgeons

[24] "*Guy's and St Thomas' and BOC to develop specialist centres for ventilator-dependent patients*" – BOC Press Release, September 2013

[25] "*Philips brings the first remote ICU monitoring system of its kind to the United Kingdom*" – press release on Phillips website, July 2013

able to fulfil their aspirations of carrying out themselves many of the diagnostics and interventions for which they are currently referring their patients overseas. Although there is a challenge to attract the critical mass of volumes of activity to warrant the investment in interventionists specialising in particular procedures such as to achieve comparable outcomes to the UK or US, the Kuwait health ministry (for example) are now actively trying to concentrate all cardiovascular activity across all Kuwaiti hospitals in just the Kuwait Heart Hospital. The recent MoUs we have signed increasingly indicate their desire for our help in training up this local capability, which aligns with the significant expansion of local hospital capacity that is under way in several markets (especially Kuwait and Qatar). In addition, the Overseas Treatment Boards within local Health Ministries, while narrowing down the number of partners they will work with in each overseas referral destination country, have indicated that they may look beyond their traditional suppliers (principally the US, the UK and Germany) to new countries such as South Korea in order to see if a similar quality of care can be obtained for lower tariffs.

2.6.6. Within the UK, the HCA Group continues to invest heavily in renewing the facilities at its London hospitals (amongst them the Harley Street Clinic, the London Bridge Hospital and the Wellington Hospital)[26]. While we are able to compete for referral flows with the HCA's hospitals as their tariffs tend to be clearly higher than NHS PPUs such as ourselves, it is likely that the London hospital that HCA Group will be forced to sell off as a result of the Competition and Markets Authority's ruling will be bought by another private provider with more keenly priced tariffs.

2.7. SWOT analysis

2.7.1. Strengths: listed below are those key competencies / capabilities which the Trust has developed effectively, such that they can be regarded as strategic strengths from which sustainable competitive advantage can be derived.

2.7.1.1. Having a coherent mission as a specialist centre: because we focus just on treatments of heart and lung disease, we are able to structure ourselves into sub-specialist teams and also to discover / set up new sub-specialties. This in turn enables us to be early innovators in a particular niche, and thus to build up a strong (sometimes leadership) position within these niches.

2.7.1.2. Expertise in critical care (level 3 & level 2) – being able to combine disease (eg ILD, CF, ACHD) and treatment (eg ECMO, Novalung) expertise, and managing multiple co-morbidities/ conditions (eg diabetes, pregnancy) and multiple organ failure (eg heart, kidney and nervous system) alongside a heart or lung disease.

2.7.1.3. Critical mass / volumes in nearly all clinical interventions: not only builds expertise, experience and confidence but also minimises the 'denominator' threat (ie if the volume of interventions is low, 1-2 cases with unfavourable outcomes can assume a disproportionately large significance).

2.7.1.4. Comprehensive but workable clinical risk management: having the practices and infrastructure that enable our clinicians to optimise outcomes even with very sick patients, and to innovate safely with confidence.

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[26] "*In the past five years alone, HCA International has invested more than £200m into its UK hospitals and other facilities*" – press release on London Bridge Hospital website

2.7.1.5. Productive relationships with referring hospitals: our cardiologists, surgeons interventionists and respiratory physicians attend ‘outreach’ clinics and MDTs and conduct ward rounds at our partner DGHs, and work closely with DGH colleagues to manage patient referrals and to involve them in education / training events

2.7.1.6. Long-established ‘eco-systems’ of care: we have developed over time very comprehensive arrays of diagnostic and therapeutic capabilities adapted to and expert in treatment of (in particular) congenital diseases such as CHD (congenital heart disease) and CF. Tight, multi-disciplinary networks extend far beyond the consultant medical level (physiotherapists, dieticians, psychologists, clinical nurse specialists, transition nurses); closely involve imaging of multiple modalities and different areas of laboratory services expertise; and offer greater certainty as to the continuity of care when paediatric patients transition through adolescence into adulthood.

2.7.2. Weaknesses: set against these areas of strength, there are also capabilities and assets of strategic importance that we are currently lacking or that are under-developed.

2.7.2.1. Limitations of our physical infrastructure: across several dimensions - location, capacity, configuration and condition - our hospitals’ buildings and physical asset base constrain our services in terms of their ability to grow and to provide an appropriately 21st century experience for our patients. The lack of sufficient intensive care beds in both our hospitals to meet current demand and to accommodate new practices / patient cohorts, and the shortage of inpatient capacity for our respiratory patients at Royal Brompton and for private patients at both hospitals, are becoming particularly acute issues.

2.7.2.2. Cardiovascular not just cardiac: as observed in our FY13/14 annual plan, the increasing confluence of cardiac and vascular practice in the UK, as typified by interventional practice to treat aneurysms and dissections within the aorta, demands that our clinical practice in this area must become more cardiovascular than merely cardiac. Our investments in a hybrid theatre and in key appointments are very much ‘playing catch-up’ to match the leading UK & European centres in terms of caseload and experience.

2.7.2.3. Managing succession in key roles: within 3-5 years, a number of incumbents with unique sub-specialist expertise within key roles are likely to have retired. The narrow nature of their particular sub-specialties will make recruitment on a like for like basis very difficult, and it will take time for ‘home-grown’ / in-house candidates fully to ‘fill the shoes’ of these particular experts.

2.7.2.4. Limitations of our current IT architecture and infrastructure (I): there is a lack of connectivity with clinicians from partner Trusts who provide the multi-disciplinary environment (eg ENT, rheumatology, neurology, diabetology or endocrinology etc) that supports our core services, such that they cannot readily access information on and view images of our patients without physically being in one of our hospitals. Nor can our interventionists make an effective rapid decision whether to accept a request for an emergency transfer of a patient for surgery from a DGH, since we have to wait for the CD of the images to be couriered to us.

2.7.2.5. Limitations of our current IT architecture and infrastructure (II): from a productivity standpoint, the limitations of our 20 year old PAS (patient

administration system) and multiplicity of small non-strategic solutions have 'baked' multiple inefficiencies into the daily working practices of our front-line and supporting staff, which create a sub-optimal experience for our patients.

2.7.2.6. Limitations of our current IT architecture and infrastructure (III): an ageing infrastructure with multiple single points of failure contributes to issues with performance and reliability which impact I&T's ability to deliver high quality cost effective services to the Trust.

