

Research & Development Strategy

2012 - 2022

Date issued:

Review date:

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Approved by: R&D Management Committee

1. Introduction

- 1.1 Brighton & Sussex University Hospitals Trust (BSUH) and Brighton & Sussex Medical School (BSMS) are now established amongst the top teaching hospitals and medical schools in England. Since inauguration in 2003 we have developed a strong set of clinical research programmes with a focus on Experimental Cancer Medicine, and Ageing Research (with specific interest in immunology, inflammation, infectious disease, cardiovascular disease and dementia and neurodegenerative disorders).
- 1.2 Our vision for the next 10 years is to continue our development as the leading academic health centre in South East England. The 3Ts development offers us a unique chance to build on our existing strong research profiles. The new facilities will offer opportunities to develop new strands to our research portfolio and provide research patients with a more holistic experience due to the centralisation and expansion of clinical and diagnostic services on one site.
- 1.3 Through this strategy we will promote and develop greater collaborative working within Brighton and Sussex; providing leadership in undertaking translational research, research governance and management across the region. With our academic and clinical partners we will form an Academic Health Sciences Network across Brighton and Sussex to deliver high quality research for the betterment of the regional population and health of the nation.
- 1.4 The strategy sets out our short term goals for the next 0 - 5 years and long term aims for the following 5 - 10 years. In doing this we have sought to support the goals and embrace the opportunities set out in the Government's *Plan for Growth and Strategy for UK Life Sciences*.

2. Research at BSUH & BSMS

- 2.1 BSMS and BSUH has been built on strong foundations in respect of health and medical education, and research, networks and infrastructure. Our aim was to develop those areas of biomedical and clinical research which offer strengths within the local health economy and Universities of Brighton and Sussex (HIV, Cancer, Behavioural Medicine and Neuroscience Infection and Inflammation, Elderly Care, Stroke Medicine and Cardiovascular Disease).
- 2.2 In parallel we have developed collaborations and strategic partnerships with Brighton and Sussex Universities as well as the neighbouring NHS Trusts. Importantly we have formed a strategic alliance with Barts and the London NHS Trust to secure Experimental Cancer Medicine Status.
- 2.3 In the 10 years since inauguration a coherent set of research programmes that map onto local and national priorities have been developed. Through engagement with research networks and academic centres the portfolio of research projects and clinical trials ongoing in the Trust continues to increase in number year on year.

2.4 The next phase of our strategy is to further develop the infrastructure required to expand the scope of our research by embracing new areas of clinical need for the ageing, and refining our translational research programmes.

3.0 Our Strategic Aims

3.1 From individual patient and public health perspectives, it is widely recognised that clinical research brings benefits to the patients in our care. Beyond this a thriving and successful research programme demonstrates that the organisation has a progressive culture of innovation.

3.2 Whilst much has been achieved in the Trust to date, across several fields of medical and surgical practice, there are still challenges to address in order for the organisation to produce outputs comparable to the long established teaching hospitals. Our overarching goal over the next ten years is to be making a step change and become recognised as a research centre of excellence, operating at an international level. In support of this goal we have set a 10 point plan for delivery in 2014-15.

- Maintain a mixed portfolio of research with a combination of commercial, NIHR charity, research council and other funding bases.
- Work closely with our established academic and clinical partners to expand the existing portfolio, and also to develop new collaborative relationships with other regional and national Higher Education Institutions (HEI's) and other providers within the local health economy.
- Increase our portfolio of network studies where possible, in line with the Kent Surrey & Sussex local Clinical Research Network (KSS LCRN) recommendations.
- Encourage Trust Clinicians to take up clinical leadership positions in the new LCRN structures (e.g. at divisional and speciality level).
- Reinvest research income to match external funding and to help facilitate the appointment of clinical research fellows, NIHR trainees and clinical lectures to provide clinical support for intensive studies run Brighton NIHR CRF (CIRU). We will draw on the KSS SpR training pool, participants in the new BSMS masters programmes and more widely.
- In relation to speciality-specific activity:
 - a) Continue to build on our existing areas of clinical strengths – e.g. Cancer, Cardiology, Infection, HIV, Paediatrics and Rheumatology in the Trust but also explore, with input from the Medical School Director of Research in particular new areas which may be in some cases may be cross-speciality in nature – e.g. medical informatics and integrated health care.
 - b) Ensure that 'new' potential PI's engage with the R&D Department at an early stage, set realistic targets for patient recruitment, and recognise clearly the governance and regulatory responsibilities associated with this.
 - c) Ensure that we meet the ever tighter, temporal targets for recruitment to NIHR sponsored studies, particularly as it is clear that from 2015-2016, there may be financial penalties associated with failure in this domain.
 - d) Increase 'research' SPA's across the organisation, defining specific deliverables for investigators.
 - e) Develop (initially within LCRN Division 5) the 'patient identification centre' model in partnership with other acute trusts and primary and community care

