



DEPARTMENT OF HEALTH DESIGNATED ACADEMIC HEALTH SCIENCE CENTRE (AHSC)

2015/16 ANNUAL REPORT

Note: Please note this form should be completed in font no smaller than 10-point Arial.

1. ACADEMIC HEALTH SCIENCE CENTRE DETAILS

Name of the Department of Health Academic Health Science Centre:

Cambridge University Health Partners

Contact details of the DHAHSC lead to whom any queries and feedback on this Annual Report will be referred:

Name: Professor Patrick Maxwell

Job Title: Executive Director, CUHP

Address: University of Cambridge, Box 111, Cambridge Biomedical Campus, Cambridge CB2 0SP

E-mail: Regius@medschl.cam.ac.uk

Tel: +44 (0) 1223 336738

2. OVERVIEW OF ACTIVITIES (no more than 4 pages)

Please provide a brief overview of activities for your AHSC for 2015/16 financial year, addressing the following points:

- **SECTION ONE - progress with further aligning the strategic objectives of the NHS provider(s) and university(ies) in order to harness and integrate world-class research, excellence in health education and excellence in patient care;**

Over the past year, CUHP has made further progress in strategically aligning the core partners to realise the ambition of becoming a global centre of excellence for patient care, healthcare education and research. CUHP has developed its capacity as a catalyst and facilitator to enhance co-operation across all three sectors of industry, academia, and the NHS on the Cambridge Biomedical Campus (CBC). The main focus remains on co-ordinating the partnership across six main workstreams, as outlined in the application of 2013:

- supporting translational research
- educating and training tomorrow's workforce
- development of the Cambridge Biomedical Campus
- service innovation and improvement
- medical informatics
- philanthropy

Under the leadership of the Board, CUHP has strengthened its central Management Office, resulting in a stronger managing and governance structure. This has helped to make further progress in aligning the partners across the six workstreams, as summarised in the next four Sections, with additional information provided in the ANNEX.

CUHP's translational research workstream has been dominated by the upcoming renewal of the Biomedical Research Centre (BRC), the key vehicle for translational research across CUHP. The main feature of the proposed BRC programme is the significantly increased integration of research activities across the four core partners of CUHP. The proposal builds on the past successes of the BRC, resulting in some significant developments. New themes have been established: Antimicrobial Resistance and Nutrition, Diet & Lifestyle, as well as Gastrointestinal Disease. Other topics have been combined creating wider cross-cutting research themes such as Cardiovascular & Respiratory Diseases, Population & Quantitative Sciences, and Woman's Health & Paediatrics. Neuroscience, Dementia, and Mental Health have been organised into an integrated Brain and Mind Health super-theme. Following the successful submission of the Pre-Qualifying

Questionnaire, a full proposal has been invited (more information on workstream see ANNEX).

- **SECTION TWO - a summary of the progress against the specific short, medium and long-term objectives as detailed in your full stage application, and a brief summary of progress made in each of the approved themes/work programmes for the AHSC as detailed in the full application;**

Short term: 1-2 years – we will have developed a new master plan to develop the campus over the next 20 years as an integrated hub for healthcare, research, education and wealth creation. We will have made major progress toward full electronic patient records, increased our capability to interface complex datasets and developed an eLearning platform.

i) The campus masterplan and the campus development workstream: The CBC Strategy Board was launched successfully in 2015. The Chair, Baroness Helene Hayman, was appointed, and the Vision Statement and Terms of Reference were agreed. The CBC has agreed on joint branding, and a new logo for the campus has been developed. CUHP's long-term vision for 2040 has been agreed in principle, and we are in the process of formulating a joint strategy for the development of the CBC site. The developers (Liberty and Countryside) have applied for planning permission for Phase 2 of the campus development (14 acres) with results expected on 1 June 2016. The University of Cambridge will lead on a masterplan study for key sites at the Hills Road end of the campus later this Financial Year. Construction of the "Capella" building started in September 2015. The recent decision to proceed with "The Forum" on the campus is a major step forward and will offer a range of much-needed central services, including a state-of-the-art training and conference facility, as well as a hotel and private clinical facilities. CUHP has increased its capacity to coordinate Travel, Transport, and Sustainability, as well as Amenities, which enhances the collaboration between all co-located organisations on the site. This is a major step towards achieving the goal of creating a world-leading centre of biomedical research. CUHP, on behalf of the CBC Strategy Board, continues to coordinate the work with the City, District, and County Councils, as well as with other relevant stakeholders such as Cambridge Ahead, especially on issues of affordable housing, transport, and amenities. Launched in April 2015, the City Deal provides an initial £100m to be invested in the transport infrastructure, housing, and skills needed to facilitate future economic growth, with potentially more funding available for the second phase thereafter.

