

**Academic Health Science Centre  
Application for Designation  
PART 1**

**Cambridge Academic Health Science Centre**



**UNIVERSITY OF  
CAMBRIDGE**

Cambridge University Hospitals **NHS**  
NHS Foundation Trust

Papworth Hospital **NHS**  
NHS Foundation Trust

Cambridgeshire and Peterborough **NHS**  
NHS Foundation Trust

**14<sup>th</sup> January 2009**

**1. Please provide (in no more than two pages) a description of your AHSC proposal. This should include an articulation of the goals and purpose of the proposed AHSC, and the role of each partner. Please describe what value you expect to deliver through an AHSC that could not be achieved through another type of partnership.**

**Vision.** The Cambridge AHSC will be a world-leading academic clinical partnership, improving patient care, patient outcomes and population health through innovation and the integration of service delivery, health research and clinical education.

**The AHSC partners.** The Cambridge AHSC is a partnership between the *University of Cambridge* and its three principal NHS affiliates: *Cambridge University Hospitals NHS Foundation Trust (CUH)*, *Cambridgeshire and Peterborough NHS Foundation Trust (CPFT)* and *Papworth Hospital NHS Foundation Trust (PH)*. This partnership brings together one of the world's leading universities and three high-performing NHS Foundation Trusts. The University of Cambridge was ranked first in the UK and second in the world for biomedical and life sciences in 2008 (THES-QS). The primary partnership is that between the School of Clinical Medicine and the NHS, although there are increasing interactions with other Departments across the University. The clinical partners serve a population for local services of some 0.75 million and for regional services of up to 5.5 million and also provide some nationally contracted services (see section 4). CUH secured a 'double excellent' rating in both the 2007 and the 2008 Healthcare Commission performance ratings and was rated 'acute trust of the year 2008' by an independent panel for the *Health Service Journal*. CPFT and PH both scored 'excellent/good' with the Healthcare Commission in 2008. PH currently scores a Monitor risk rating of 5 (the highest possible) and the other two Trusts ratings of 4. Between them the three Trusts offer a comprehensive clinical service with CUH's broad spectrum of general and specialised acute services complemented by PH's internationally recognised specialist status in cardio-thoracic services and CPFT's excellence in mental health and learning disability services.

The Clinical School and CUH have shared a common site in Cambridge since the former was established in 1976. The site is also shared with a range of other world-leading research institutions (see section 2). Since 1999 the Trust, University and MRC have been jointly committed to a strategy of expansion and development of the site as the 'Cambridge Biomedical Campus' (CBC), envisaged as a location of international stature for clinical care, research and education. This strategy has been successfully prosecuted and planning permissions and development agreements are now in place to allow a doubling in size of the campus to 140 acres. This will accommodate new clinical facilities for CUH; a new Papworth Hospital and associated cardiovascular research and education institute; new educational facilities and a commercial medipark, creating one of the largest and most internationally competitive concentrations of health-related talent and enterprise in Europe. Whilst the CBC is a very important part of the Cambridge offering, it is not its totality. The AHSC will also be connected to primary care and community services through the membership of CPFT (which is now extending its community services beyond its core mental health focus) with the involvement as an associate of the Cambridgeshire PCT provider arm, and the Clinical School's Institute of Public Health – the latter being an existing partnership between the NHS, University and MRC.

The partners have an established record of excellent working relationships and productive collaborations. The University and CUH are partners in one of the National Institute for Health Research (NIHR) Comprehensive Biomedical Research Centres (BRC); the University and CPFT are partners in an NIHR Collaboration for Learning and Applied Health Research and Care (CLAHRC); the University and PH have a formal collaboration for cardiovascular and respiratory research (the Cambridge Centre for Cardiovascular and Respiratory Research). All four organisations have been partners in a Cambridge Research Consortium (now being phased out as a consequence of changes to NIHR funding rather than at the members' volition), in which all 17 programmes of research were rated as 'strong' by the Department of Health in the last year of assessment (2006). There has been close service collaboration between the Trusts for many years; part of CPFT was a division of Addenbrooke's NHS Trust (CUH's predecessor organisation) until 2002.