providers. This will be necessary in many cases to mitigate some of the upcoming effects of commissioning changes with expansion in the range of regional providers or specialist services (e.g. in Dermatology & Rheumatology), and move away from secondary care provision.

- f) That the research leads and relevant Trust managers prioritise attendance at R&D Management meetings and training activities, in particular GCP training.
 - g) Engage with the local Academic Health Science Network as and when its real role becomes clearer, on targeted research themes such as Dementia.
- Ensure that the R&D Director and relevant members of the management team are involved in early stage in the consideration of service configuration or human resources planning activities which, have the potential to impinge on the Trust's research capacity and delivery.
 - Provide support and incentives to help develop Trust clinicians and AHP's as new Principal Investigators (PIs) through working closely with the regional Research Design Service to continue to provide research training and project development.
 - Increase Brighton NIHR CRF (CIRU) activity by at least 15% in the next year, ensuring that we meet the contractual requirements of NIHR funding by developing a broader research portfolio:
 - Taking of early phase studies and experimental medicine studies
 - Broadening the scope of work we undertake
 - Securing more complex interventional work which may require overnight stays
 - Establishing a key relationship with an industrial partner to develop business and research opportunities
 - To consolidate our position as medical research leaders within the region we plan, with our local academic partners to set up a Clinical Trials unit (CTU), with a view to seeking provisional NIHR accreditation at the next opportunity in Spring 2015.

4.0 How we will achieve our objectives

Capacity Development

- 4.1 We have set an objective to increase occupancy and recruitment rates. To achieve this we will continue to grow and build our clinical support team of nurses and allied health professionals by securing increased levels of investment through competitive funding sources, commercial collaborations and networks.
- 4.2 As new developments within the hospital, such as the Major Trauma Centre, come on line we will pump prime research support and build teams to ensure that research will be integrated into the core business of the clinical team.
- 4.3 We will also invest in areas where new clinical academic appointments are made to ensure that research is promoted and supported across the widest range of services.
- 4.4 We will work to identify areas that require enhanced infrastructure to improve research performance and develop specific initiatives that will aid individual research teams to meet their planned objectives.

4.5 Demonstrate our commitment to research excellence through training, assessment and continuous development and improvement by providing adequate funding and fair access to opportunities.

Develop Governance Systems and Trial Management Support Teams

4.6 We will develop our existing governance and trial management support teams to facilitate the safe, efficient and fast delivery of clinical research projects.

4.7 We will work with neighbouring NHS Trusts and the Sussex Research Consortium to streamline processes and improve set up times for research projects thus making this an attractive site to locate research.

4.8 We will formalise governance, sponsorship and contractual arrangements between the Trust, Medical School and Universities of Brighton and Sussex by creating a joint research office for health.

Develop Partnerships

4.9 There is a natural leadership role for Brighton in delivering excellence in healthcare research in the South East. We believe that there are and will be considerable opportunities to build on recent achievements such as the award of CRF and ECMC status. Working with our local partners we will lead bids to secure strategic funds as opportunities arise.

4.10 It is our strategy to lead and develop partnerships within Sussex that span the HEIs and Trusts, including PCTs to enable better research translation. Importantly we will increase opportunities for patients across Sussex to engage in research and gain therapeutic benefits from trials by developing an innovative Hub and Spoke. We will work with local Trusts across Sussex to develop systems that will easily facilitate the entry of patients registered with other Trusts into trials for Cancer, Dementia, Rheumatology, and Respiratory and Inflammatory disease.

4.11 We recognise the need to strengthen links across the sector to provide a focus on the local population that it serves, particularly in developing research programmes that address local needs of an ageing population. It anticipated that focus of this work will form the basis of the emerging Academic Health Sciences Network.