2.7.3. Opportunities: the considerable challenges faced by our local, regional and national healthcare economies, and the significant reconfiguration and redesign of practices and pathways that are evolving, will inevitably create opportunities for our Trust.

2.7.3.1. Further improve the quality of care for our patient cohorts – our emerging clinical strategy (summarised in sections 4.2 & 4.3) will formalise and appropriately resource the capabilities necessary to assess these patients when they present acutely; better manage their co-morbidities within level 1 wards; support their transition and handover to community care teams; provide better continuity of care and clinical decision-making; and make better use of fixed assets such as scanners and catheter labs

2.7.3.2. Fully develop our educational capabilities: a broad but fragmented range of organised education and training activities exists across our Trust. Many of these are driven by the interests of individual clinicians, most are of a high quality, and several are nationally recognised (eg our CRSIS course is accredited by the SCTS). There is scope to put in place a support structure that will (inter alia) improve consistency across all programmes / courses, promote these courses more effectively to internal and external audiences and students (both within the UK and overseas), align them more closely with our clinical priorities, and make them financially sustainable.

2.7.3.3. Develop the resources, practices and tools (outbound and inbound contact teams, web portals and marketing plans) better to engage and communicate more effectively with patients; to promote the services of the Trust to patients, CCGs and referring clinicians alike in order to win new referral flows; to attract new clinical talent (nurses and AHPs as well as medics); and to promote our vision and values in order to build influence in external forums, medical societies and at senior levels of the NHS and Department of Health.

2.7.3.4. Continuing to seek and build strategic partnerships: as a specialist Trust with a broad portfolio of niche / sub-specialist services, there are gaps within this portfolio that we have not yet filled. Joint ventures and collaborations with other providers enable us to fill these gaps, grow existing services more quickly, give us reach into new geographical areas, may add capacity, and may give us access to new niche services.

2.7.3.5. Through our capital programme we are making significant investments in scanner, critical care and intervention suite capacity at one or both of our sites. These present us with an opportunity to rethink operational practices, which in turn will improve our patients' experience during their treatment as well as improving the financial return from these investments.

2.7.3.6. Improving our alignment with our principal academic partner: in spite of our joint leadership position within the UK in both cardiac and respiratory research

output[27], our relationship with Imperial College (IC) could become more productive and mutually benefical, in terms both of closer academic and educational collaboration and of building influence within senior DoH, NHS England and other political circles.

2.7.4. Threats: the principal threats to our Trust are as follows:

2.7.4.1. Tighter specialist commissioning budgets: although we have not yet received any firm confirmation as to what commissioning regime NHSESCS will impose beyond the current FY14/15 year, there is a risk that they may (for example) withhold QIPP-related and other payments more readily and aggressively than in previous years. In turn there would be a risk that we might not in all cases achieve the level and specificity of performance required (nor provide sufficient supporting evidence of this performance) to secure the full amount of the withheld payments.

2.7.4.2. An intensifying struggle for market share / patient flows for interventionist services: in the area of cardiac and thoracic interventions, retaining and augmenting market share in order to improve throughput and utilisation of high fixed and semi-fixed cost bases (theatres, catheter labs, on-call teams) will become of paramount importance. This will be both to maximise financial contribution in an environment of largely downward pressure of tariffs and also to ensure volume thresholds of activity (as prescribed by the standards set by national CRGs) are met. This competitive threat will intensify further if capacity / configuration constraints (see 2.7.2.1 above) delay our ability to lead the development of surgical or catheter-based innovative techniques, or at least to be a 'fast follower'.

[27] 2013 RAND analysis of highly-cited papers

3. Risk to sustainability and strategic options

3.1. Identifying the key risk to our sustainability

3.1.1. One of the aspects of our being a specialist Trust is that we often treat patients who are more seriously affected by heart or lung disease than in other Trusts, or whose symptoms present in a particularly complex way. Because there is an inherent level of risk in treating some of these patient cohorts, we therefore have developed a robust and comprehensive (see section 2.7.1.4 above) risk management and clinical governance systems to guide and assess new innovations, escalate awareness of emerging risks and determine mitigations of these risks, and to review performance across outcomes, safety and patient experience. The main features of these are described in more detail in section 1.2.3.1 of our Operating Plan submitted earlier this year.

3.1.2. We have recognised clearly where there are areas for improvement, and these have mostly recently been addressed through initiatives such as the Quality & Productivity programmes (instigated by the Trust's Medical Director) which are one of our six ongoing Quality Priorities (described in more detail in section 1.2.3.4 of the Operating Plan), or such as the several appointments made over the last 1-2 years on both our sites to increase the level of on-site and on-call provision of support in non-cardiovascular and non-respiratory clinical specialties. Our clinical strategy too requires some structural changes to be made, both within and outside our hospitals, in order to maintain its currency and efficacy: but we are working through the planning for these changes as described in sections 4.2 and 4.3. But while we are determined never to be complacent about any aspect of our care, we do not see the primary risk to our sustainability as a Trust over the next 5-10 year period resulting from one or more serious defects in either our model of care as a specialist centre or in the quality of its delivery.

3.1.3. We have referenced above in section 2.7.2.1 the strategic weakness of the state of our buildings and physical infrastructure, in particular at the Royal Brompton, in terms of their condition, configuration and capacity. As noted in the Operating Plan, we have addressed the most serious defects in our buildings' condition through a 3-year accelerated planned preventative maintenance (PPM) programme, supported by a ring-fenced allocation of capital from the Trust's Capital Working Group. The Capital Working Group has approved the allocation of further sums to continue this accelerated programme for one more year during 2014/15, beyond which all existing maintenance risks in all buildings across both sites will continue to be listed and monitored individually on the Trust's Risk Register.

3.1.4. We have recognised for a long time that the configuration of our hospitals is sub-optimal in terms of optimising patient flows between outpatient clinics and diagnostic imaging and test rooms and between different levels of care. This is a key rationale behind our redevelopment plans, both in order to improve the ease with which our patients can physically access the different diagnostic, treatment and rehabilitative stages of their care pathway, and also in order to improve the efficiency with which our staff (clinicians and administrators alike) can be deployed. However this issue too is not of sufficient gravity and scope such that it threatens the long-term future of the Trust.