**AHSC Goals** reflect a shared conviction that the distinctive capability of an AHSC is that of generating, transmitting and applying knowledge for improvement in health and health care. Each strand of the tripartite mission (care, research, education) must strengthen the other to create capability and build capacity. Strategic goals thus include: *knowledge generation* - adding to the global stock of knowledge through research and dissemination; building research capacity; fostering innovation in service delivery; *knowledge application* for health and healthcare improvement - embedding translational and applied research in service; promoting a service culture of systematic enquiry and openness to innovation; engagement of our people in mechanisms for developing,

diffusing and applying evidence for improvement; alignment of service between partners and with the academic mission; *knowledge transmission* - providing a shared setting for the education, training and development of healthcare professionals and the wider healthcare workforce that is characterised by systematic enquiry and a commitment to the use of evidence in practice; *contributing to a knowledge-based economy* - contributing to economic and social development for the benefit of the Cambridge sub-region, the East of England and the UK as a whole; fully engaging with the attributes that make the Cambridge sub-region notable as a system for innovation.

**Supporting strategies.** We see four supporting strategies as key to the realisation of these goals. *Functional Integration* will ensure that the governance arrangements for the AHSC are designed around a shared commitment to the tripartite mission. *Harnessing Partnership*: working across the full spectrum of partners on the Cambridge Biomedical Campus and in the wider region, the AHSC will use its unique capabilities and positioning to promote strong translational pathways on a thematic basis, building on an approach already successfully established for the NIHR Biomedical Research Centre. Maintaining a *Campus and Community* focus will ensure that the strength of the secondary and tertiary centre is balanced with links to primary and community care. The three Foundation Trusts have between them over 40,000 members, active Governors, supporting charities and committed volunteer networks. These resources will be used to build *Patient and Public Involvement* in the AHSC. The AHSC will support strategic goals for the regional health economy, as most recently articulated in *Towards the Best, Together*, published by the NHS East of England.

**Governance.** Our philosophy is that legal form and governance arrangements, together with delegation of powers, should follow from the intended activities of the AHSC. The partner organisations have agreed a common statement of intent that binds them together in a shared commitment to the tripartite mission. A *steering group*, under the interim chairmanship of the Regius Professor of Physic, provides strategic oversight and will determine longer-term governance arrangements. Membership includes representation from the NHS Foundation Trusts, Clinical School and the central University administration (see Annex). An *executive group* has been established reporting to the steering group and it is anticipated that other groups, both standing and project-related, will need to be established as the AHSC programme of work is taken forwards. This will be on a needs-driven basis and the AHSC will avoid committee proliferation. The steering group, which is acting as the shadow board, is exploring the benefits of creating an incorporated AHSC entity, and taking legal advice on the most appropriate form of incorporation. The steering group will also appoint an independent chair. In addition to the core partners there will also be AHSC associates: these include the MRC, Cancer Research UK (who have a major research presence on site) and industry partners located on the CBC, and existing NHS partners in teaching and service (the PCT provider arms and other regional hospitals). These organisations will be involved in the AHSC dynamic but will not have a formal role in governance. We will explore whether this larger group of NHS associates can be developed, with education partners (e.g. Anglia Ruskin University) into a Health Innovation and Education Cluster (HIEC) linked to the AHSC. We will also ensure that the AHSC governance arrangements align with existing governance mechanisms, including those created for the BRC and the CLAHRC and already in place for the individual Foundation Trusts.

**Added value.** The AHSC will add value by creating an entity that is formally committed to the tripartite mission, complementing the specific roles of the partners individually. The AHSC will serve to formalise and enhance the already strong relationships between the University and its principal NHS partners. It will provide a new platform for collaboration between the partner organisations, especially, but not exclusively, in relation to research through, for example, the provision of shared research infrastructure. Service, research and governance will be coordinated across the partnership. The AHSC will also enhance the already excellent reputations of the partners, enhancing recruitment and retention of outstanding staff. All of these factors will work together to drive the desired outcomes: significant improvement in patient care, patient outcomes and population health.

**Benefits.** We anticipate the acceleration of a range of benefits from the AHSC. For *patient and population health* these will be immediate, flowing from treatment in a research-rich environment characterised by a culture of enquiry, and longer term arising from discovery and application. For *clinical staff* (both today's and tomorrow's) it will offer the benefits for career, cognitive and personal development of clinical practice, education, training and development in a research-rich organisation. For *researchers* it will nurture and facilitate new collaborations and reduce 'back office' barriers. For the *regional and national economy* we anticipate that the AHSC will generate a range of economic and social benefits for the sub-regional and regional economy, which is knowledge-based in large part. Finally there will be the contribution to the global stock of knowledge that is an asset for *international and global healthcare and population health*.