4.12 The importance of collaborating closely with our local networks will be central to sustaining growth and generating grants through the various national funding schemes. As lead Trust for the Sussex Cancer Network and in its capacity as partner of the Medicines for Children's, DenDRON and Stroke networks we will work to reinforce the strong relationships that have led to increased activity and patient engagement across the board.

4.13 We will set out to develop a multidisciplinary research agenda over the next 5 years. The largest section of our workforce is made up of Nursing, Midwifery

and Allied Health Professions. Research is however, largely the domain of medics. We have previously supported nursing PhD fellowships. We will align ourselves with our HEI partners to support the development of research programmes led by this staff group and our clinical scientists and Technical staff.

- 4.14 We will maximise opportunities for neighbouring Trusts to participate in our own studies by setting in place agreements and harmonising governance arrangements to facilitate the rapid adoption of projects.
- 4.15 We will engage at a national level with established biomedical centres and units to maximise opportunities to participate in cutting edge research to the benefit of the ageing population. We will work in partnership with relevant centres to support the development of projects originating from our own Ageing Research Centre.

Delivering Quality Research through Support, Training & Career Development

- 4.16 We will provide the necessary resources to ensure that the workforce is sufficiently trained to deliver high quality patient focused research. We will enhance the level of support on offer for staff from all professions wishing to engage in research activity. Through this process we will increase the volume and range of training opportunities available to staff to advance Good Clinical Practice, research knowledge and understanding to drive up quality, success and maximise benefits for patients.
- 4.17 We will continue to jointly invest with the Research Design Services in support staff posts for areas such as research design, statistics and health economics.
- 4.18 We will invest profits and surplus income from contractual research projects to support the CIRU PhD programme for medical and nursing staff. Alongside this we will seek and secure competitive funding for clinical fellowships.

Infrastructure

- 4.19 We will seek the necessary resources to develop effective clinical trials management facilities, and formally establish a registered Clinical Trials Unit in Brighton.
- 4.20 We will appropriately invest in patient databases, and management and information systems for clinical research to enhance patient identification and improve recruitment times for trials.

Patient Public Involvement

- 4.21 We set in place a strategy for effective and meaningful Patient and Public Involvement in Research by 2013.
- 4.22 We will provide the necessary financial support to enable participants to attend fora and effectively administer the programme.

Enhanced Clinical Research Facilities for Experimental Medicine

- 6.1 The NHS and DH, along with many other research funders, place a high priority on research which most easily translates into improved practice, treatment resulting in improvement in outcome and changes in practice.
- 6.2 Undertaking translational research, including producing the final evidence base and communicating the related change, has to figure highly in the R&D strategy. BSMS and BSUH working together have demonstrated their commitment to both clinical and basic research. This has become a vital part of the Trust's growing success story. Much of the growth has focused around the Clinical Research Facility (CIRU) which has provided a platform to develop the early phase trial portfolio and facilitate research not deliverable in the clinical setting.
- 6.3 The 3Ts development will enable much of the standard treatment element of research to be relocated in the clinical setting. This will free up space in the new CIRU to allow efforts to concentrate more precisely on experimental medicine activities requiring overnight in-patient stays and extensive investigations, such as phase 1 and 2 studies. With the addition of co-located large medical school laboratories and analytical platforms, the CIRU will be well placed to support a wider range of early phase trials.

Developing the ECMC capabilities

- 6.4 Both BSUH and BSMS recognise the importance of developing a reputation for excellence in a number of key areas. We have already begun the process of developing that reputation as a centre of excellence, through the Experimental Cancer Medicines Centre and our portfolio of projects. However, the current provision of services across 3 sites for breast cancer provides an example of the logistical difficulties of running ground breaking trials and experimental projects. Multi site working also adds to the cost of delivery which impacts on competitiveness when competing for grants and contracts. Matters are further complicated by the need to refer patients to external sites when they require MRI or PET CT scans.
- 6.5 The new oncology and imaging one stop service will greatly enhance the ability to deliver some of the complex trials that are emerging in cancer medicine. The unit is also situated adjacent to the new CIRU and research laboratories. This will ensure that tissue acquisition and processing can be done seamlessly.
- 6.6 Importantly these developments offer much greater benefits for patients through wider access to clinical trials that can be conducted on one site.