3.1.5. Having also reviewed the top10 risks on the Trust's risk register, we are confident that all of them are addressed within this plan or the Operating Plan that we have already submitted. We therefore believe that the primary threat to our sustainability lies in the financial headwinds that are created by the NHS commissioning environment, most

notably in terms of tariff deflation. The key risk lies in whether we are able to keep optimising and / or adding enough ward, outpatient, daycase and interventional capacity, such that sufficient incremental volumes of activity can be carried out to compensate for these headwinds. The benefits of this additional capacity are not just in terms of top-line financial growth – there will also be attendant benefits in more productive nursing and junior doctor rotas, and, critically, widespread improvement to most patient cohorts' experience during their episodes of care in terms of shorter lengths of stay and better handovers to other care providers. However if we are unable to increase the scale and volume of our activities, our model of care will struggle to remain viable over the long-term, in terms of maintaining both a financial surplus and also leadership positions in our many specialty & sub-speciality clinical service lines.

3.2. Summary of how our 5 year financial plan addresses this risk

3.2.1. The 'strategic option' around which our 5 year financial plan is built is therefore predicated around the addition of capacity primarily at Harefield, with significant additional capacity at Royal Brompton only occurring in from FY19/20 onwards (ie outside the term of this plan) as a result of the investments made in new facilities that will be funded by the proceeds of site disposals during 2016-2018 (as laid out in sections 4.1.1.5 - 6 below).

3.2.2. As described below in section 4.1.3, a sum total of 54 additional beds (some of which will be for private patients) will be added at Harefield in the first 2 years of this 5 year plan. This increase in inpatient capacity will be complemented by the reconfiguration of interventional suites (theatre 3 and endoscopy rooms) and the creation of additional scanning capacity, all of which will improve both the efficiency of how theatres (in particular) are used and also overall patient throughput (eg fewer delays in waiting for access to a CT-scan). In the final year of the plan, the completion of the Graduated Care Building will add another 10+ critical care beds. (We envisage borrowing further from ITFF to finance the Harefield Graduated Care Centre which will increase borrowings but not affect liquidity under the COSR - Continuity of Service Regime).

3.2.3. The incremental volumes of NHS activity (arising principally from this additional capacity) are sufficient to see a growth in NHS clinical income from £286m to £315m, even with downside assumptions built-in of a 1.5% annual reduction in tariff and the non-payment of the MFF (Market Forces Factor) portion of Project Diamond funds. (With regard to transitional Project Diamond fund, the forecast assumes that tariff will be adjusted from FY16/17 onwards to compensate for Trusts for complex procedures as historically agreed by NHS England and its predecessors). As stated in section 2.4.3, most of these volumes will represent market share taken from peer providers, rather than an expansion of the market, given the likely trend towards a consolidation of providers driven by the service standards / specifications emerging from national Clinical Reference Groups. In parallel to this NHS volume growth of 10% over the five years, the 50% growth in private patient income over the plan period will be driven by a combination of revenues from diagnostic tests and inpatient stays off the back of new outpatient clinic space in Wimpole Street. Contribution margins from developments to grow both NHS & PP revenues have been planned at 50% which is consistent with average levels seen in recent years and including the short term plan for 2014/15.

3.2.4. As noted in section 4.2, a proportion of the incremental inpatient (NHS and private patient) stays will be generated by improved throughput through existing capacity on both sites as a result of reconfiguring our model of care (eg 7 day working). These

benefits are likely to feed into the financial plan from FY17/18 onwards, although the investment in (principally) pay-costs required to secure and sustain these benefits will be the principal component of the £4-5m of cost pressures forecast for all 5 years of the plan:

3.2.5. 'Cost pressures' are incremental both to the costs associated with increased activity levels and to the inflationary 2% p.a. applied to the cost base. They are in part discretionary and therefore represent something of a cost contingency for each year. By year five, we consider that the changes resulting from 7 day working and other factors will have been fully worked into the system, such that we are projecting lower (£3.3m) cost pressures for that year.

3.3. Alternative options

3.3.1. There is no realistic alternative strategic option to that summarised above. If, over the next 5 years, we fail to add capacity at Harefield, and also fail to secure the permissions necessary for redevelopment of the Royal Brompton over the following 5 years, there is a very significant risk that we will not only incur a deeper set of financial deficits in FYs16/17, 17/18 and 18/19, but also fail to achieve the return to breakeven / surplus beyond. More importantly, there will be an increase in the probability that other risks will crystallise – eg that some of our services will be decommissioned (eg in relation to waiting-times for inpatient admissions), that we will lose our leadership or at very least a competitive position in clinical speciality areas, and potentially that we will cease to be the preferred tertiary centre to whom some or more of our partners refer.

4. Strategic plans

4.1. Redevelopment of our two sites

4.1.1. Royal Brompton (RBH): the long-term trajectory

4.1.1.1. Our hospital's services are currently delivered from a campus of several buildings, separated by historical accident rather than design. Our goal is to consolidate all these services and their clinical teams into a single state-of-the-art facility on our current Sydney Street site. This will enable us to integrate patient care more effectively; streamline the day to day running of the hospital; accommodate the forecast growth in demand for our services; increase the proportion of income spent on patient care by reducing backlog maintenance costs; and improve and increase the amount of social and community accommodation for medical and clinical uses in the Royal Borough. We believe that this will comprehensively address the capacity and configuration issues and some of the competitive threats described in sections 2.6 and 2.7.2.1 above in relation to Royal Brompton.

4.1.1.2. These development proposals require a significant financial investment, currently estimated in excess of £500 million. In order to fund this investment, we plan to seek planning permission and over time sell those sites within this Chelsea campus that would become surplus to our core requirements if (and only if) we were to be able to consolidate all our clinical activities within a fully integrated new hospital on the Sydney Street site. These sites, owned both by the Trust and Royal Brompton & Harefield Hospital Charity, might realise approximately £500 million with appropriate residential and commercial planning permissions. The Royal Borough of Kensington and Chelsea (RBKC) is currently consulting on a Supplementary Planning Document (SPD) in relation to the masterplan for our Chelsea campus. If this SPD is approved by the Royal Borough's planning committee, we will look to submit a detailed planning application for each of the six sites. In the event that these applications were to be approved, we would not expect work to begin on-site until 2018 at the earliest.