ii) Implementation of an Electronic Patient Record: Significant progress has been made, and CUH has recently reached Stage 6 status, as tracked by the Healthcare Information and Management Systems Society, which puts us at the forefront of Electronic Patient Record implementation (Section 5 and ANNEX).

iii) Education including eLearning platform: CUHP is continuing to develop its multi-professional education portfolio, including a virtual infrastructure of high quality eLearning resources to address our diverse community's needs. The current eLearning platform (<http://elearning.cam-pgmc.ac.uk>) has been jointly developed by CUHP and Cambridge University Hospitals Postgraduate Medical Centre (see ANNEX).

Medium Term: In 2-3 years we will have developed detailed plans and embarked on new fundraising campaigns probably including a 'Brain Village' which will span Neurosciences and Mental Health, a state-of-the-art comprehensive clinical cancer centre, and a new hub catalysing our strengths across public health and population science.

CUHP's fundraising portfolio is managed by the newly-established post of Director of Development, CUHP, to manage fundraising programmes in medicine and medically-related priorities. This post is fully integrated with the Cambridge University Development Office. CUHP is focused on resourcing capital development and programmatic support for key priority areas, and is currently recruiting staff to develop the necessary capacity to reach the defined fund-raising targets. The CUHP development programme, in close collaboration with the Addenbrooke's Charitable Trust (ACT), will continue to expand during 2016. Geographically CUHP targeted the UK, Asia and USA markets for transformative philanthropic opportunities (>£5m) during the last six months (see ANNEX). As part of the University's Campaign for Collegiate Cambridge, the CUHP development unit has undertaken to fundraise in excess of £500m in support of CUHP and University health-related development priorities, in particular:

i) Clinical Cancer Research Centre: A major Cancer Centre Award from CRUK has been secured, and CUHP is now embarking on a major fund-raising initiative to raise £180m for a state-of-the-art research cancer hospital, and to support programmes in areas such as the early detection of cancer.

ii) Brain Village: Considerable investments of more than £25m for the imaging infrastructure have been made, including 7T MRI and PET-MR equipment, as well as radio-pharmacy. Combined with a better alignment between clinical service and biomedical research, these developments are crucial to realise the "Brain Village". Neuroscience, Neurodegenerative Disorders, and Mental Health will be combined into the

super-theme, “Brain and Mind Health” under the bid for BRC renewal.

Long term: In 4-5 years AstraZeneca and Papworth Hospital will be fully integrated into the Cambridge Biomedical Campus. There will have been a step-change in research collaborations with industry, and the Campus will be a thriving hub for biomedical innovation with a well-developed enterprise culture. The individual organisations will be porous, with extensive sharing of data, ideas and educational resources.

The two key developments of the CBC, the moves of AstraZeneca (AZ) and Papworth Hospital to the site, are progressing well. Construction on all building sites on the campus is on schedule, and it is anticipated both organisations will be fully functional within the planned timeframe. The interactions between organisations on the CBC Strategy Board (see also SECTION FIVE), and the Campus Delivery Group in particular, both sponsored and managed by CUHP, have forged much closer collaborations across all partners co-located on the campus and beyond.

The CBC is currently entering phase 2 of its development, with an application for planning permission for an additional 14 acres, earmarked to extend the campus. CUHP is working with all relevant parties, including the developers, to shape the future composition of co-located organisations on the CBC. The site will be used by a mixture of public and private institutions, with Abcam plc. already expressing an interest to move to the site.