Service co-location

- 6.7 The co-location of certain services on one site will offer dividends to R&D. Stroke and neurosciences are key components of our strategy and that of the Comprehensive Local Research Network. With stroke and neurosciences

facilities currently split across sites the range of research that can be developed at BSUH is limited. The formulation of an Acute Brain Injury Centre along with shared rehab facilities opens up opportunities to develop collaborations with major UK centers such as UCL and St Georges to undertake research aimed at improving the acute treatment and secondary prevention of stroke and other neurological conditions.

Linking Research with New Services & Pathways

- 6.8 Infectious Diseases (ID) Research is pivotal to the BSMS & BSUH research strategy. We have developed a strong programme of research focusing on immune systems and how they fight infectious diseases such as the bacterial causes of sepsis, hospital acquired infections, sexually-transmitted diseases, viral hepatitis and tuberculosis.
- 6.9 It is widely reported that pivotal trials to test new infectious disease (ID) therapies are increasingly difficult to undertake, with challenges that include the difficulty of recruiting specific types of investigators and patients needed for infectious disease trials – especially for serious infections that must be treated in a specialist hospital setting. Without a specialist set up, ID therapies can be difficult and expensive to develop. The Clinical Infections Service (CIS) developed as part of 3Ts will bring together HIV with Infectious Diseases to form a new department that will provide the specialist facilities required to partner commercial companies working on therapeutic developments for ID. The development of this new service pathway comprising 13 outpatients' examination rooms, Pharmacy Dispensary, Pre-admission unit and a 24 bed isolation ward of single rooms, offers unique opportunities to develop this research programme and develop strong partnerships with industry to test new therapies.

Integrated facilities for Neurology Research

- 6.10 The Government has placed a high priority on dementia research and BSUH is an active participant in the South Coast Dementia and Neurodegenerative Disease Research Network. The research portfolio in this area had grown significantly in the past few years, focusing on the delivery on early phase trials in Alzheimer's and MS. As many of these trials involve the delivery of novel drugs over several hours there are capacity issues within the hospital that limit the number of trials that can be undertaken at any one time. The Neurology Planned Investigations Unit will provide a new setting for day case activity (e.g. infusions) and co-ordinating research investigations (e.g. Neurophysiology, Neuro-imaging, lumbar punctures, etc).
- 6.11 As the disease burden grows there will be a call for more inpatients studies. Increased inpatient capacity for dementia patients in a specialist unit provides BSUH with a unique opportunity to develop and support both commercial and academic research that offers benefits to patients hospitalised with degenerative diseases.

Diagnostic Facilities to Support Research

- 6.12 The new diagnostic facilities offered within the 3Ts development will enhance an already vibrant cross-disciplinary programme of imaging research at BSMS & BSUH supported through PET and MRI facilities at the Clinical Imaging

Sciences Centre and Nuclear Medicine at the Royal Sussex County Hospital (RSCH).

- 6.13 Rapid access to diagnostic imaging facilities is critical to enable many trials to be conducted and evaluated effectively. It is recognised nationally that rapid access to imaging facilities is a block to the timely completion of research in the UK. This is certainly the case at RSCH. Current limitations within the hospital result in patients being referred to diagnostic centres off site. This limits the breath of clinical trial opportunities on offer to patients, particularly those that are acutely unwell and cannot be safely transported off site.
- 6.14 Pivotal to this research strategy is the development of an early phase trials portfolio in cancer, inflammatory disease and dementia. 3Ts will offer wider access to diagnostics for research and clinical trials for these patient groups. Seamless clinical services aligned with on site diagnostics will also ensure the Trust remains attractive to commercial research sponsors and grant funding bodies by demonstrating an ability to deliver projects to time and target on one site.
- 6.15 Improved hot and cold imaging and access to CT facilities in situations such as critical care will further enhance opportunities to offer acutely ill in-patients opportunities to engage in research studies that are logistically impossible to support with the current infrastructure.

Training Facilities

- 6.16 In order to stimulate sustained growth within the research workforce we have placed a large emphasis on enthusing students and junior staff to become researchers of the future. A core component of our research strategy rests around the development of training to facilitate this process by supporting the 4th year medical students, those on the academic training pathway and postgraduate degree students.
- 6.17 The simulation suite, surgical skills labs and additional teaching and meeting suite will enable us to increase the volume and frequencies of research training delivered.