4.1.1.3. The Royal Marsden Hospital (RMH), who are one of our healthcare partners and with whom we have a long history of joint working, have objected to the SPD. They wish to purchase one of these sites, our Fulham Wing building, (which is currently used principally for our inpatient respiratory services and all Royal Brompton's outpatient services and which is adjacent to RMH), for a value based on hospital / healthcare usage that is c.£100m below the expected value that we are seeking to realise with residential planning permissions.

4.1.1.4. There is therefore a risk that if RMH's objection to the SPD is successful, we would not be able to afford to build the new hospital on the Sydney Street site and we would have to continue to occupy our current footprint of sub-optimal, ageing buildings. To mitigate this risk, we will continue to offer RMH clinical space in the new integrated hospital; to develop new collaborative clinical services together; and to be open to consider any proposal from RMH that takes the needs of RMH into account while not adversely affecting our ability

to improve both the clinical quality and patient experience of our services, were our development to be halted or delayed.

4.1.1.5. Our 5 year financial model covers the initial years of the redevelopment of the Chelsea campus and incorporates the sales of some of the investment properties owned by the Trust and Royal Brompton & Harefield Hospitals Charity ('the Charity'), the proceeds of which will then form the initial investments in the redevelopment.

4.1.1.6. Within the overall redevelopment masterplan the five year period of the strategic plan includes the sales of Site 1 (151 Sydney Street & 250 Kings Road), Site 2 (Chelsea Farmers Market and 117-123 Sydney Street) and Site 5 (Foulis Terrace) which in total are estimated to yield £179m. The assumed value of Trust owned properties within this are £114.4m and the value of the Charity-owned properties (with proceeds assumed to be donated to the Trust in full) is set at £64.6m.

4.1.1.7. For the five years covered in the strategic plan this results in cash inflows of £28.9m in 2016/17, £85.5m in 2017/18 and £64.6m in 2018/19 all of which are ring fenced for the RBH campus redevelopment. The resulting capital expenditure totals £119m within the five year period (£28.9m in 2017/18 and £90.1m in 2018/19) leaving a £60m cash balance, to be boosted by further sales proceeds, all of which is invested from 2019/20 onwards.

4.1.2. <u>Royal Brompton – interim developments</u>

4.1.2.1. The development of a hybrid theatre facility at Royal Brompton will enable the use of emerging technologies for the treatment of cardiac diseases which is a strategic imperative if we are to remain competitive. At the sub-specialty level within cardiac surgery, progressive procedures and technology- most prominently the use of transcatheter valves and also of many vascular technologies such as abdominal aortic aneurysm (AAA) stents and thoracic aortic aneurysm (TAA) stents - continue to increase in prevalence and sophistication. All of these technologies require a surgical cut down for delivery which requires a more sterile environment than is found in a standard catheter laboratory. A business case to build this hybrid theatre has been approved by the Trust's capital working group, and the 16 month capital programme will start later this summer within the existing theatre footprint at Royal Brompton, including enabling works to re-provide staff changing-rooms.

4.1.2.2. AICU extension: The AICU at the Brompton site lacks both sufficient ICU capacity and the optimal configuration of that capacity. The great majority of RBH's AICU admissions are elective cardiac surgical patients, of whom there is a steady throughput driven by waiting-lists, and who having been screened for infection prior to hospital admission thus constitute a low infection control risk and can be cared for in the AICU's bays of four beds. By contrast, acute respiratory failure patients who are transferred in from other hospitals are more likely to have hospital-acquired infections, and hence are best cared for in individual rooms, of which there are only 4 within RBH's overall AICU capacity of 20 beds. Acute respiratory failure patients have a relatively long median length of stay (c.2 weeks vs 3-4 days for cardiac surgical patients). Hence admitting any more than 1-2 acute respiratory patients at a time

considerably constricts the throughput of surgical patients, which can contract to 1-2 patients per day.

4.1.2.3. Consequently RBH's lack of dedicated ICU capacity for acute respiratory failure patients, with individual rooms throughout, has wholly limited to date the potential to increase the number of patients treated. As a specialist centre with a designated extracorporeal oxygenation membrane (ECMO) service, the need for additional capacity is needed to meet current and future demands for patients with acute respiratory failure as well as for the development of other service such as a veno-arterial (VA-ECMO) or veno-venous (VV-ECMO) and weaning.

4.1.2.4. We therefore have initiated a programme to develop and equip a 7 bed Severe Acute Respiratory Failure Unit (SARFU) at the Royal Brompton Hospital (RBH), adjacent to the existing Adult Intensive Care Unit. We would anticipate basing the recently commissioned adult respiratory ECMO service, as well as all other acute respiratory services, within this SARFU. This scheme would enable us to increase the number of acute respiratory failure patients that we treat per year. A business case is being completed for approval by January 2015, in order that work can start around April/May 2015, with a completion date of April/May 2016.

4.1.2.5. The Fulham Wing, which as mentioned above, accommodates our inpatient respiratory services and all Royal Brompton's outpatient services is the building where capacity, condition and configuration issues are most acute across both our hospitals. The timeframe implied by the planning process laid out in section 4.1.1 above indicates that these respiratory inpatient services are unlikely to be re-accommodated in purpose-built facilities within the new hospital on the redeveloped Sydney Street site before 2020. To maintain our leadership positions across several respiratory market niches, to provide capacity to meet existing growth in demand, and to provide a patient experience that is in line with emerging standards set by Clinical Reference Groups, within 1-2 years we must develop a viable option to re-provide facilities for some of these services on an interim basis.

4.1.2.6. Over the next three months we will have completed a review of all the respiratory services that are based at Royal Brompton with a view to understanding how care pathways could be delivered differently, in terms of location, levels of acuity, and the potential use of telemedicine and other forms of technology.

4.1.3. <u>Harefield</u>

4.1.3.1. Harefield has developed rapidly from a Mon-Fri 8-6 service with a significant out-of-hours transplant service, to a very busy 24/7/365 acute cardiac centre. All clinical services have generated significant additional demand in recent years: cardiac surgery, thoracic surgery, transplantation, cardiology, imaging and respiratory medicine have all expanded their capacity, output and complexity in the last 3 years, driving increased and sustained financial contribution from heart, critical care and lung services at Harefield.