- **SECTION THREE - summary of the AHSC’s contribution to economic growth and the economy, including through partnerships with industry;**

i) CUHP contribution to economic growth: The Cambridge cluster consists of about 1,600 technology companies employing just under 60,000 people, with a combined turnover of £13bn. As biomedicine is a crucial and vibrant aspect of the cluster’s success, CUHP is well placed to capitalise on existing industrial partnerships, stimulate new approaches to collaboration, and help generate new high-value enterprises.

In a recent report*, commissioned to assess the impact of the Cambridge bioscience sector on the economic development of the region, it was estimated the bioscience cluster with close to 200 companies in the region was responsible for about 13,800 jobs spread across 18 science parks (or sub-clusters) and £907m in gross value added (GVA), even before the arrival of AZ. This contribution is well above the national average of the UK. The sector has also significant indirect and induced effects across the whole of the UK economy, with just under 6,000 employees and over £310m in real GVA (figures for 2013): “Each hundred Bioscience jobs result in 80 new jobs created in other sectors, and for every £100 in value added generated by Bioscience there is another £69 generated elsewhere in the economy”.

Importantly it was noted the CBC was one of the three most significant sub-clusters. The other two were Cambridge Science Park and the Babraham Research Campus. As the CBC is still developing, it is expected to play an even more important role in the success of the Cambridge Cluster in the future.

The growth of the campus will exert additional stress on affordable housing and transport, identified as the two biggest constraints to the growth potential of the cluster. CUHP continues to play a key role in developing the investment agenda for local infrastructure. We work with and on behalf of the CUHP partners to shape the policies and decisions on the wider development of Cambridge, as part of the City Deal, to invest in the region’s future. (*The Cambridge Bioscience Impact Assessment Study, October 2015, NIHR BRC Cambridge.)

ii) Partnership with industry: The CUHP Office for Translational Research, established to manage these partnerships, has an industry-partnering and translational research remit for the human health community. It works with its sister unit, the BioScience Impact Team, and a network of research, development and knowledge transfer professionals across the wider University and Hospitals. Maintaining and developing partnerships with industry are key priorities for CUHP. Partnership with industry takes many forms, ranging from consultancy (e.g. via acting on Scientific Advisory Boards), contract, and collaborative research, material and data exchange, to licensing. CUHP is extremely active in all of the above areas. Research collaborations are thriving and steadily growing: Under the CUHP umbrella there are currently about 450 live collaborative projects with Industry [University of Cambridge: 169 Collaborations; NHS Partners: 283 (201 Commercial, 82 Collaborative)]. So far, just under £100m has been secured for partnerships with industry. In order to engage more effectively with the wider community of technology firms of the Cambridge Cluster, especially on Biotechnology and Digital Health, CUHP is collaborating with relevant Networks, including Cambridge Wireless, OneNucleus, and Cambridge Network.

iii) Knowledge Transfer: CUHP is served by two technology transfer organisations, Cambridge Enterprise (CE) and Health Enterprise East (HEE). These organisations work closely together, and have agreements in place to ensure both University and NHS staff have access to effective technology transfer services. In recent years, CE has established a number of companies based on research activities of the partners. Notable

amongst these has been XO1, which was established to develop a completely novel antibody anticoagulant that was developed by University and CUH staff, which was acquired by Janssen Pharmaceuticals in March 2015. In the 12 months to March 2016, CE has filed 19 patent applications and concluded 28 licence agreements relating to work by the Partners. To date HEE has concluded over 125 licence agreements and established a number of companies based on innovation from member NHS organisations. Notable amongst these is Northwood Medical Innovations Ltd, which was established to develop a medical technology called Earfold for the correction of prominent ears. Northwood Medical Innovations was acquired by Allergan plc in November 2015.

In addition, CUHP has established a multi-partner Innovation Hub, involving CE and HEE and the Judge Business School, to support researchers and clinicians through small start-up grants (for proof of principle) and mentoring. One of the award holders has successfully applied for further Small Business Research Initiative funding to develop a “Support Tool for Managing Patient Flow in Emergency Departments”.