4.1.3.2. The current and projected demand, in addition to opportunities in respiratory services, require further capacity across the board: in critical care and high dependency beds; level 1 inpatient (IP) beds; imaging; day case and short-

stay beds; and outpatients. Opportunities exist to further improve theatre and catheter lab productivity but this requires sufficient day case, IP and level 3/2 bed capacity.

4.1.3.3. The programme to extend capacity has three proposed phases:

- Phase 1 - 2014-15:
  - A modular-built extension to the ITU that incorporates 6 additional Level 3 beds.
  - A modular-built scanning centre to house a fixed MRI scanner (to replace current sub-optimal mobile provision) and an additional high-end CT scanner. The existing 8 year old CT scanner will also be replaced.
  - A further18 Level 1 beds
  - Expansion of outpatients capacity
- Phase 2 - 2015-16:
  - Creation of a short-stay endoscopy facility, including additional daycase / short-stay beds for respiratory as well as cardiac patients
  - Rebuild of Oak ward with 2 storeys, offering an additional 30 level 1 beds
- Phase 3 – 2018-19:
  - Development of a Graduated Care and Imaging Centre: as well as further expanding capacity, this Centre will consolidate all level 2 & 3 beds into one location, improving the model of intensive care and enabling more effective use of medical and nursing rotas. It will also bring together all the major scanning modalities (MRI, CT and potentially PET/CT) within a single, purpose-built facility.

4.1.3.4. We believe that this single strategic programme will provide the infrastructure, staffing and service developments required to respond to the growth in demand from our key referral partners, as well as maintaining a regional / national leadership position in several key interventional specialties. This programme is structured so that phases 1 & 2 contribute to the affordability of phase 3, which represents the corner-stone of Harefield's long-term redevelopment. In yielding incremental annual contribution of £4-5m within 4-5 years, phases 1 & 2 generate the cash-flow that could cover the annual repayments of the bank loan which will be required (alongside charity fund-raising and contributions from the Trust's regular capital programme) to fund phase 3.

4.1.3.5. This programme also represents an important source of I&E contribution growth. The current commissioning environment of aggressive QIPP agendas and tariff deflation has been noted above. The Trust's Financial Stability Plan for the last 3-4 years has been characterised by an equal split between cost reduction / efficiency initiatives and new service developments generating margin delivered from more or less the same physical infrastructure. Although there have been some capital investments that have added capacity (e.g. 2 sleep labs at Royal Brompton; Acorn Ward and 4th Cath Lab at HH), this capacity has readily been filled. We need to keep growing the volume of activity, both to respond to demand and to reduce unit costs. With significant capacity expansion at Royal Brompton only possible from 2020 onwards, the

programme of expansion at Harefield outlined above is the principal means through which this volume growth will be achieved.

4.2. Reconfiguring our model of care – internal

4.2.1. 7 day working:

4.2.1.1. A widespread perception of the rationale for provider Trusts to move to offering most or all their services on the same or similar basis every day of the week is that this will remedy a perceived shortfall in the quality of care that occurs at weekends. A much-cited consequence of this perceived inconsistency is the alleged (or otherwise) practice of discharging frail and elderly patients from secondary care at a late hour of a Saturday or Sunday evening, with no arrangements in place for a hand-over of responsibility for the patient to a primary or community care team.

4.2.1.2. Our plans for 7 day working are not predicated at all on this rationale. Rather we see this as an opportunity significantly to streamline (in particular) inpatient pathways within our hospitals, to shorten lengths of stay (thereby improving both our patients' experience and the productivity of our clinical teams), and (critically) to free up capacity to enable future activity growth. The key to unlocking this opportunity is ensuring that clinical decisions that move patients onto the next stage of their pathway can be reached within the same timeframe and with the same consistency of multi-disciplinary input on a weekend as on a weekday. This is of particular relevance in a tertiary centre such as ourselves, given the broad scope of diagnostic tests and scans that potentially can be relevantly deployed. For example, a patient who has arrived via inter-hospital transfer into a bed in one our HDUs (High Dependency Units) for cardiac surgery is assessed by the surgical registrar on a Friday afternoon as needing a CT-scan: rather than having to wait until Monday morning for the scan to be performed, before then being listed for urgent surgery on Tuesday, his / her scan is performed and reported on Friday evening or Saturday morning, with the surgery being scheduled for on Saturday afternoon or at worst Monday morning.

4.2.1.3. Central to our plans is a redefinition of what constitutes out of hours or on call work patterns, with a much greater prominence of shift-based working. In-hospital access for ward or interventionist teams within an hour to an expert imaging or histopathology opinion should occur as the norm every day. Although not yet confirmed, regular surgical and cath lab lists will be planned for Saturdays. In some areas (eg catheter labs at Harefield) we have already increased the proportion of shift work vs out of hours / on-call work, driven by the demands of the existing primary angioplasty / heart attack service: in disciplines such as physiotherapy and pharmacy, we have already moved to a 6 day working week. We aim to have formalised our plans by the end of this (FY14/15) financial year, and to have implemented the majority of the changes required by the end of FY15/16.

4.2.1.4. Our working assumptions are that these changes will incur low single-digit percentage growth in pay costs. While on the one hand staff rotas will have to be enlarged, on the other hand the substitution of higher-cost out of hours pay scales and on-call supplements for regular hours' pay scales will reduce the average cost per hour worked. This will ensure that any incremental activity

that can now be scheduled to fill the beds / day-beds freed up by shorter lengths of stay will incur lower marginal pay costs than in previous years. Clearly these assumptions will be revisited and reiterated: however these freed-up beds / bed-days are also an integral part of the additional capacity that the Trust must add in order to achieve our 5 year plan (as referenced in section 3.1.5).

4.2.2. Raising the intensity and breadth of ward-based care

4.2.2.1. As highlighted in section 2.2.5 above, our cohorts of patients with long-term chronic conditions (asthma, heart failure etc) are experiencing acute episodes and exacerbations more frequently. We currently are unable to admit and assess these patients until after they have presented at their A&E departments and been subsequently referred onto us for management of this episode / exacerbation of their primary cardiac or respiratory morbidity, during which time their condition may have deteriorated. A second issue is that many of these patients, as well as those arriving on our level 1 wards in their recovery after a procedure or intervention, are significantly older with more co-morbidities and a greater complexity of acute illness than a generation ago. Half of those aged over 60 years have at least one chronic condition and this proportion will double over the next 2 decades as the population over the age of 85 doubles.

4.2.2.2. Each Level 1 ward will now be brought under the oversight of a rota of consultants probably drawn from the existing consultant body of the four Divisions within the Trust (although we may consider the employment of a new cadre of 'generalist' consultants, perhaps trained in general internal medicine), who will assume responsibility for the delivery of all care provided on that ward. The 'consultant on duty' will take the lead in providing acute assessment of incoming patients, and in co-ordinating the attendance of (eg) ENT specialists, diabetologists and gastroenterologists to manage co-morbidities – very much in an analogous fashion to working arrangements currently in place in Level II (HDU) and Level III (ICU / ITU) wards. This will mean a further of expansion of the role of these non cardiothoracic / non-respiratory specialists, both in terms of attending on-site clinics and ward rounds and also potentially leading them as part of the on duty consultant ward rota.

4.2.2.3. We believe that for many of our consultants this ward oversight role can be accommodated within their existing schedule of planned activities (PAs). Ward rounds are included within all our consultants' job descriptions: the introduction of this oversight role will now ensure that the time for these rounds (c.3 PAs per week) is more clearly ringfenced, and that their scope extends to all patients within the ward rather than just those of a particular consultant's specialty / sub-specialty area. This broadening of scope will likewise include our middle-grade doctors (SpRs and non-deanery clinical fellows), to whom falls the responsibility of ensuring (for example) that a test has been ordered and carried out or that a physiotherapist has been booked. Although there will likely be an increase in pay costs over the next 2-3 years to meet this oversight role, as with 7 day working we believe that these will not exceed the annual level of 4% cost pressures assumed within our 5 year forecast, and that there will almost certainly be compensating benefits in terms

of a reduction in inpatients' lengths of stay (although these have yet to be quantified).

4.2.3. We are confident that these two changes (7 day working, and clearer accountability in ward-based care) will greatly improve the quality of care given to our patients. We will be better able directly to assess and admit our patients with long-term conditions when they fall acutely ill; decisions about their treatment will not be delayed because of quirks of staffing levels at varying times of the week; and their stays within level 1 care will be purposefully co-ordinated and shorter. These internal improvements within our hospitals however cannot happen without, or in isolation of, changes to the way we engage with our patients when they are outside our hospitals (eg at home) and with other provider partners (see section 4.3 below).

4.3. Reconfiguring our model of care – external

4.3.1. Community-based diagnostic and rehab clinics

4.3.1.1. As was signalled in last year's annual plan, we have now begun community cardiology services on a pilot basis in Hillingdon (working with our long-term partner Hillingdon Hospital and with Hillingdon CCG) and in Earl's Court. We intend to use the experience gained to develop and refine both services further so as better to suit both patients and the referring GPs with whom we work. In setting up more of these community-based services, we will look to work with our secondary care / DGH partner providers, both in terms of resourcing (so as to ensure these services remain consultant-led) and of minimising duplication or creating friction.

4.3.1.2. Our pulmonary rehabilitation service based in the borough of Hillingdon remains the largest of its kind within the country. We have observed an increase in the number of tenders being run by (typically) CCGs for pulmonary rehab and other related services (eg long term oxygen therapy, spirometry testing), while Imperial Health Partners (our local AHSN of which we are a member) has funded a workstream to develop a robust 'care-bundle' for primary care that includes pulmonary rehabilitation. We are therefore considering how best to use our multi-disciplinary clinical approach to enlarge the scale of our service, potentially in partnership with community healthcare Trusts or private providers of other related services.

4.3.2. Co-ordinating patient pathways beyond our hospitals

4.3.2.1. The services we provide for our patients are very often the starting-point – or a staging-post – in the management of their condition and in their 'journey' back to wellness. Some of our clinicians, prompted by both clinical challenges and operational issues such as pressures on inpatient beds, have sought both to facilitate the discharge of these patients, especially those with complex needs, and to minimise the risk of their admission, by helping to co-ordinate the onward pathway of these patients beyond our hospitals. The Hospital to Home service, initiated by one of our paediatric intensivists, uses an online platform and a small central co-ordinating team, to manage the discharge of children who are ventilated via a tracheostomy from a tertiary hospital such as Royal Brompton to their homes. This service, now nationally commissioned across all PICUs and NICUs in the UK, co-ordinates the activities of all the carers and

agents within secondary, primary and social care, patient transport, public housing authorities and other bodies (eg utility companies) to ensure that the ventilated child can return to and remain at home as soon as possible.

4.3.2.2. We believe that both the software platform and the operating model can be extended to other patient cohorts, such as a sub-set of our adult intensive care patient population. This cohort of c.250 patients across both our adult ICUs, who typically have stays in ICU of >10 days, experience profound muscle weakness, neurological impairment; cognitive and psychological impacts, including post traumatic stress disorder (PTSD) and delirium. Treatment for these physical, psychological, social or emotional issues is often initiated within our hospitals but often is not continued at home, resulting in longer-term loss of employment and significant demands on primary and community care. We will therefore work over the next 2 years with the NW London critical care network and with CCGs to develop the software platform and the operating model to bridge the gap between our rehab team (Rehabilitation Physician, Occupational Therapist and Psychologist) and the relevant community services.

4.3.3. An information exchange

4.3.3.1. The planned developments in our clinical model described in section 4.2 above demands that we re-evaluate how to provide our patients (both those with long-term conditions and also ‘de novo’ patients) and their carers with access to holistic, emergent and elective communication and advice. In order that, for example, a patient with an acute exacerbation does not have to be admitted to his / her DGH via the A&E department to be stabilised before being transferred to our hospitals, he / she needs to be in contact with a clinician who is able to assess their needs, liaise with the on-duty ward consultant and where necessary arrange an urgent transfer to that ward. We also need to make it easier for referring cardiologists and physicians in our partner DGHs to ‘do business with us’ by offering them accessible and easy electronic (as well as telephone) elective referral routes.

4.3.3.2. To this end we are looking over the next 12 months to trial the concept of an ‘information exchange’ in three areas of clinical practice (our private practice outpatients department; our cardio-oncology service; and our adult domiciliary ventilation service) in order to determine what infrastructure (people, technology) we should look to establish to perform this role over the long-term, and also what other strategic as well as operational objectives can be achieved.