- **SECTION FOUR - progress on the development and delivery of an appropriate e-Health informatics platform;**

Since 2005, Healthcare Information and Management Systems Society (HIMSS) Analytics' Electronic Medical Records (EMR) Adoption Model (EMRAM) has tracked the adoption of EMR applications within hospitals and health systems across the globe. Institutions work to complete the 8 stages (0 - 7), with the goal of reaching Stage 7, an environment where paper charts are no longer used. CUH has recently achieved Stage 6 status with the implementation of Epic Electronic Health Record (EPR). HIMSS Stage 6 hospitals and clinics are at the forefront of EPR adoption, and achieving Stage 6 is an important indicator that an organisation delivers high quality patient care with an interoperable electronic health record in place. Stage 6 institutions also have established clear goals for improving safety, minimizing errors, and prioritizing IT implementations. Cambridge Clinical Informatics (CCI) has developed health informatics, data mining, 'big data' in medicine, and precision medicine activities for the past 18 months. In this time, CUH has developed essential infrastructure required to underpin secure, appropriate, ethical, and legal access to eHospital data for research in both anonymous and pseudonymised linked form. This has established the framework and infrastructure for a novel registry to bring patients and researchers closer together, for more inclusive recruitment into research studies (see ANNEX). CUHP has further developed its strategic partnership with the EBI at the Hinxtion Campus, following a retreat in October 2015. This collaboration will include joint projects, building on the existing 'Cambridge Computational Biomedical Postdoctoral Fellowships'. In addition, the University of Cambridge has established a Strategic Research Initiative on Big Data across its six Schools, and is one of the founding members of the Alan Turing Institute, officially launched in November 2015.

- **SECTION FIVE - an overview of any significant developments or issues associated with the leadership, strategy and governance arrangements which might impact on the delivery of the aims and objectives of your AHSC.**

Over the last year, CUHP has invested in the expansion of its operations. In August 2015, a new Chief Operating Officer was appointed, and the Management Office (MO) has been strengthened by recruiting a number of full-time appointments. CUHP has increased its communications operation to develop a new CUHP website and e-Newsletter, creating a central information hub for the wider research and care communities. One of the central functions of the MO is to catalyse and facilitate collaborations across the three sectors of industry, academia, and the NHS, to increase CUHP's capacity to transform scientific advances into tangible benefits for patients and the wider economy. CUHP has started a new initiative to bring a diverse range of Patient & Public Involvement (PPI) and Engagement (PPE) across all partner organisations together, co-ordinated by the MO (see ANNEX for more details). In addition, CUHP is working with partners on the campus and beyond, providing opportunities through events and workshops for researchers from industry, academia, and clinicians to network, with the aim to foster new collaborations across institutional boundaries. CUHP is currently in the process of appointing a new Chief Executive, who will be entirely dedicated to the organisation and its strategic vision for the future. As mentioned above, CUHP has established a CBC Strategy Board, which involves all major organisations co-located on the campus. This includes Astra Zeneca, GSK, MRC (notably the Laboratory of Molecular Medicine), CRUK CI, and NHS Blood & Transplant. The aim is to develop a joint vision for the campus in the wider context of Cambridge's southern fringe, and to establish a framework for future collaborations between these organisations, once they are fully established on the campus.

Collaboration with the Eastern Academic Health Sciences Network (EAHSN): EAHSN has recently recruited a new Managing Director, Dr Stephen Feast, as well as a new chair, Elizabeth Buggins. CUHP and EAHSN are currently developing their strategic alliance, involving the “Collaboration for Leadership in Applied Health Research & Care - East of England” to collaborate on Service Innovation & Improvement.

This form must be submitted, by e-mail, no later than **1pm Friday 6 May 2016** to Jasmine Parkinson (jasmine.parkinson@nihr.ac.uk). Please feel free to provide any other information you wish (in a separate annex) that demonstrates the progress made with your AHSC in 2015/16.

The Annual Report aims to capture progress against the stated objectives, specific themes and work programmes as set out in your application, in order for the Department of Health to be able to understand the overall progress of the AHSCs. However, please note that we will not be providing feedback on the AHSC Annual Reports.

A signed copy of this report should be sent no later than **13 May 2016**, to:

Dr Jasmine Parkinson
NIHR Central Commissioning Facility
Grange House
15 Church Street
Twickenham TW1 3NL