4.4. I&T development

4.4.1. Transform I&T Services - the Trust has recently approved and funded its I&T Strategy and 3 Year Plan, the main tenet of which is to "get the basics right" whilst developing a transformational Clinical IT Strategy. The 3 Year Plan includes the delivery of a number of major projects and organisational changes.

4.4.2. Over the next 3 years the Trust plans to implement a number of key projects to improve the performance and reliability of the IT infrastructure and introduce new/improved functionality in a number of clinical and administrative areas:

- Migration from XP to Windows 7 and the replacement/upgrade of over 2000 PCs
- Redesign and upgrade of our core and wireless networks
- Implementation of a Clinical Data Warehouse and advanced analytics capabilities
- Introduction of a new Electronic Prescribing and Medicines Administration (EPMA) system
- Introduction of an Electronic Document Management (EDM) solution for clinical records
- Replacement Patient Administration System (PAS)

4.4.3. The number of these major projects, coupled with the organisational change we are making, poses a risk in terms of the ability of our I&T teams to deliver. Similarly the new clinical systems will drive changes to working practice across the Trust and successful adoption by clinical and non-clinical users alike will be key to delivering the expected benefits. These risks are mitigated by the use of 3rd party experts to manage and augment the projects alongside representatives from the relevant user groups. In addition, governance has been established at both the Project and Programme level to monitor progress and provide oversight and issue resolution. Good communication will be key to ensuring buy-in and support and an I&T communications strategy has been developed and each project has its own communications plan.

4.4.4. Improving connectivity with our referrers: as part of system and infrastructure enhancements the Trust will enable remote access to its key systems in order to facilitate the timely sharing and exchange of clinical data and images between the Trust and its partners. The Trust will also implement new technologies significantly to improve real time collaboration with other parties (for example MDTs) including high definition video and team working and file sharing tools.

4.5. Optimising our strategic collaborations

4.5.1. <u>Proposed joint venture in paediatric services with Chelsea & Westminster</u>

4.5.1.1. Last year, the Chairmen and Chief Executives of our Trust and Chelsea and Westminster Hospital (C&W) signed a Memorandum of Understanding committing both organisations to explore a closer collaboration in services for children and young people and the creation of a 'Chelsea Children's Hospital Partnership', ideally with a co-location of both sets of paediatric services at Chelsea & Westminster Hospital. Both sides share a compelling vision of a joint venture that will:

- create a strong combination of expertise in maternal and children's health services;
- consolidate neonatal and paediatric intensive care facilities in one place with direct access to general and tertiary clinical care;
- exploit the potential academic benefits of joint working with a shared academic partner (Imperial College);
- build on the strong reputation each party already enjoys;
- create an attractive, modern, purpose-built environment for children of all ages and their families/carers;
- attract NHS and private patients from well beyond current referral and catchment areas.

4.5.1.2. Both Trusts are confident that a joint venture of this nature will also help deliver each organisation's strategic objectives, by building on existing working relationships and exploiting the potential synergies to develop a range and volume of services which neither Trust could achieve on its own. The joint venture would also free up inpatient ward space within Royal Brompton's Sydney Street site which could be reconfigured to provide additional capacity for other clinical services.

4.5.1.3. A Strategic Outline Case (SOC) with a clear clinical and strategic logic has been prepared and taken to both Trusts' Boards. Further work is under way which may form the basis of a Full Business Case and which more accurately will quantify the capital and revenue impacts of this joint venture, as well as determine the optimal basis through which its financial inputs and outputs would best be allocated and shared. A comprehensive risk register that builds on an earlier version within the SOC is being developed, including an identified set of interdependencies. We intend to present the results of the work to a joint Board-to-Board meeting in September this year: in terms of our current 5 year plan, however, no assumptions have been made in any of the years relating to any financial impact (capital expenditure or I&E) of this joint venture, given C&W's initial assessments about the timeframe to free up sufficient capacity on their site to accommodate our paediatric activities alongside theirs.

4.5.2. <u>ICMS – Institute of Cardiovascular Medicine & Science</u>

4.5.2.1. Our Trust's ICMS joint venture collaboration with Liverpool Heart & Chest Hospital has now been established for just under three years. We presented our 3 year strategic plan at the annual ICMS Board meeting in April, in which we identified three strategic priorities to be pursued over and above the 'day to day business' of developing joint research projects / studies and supporting one another in bringing new service developments 'to market':

i) <u>A joint data repository</u>: One of the factors that motivated our Trusts to set up ICMS was the recognition that both our Trusts treat the same cardiovascular diseases in the same types of patient, with the same treatment modalities and using very similar processes. To date we have not been able to exploit the commonality of our two sets of highly comparable patient and procedural data, other than on a very limited basis (eg agreeing priority fields to be completed in our respective devices databases). There however have been major changes over the past year to our two Trusts' IT architectures – the installation of a full electronic patient record at LHCH and the development of a clinical data warehouse at RB&H. We believe that it is timely to carry out an assessment of whether the two Trusts can now create a common ICMS data repository covering all three hospitals' cardiovascular patient cohorts, and if so, what might be the spectrum of different implementation options. The benefits could be significant, especially in terms of catalysing even more research and clinical audit collaborations between both Trusts. Both Trusts' clinical IT leads and CIOs will be meeting this summer to develop this spectrum of options.

ii) Partnerships with industry: over the past 18 months, some of the major device companies that supply both our Trusts have indicated that they wish to forge more strategic partnerships with a limited number of centres across UK and Europe, motivated by strategic considerations (eg a faster, more effective cycle to bring innovations to market, and surviving a consolidation in the number of suppliers by UK commissioners). Both our Trusts have seen evidence that these suppliers are willing to invest in, and to take a multi-year view of, these partnerships. We believe that our three hospitals under the ICMS banner could be of benefit to these suppliers especially in terms of helping them bring new innovation technologies more quickly to market – eg as a combined centre for first-in-man or early multi-centre trials. We could also deploy our joint faculty of clinical leaders and our respective simulation training facilities to 'proctor' and to provide training on behalf of these device companies to other centres' interventionists wishing to deploy these technologies. We believe that in order to facilitate this, these suppliers may be willing to invest in ICMS-branded educational fellowships and research projects.

iii) Education: we believe that an ICMS-badged programme of educational and training events and courses could potentially deliver benefits over and above each Trust's respective educational programmes for cardiovascular medicine. The benefits are likely to spring from the large joint faculty of cardiologists from both Trusts, which will both be a numerically greater resource from which to draw in terms of course development and course delivery, and also a broader source of more diverse expertise and sub-specialty subject matter. The ICMS's executive committee is developing an outline scope and structure of this joint ICMS-badged programme for submission as an update to the ICMS board in September.

4.5.2.2. Finally we have identified a number of principles within which these priorities should be pursued, namely that i) the ICMS should be as close to financially self-sustaining as possible (ie with only minimal or no ongoing funding top-ups from the two partner Trusts), ii) the membership of our executive committee should be broadened; iii) we should capitalise as much as possible on the imminent designation of Liverpool University being a second academic partner of the ICMS (alongside Imperial College).

4.6. Growing our private patient activities

4.6.1. The Trust's strategic plan is to increase the size of the Private Patient business across both sites, thus increasing the level of support to the Trust's NHS clinical activity, by focusing on complex, high-value activities across cardiothoracic surgery, cardiology and respiratory medicine in the UK and internationally. In line with our ambition stated in last year's annual plan to increase the number of outpatient locations, we have opened a jointly-branded clinic within a BUPA facility in the City of London. In order to obtain better access to those segments of the UK and international private patient market which are attracted to the 'cachet' of the Harley Street area, we are now looking to open an outpatient clinic on Wimpole Street in Q4 of this calendar year. We are likely to partner with another entity that will offer outpatient and diagnostic services in specialties that support our core cardiac and respiratory activities. During FY2015/16 we intend to

occupy additional space in order to install two diagnostic scanners, for which we will be able to call upon the existing physics and reporting expertise at Royal Brompton by way of support. We will also continue scaling up our marketing and business development activities that are targeted both at GPs in the geographical catchment areas around our two hospitals and also at our international referrers.

4.7. Strategic service developments

4.7.1. Clinical genetics

4.7.1.1. One of the cross-cutting scientific key themes of our cardiovascular Biomedical Research Unit (cvBRU) has been genetics & genomics, focusing on inherited cardiac conditions and in particular cardiomyopathies. This research has benefited from the steady growth over the past four years of the Trust's inherited cardiac condition (ICC) services – c.600 new ICC patients were seen in outpatient clinics in FY13/14 (and a business plan to expand these services further has already been approved).

4.7.1.2. In December 2012, the cBRU was awarded a substantial (£1.8m) Health Innovation Challenge Fund (HICF) grant for the purpose of developing a clinical genetics testing service out of the cvBRU's research genetics theme, focused on cardiomyopathies in particular and inherited cardiac conditions (ICCs) as a whole. In December 2013, the Trust completed a £700k refurbishment of laboratory space at Royal Brompton in which the Clinical Genetics Laboratory is now based. Alongside operational planning aimed at obtaining UCAS accreditation for the Laboratory, we have developed a 5 year strategic plan for a clinical service that will initially focus on testing patients (private and NHS) referred from the Trust's own ICC clinics, using a custom-designed panel and next-generation sequencing techniques. Within 1-2 years after accreditation, we will then look to initiate testing for inherited respiratory conditions (IRC), while continuing to broaden the offering of our testing (eg potentially to provide tests for the FH (familial hypercholesterolaemia) service at Harefield).

4.7.1.3. We believe this service (allied to the research activity around it) will confer a number of clinical and strategic benefits. Firstly, genetic testing not only will 'round out' and complete a 'full house' of diagnostic tests for ICC and IRC patients, but it may also contribute to clinical decision-making regarding treatment / therapy (ie whether to prescribe a particular medication or to implant a device). Secondly, it is likely to lead to more ICC and IRC patients to be referred to our Trust. Finally, it supports the cases of our two BRUs for having their NIHR funding renewed in 2017 by demonstrating a clear example of research activity being translated into a clinical service. Set against these benefits is the risk that this service's specialty focus (ie inherited cardiac and respiratory conditions) only partially fits with the outline specification for the specialist commissioning of Genetic & Genomic services for England published at the end of April.

4.7.2. Respiratory services at Harefield

4.7.2.1. During FY13/14, we have developed a 2 year plan to develop respiratory services at our Harefield site. In particular it identifies the need for partnership working with Hillingdon Hospital, for collaboration with RBH services and for

the development of niche services for the local and wider population. Key to this development will be changing the currently fragmented workforce structure into a cohesive team with a clear strategic direction for future service developments.

4.7.2.2. There are three areas of service development within this plan – firstly, the growth of established services (such as sleep, domestic ventilation, and pulmonary rehabilitation); secondly, the extension of services that deliver pathways currently based at Royal Brompton for patients local to the North West Home Counties (such as asthma, interstitial lung disease, occupational medicine); and thirdly, the launch of new services (pleural disease and an admission prevention service). To support these service developments, there is a clear need for overnight / short stay beds (to be provided within the old thoracic theatres' areas in FY15/16 – see section 4.1.3.3): although some of these developments could be started with increased access to the day case unit, most require overnight facilities with the respective medical and nursing cover in place.

4.7.2.3. We believe that these service developments will strengthen the model of delivering respiratory clinical pathways across the organisation; will allow patients to access high quality specialist services but in a more local setting, which will improve the patient experience, as well as add to the reputation of the Harefield site; and can release capacity on the constrained Fulham Road site.

4.8. Future-proofing our research activities

4.8.1. One of the four objectives for the 2012-2015 Board-approved Research Strategy is to "Exploit opportunities to attract and retain research funding". Since 09/10, the Trust has increased it research income by >50% to £11.7m (in 2013/14). This has been achieved both through increased funding for our Biomedical Research Units (2012-17) and increased project income primarily from grant funding agencies but also the commercial sector. As we identified in our Annual Plan last year, the set-up and delivery of studies in order to develop sustained "preferred" partner relationships with industry is likely to remain of critical importance, alongside the retention of public sector funding linked to delivery metrics.

4.8.2. With a recent awayday involving all research-active clinicians and fellows across the Trust acting as a catalyst, we are currently revising our research vision and priorities for incorporation into the 2015-2018 Research Strategy. We expect this Strategy to reflect the changes to the clinical strategy (and also structures and processes) outlined in sections 4.2 and 4.3 above, the impact of the ongoing implementation of the Corporate Data Warehouse and genetics services on patient cohort assembly and other aspects of research activity, and the evolving national research funding environment.