**2. Please provide (in no more than two pages in total) an overview of those aspects of partners', current biomedical, clinical and applied health research, which is of international standing. This research should be across a range of interests and of critical mass. Please link your description of research focus to the purpose and goals of the proposed AHSC.**

A comprehensive range of research of international quality is pursued across the partnership. This is mostly concentrated on the Cambridge Biomedical Campus, the location of (i) CUH (ii) the University School of Clinical Medicine, with its 12 Departments and associated Institutes, and (iii) two directly funded Research Institutes – the MRC Laboratory for Molecular Biology (LMB), and the Cancer Research UK Cambridge Research Institute (CRUK CRI). It is planned that Papworth Hospital will be rebuilt on the campus by 2012, combined with a new Cardiothoracic Research and Education Institute, and CPFT is also planning to relocate its Cambridge-based services to the campus. In addition to the MRC LMB, there are five MRC Units in Cambridge, of which four are located on the campus. In close proximity are the University's main Biological Science campus in the centre of Cambridge, with its strength in relevant underpinning biological science; the Babraham Institute (funded by the BBSRC); and the Hinxton Genome Campus with the Wellcome Trust Sanger Institute and the European Bioinformatics Institute. This co-location in Cambridge of the major regional university hospitals, university medical school and research institutes on a single campus, with these surrounding strengths in Biological Science is unusual within the UK, and provides an exceptional environment for the highest quality collaborative biomedical research and its clinical translation.

**Current Biomedical Research.** The research of the School of Clinical Medicine and the NHS Partners is largely pursued on a cross-departmental thematic basis, often intersecting with research in other Schools of the University. The principal themes include *Cancer, Metabolic Disease including Obesity and Diabetes, Neurosciences and Mental Health, Cardiovascular Disease, Genetic Medicine, Transplantation, Regenerative and Haematological Medicine, Immunity and Infection, and Epidemiology, Public Health and Primary Care*. Associated with these major research themes are a number of underpinning themes in which the School has particular research strengths: these include *Structural and Cell Biology applied to Medicine, Medical Imaging and Bioinformatics*. Pursuit of the major underpinning research themes is enabled and facilitated by a number of cross-departmental research institutes under the aegis of the School. These include the *Cambridge Institute for Medical Research (CIMR)* supported by a Wellcome Strategic Award, and including the *Juvenile Diabetes Research Foundation/Wellcome Trust Diabetes and Inflammation Laboratory*, the *Hutchison/MRC Cancer Research Centre*, the new *Institute of Metabolic Science*, the *Brain Repair Centre*, the *Wolfson Brain Imaging Centre*, and the *Institute of Public Health* and associated *Centre for Genetic Epidemiology*. Refurbished buildings housing laboratories for translational stem cell medicine and for the metabolic and imaging phenotyping of small animal models of disease, and for translational Cognitive Neuroscience open shortly on the campus. The School's strategic plan includes developing closer links with Physical Sciences and Engineering through new initiatives and appointments. These include the *Cambridge Computational Biology Initiative*, the new *Physics of Medicine Building and associated Chairs*, and linking with Chemistry through the recently appointed *Herchel Smith Chair of Medicinal Chemistry*. The new CRUK CRI – a partnership between the University and CRUK - is dedicated to translational cancer research and is located on the campus.

The University has been awarded four *MRC Centre grants*: (i) the *MRC Behavioural and Clinical Neuroscience Institute* spans neuroscience research across the Schools of Biological Sciences and Medicine (ii) the *MRC Centre in Stem Cell Biology and Medicine* links basic and translational stem cell research in the two Schools (iii) the *MRC Centre for Obesity and Related Metabolic Disease* involves investigators from the MRC Dunn, Epidemiology and Nutrition Resource Units (iv) the *MRC Centre for Nutritional Epidemiology in Cancer Prevention and Survival* is based in the University Department of Public Health, and links work from the Dunn Unit with the School's research in cancer epidemiology.

**Clinical and Applied Health Research.** There is exceptional existing strength in 'experimental medicine', focussed through the Addenbrookes' Centre for Clinical Investigation. This contains the *Wellcome Trust Millennium Clinical Research Facility* (one of five awarded by the Wellcome Trust in 2000, which was supplemented by a further UKCRC award for clinical MR spectroscopy in 2007) and the Clinical Research Unit of GlaxoSmithKline, with a shared Clinical Investigation Ward. This highly successful clinical research facility allows integration between University Hospital and pharmaceutical industry investigators. Significant numbers of NHS staff pursue research in association with University colleagues, and most University staff involved in basic biomedical research hold honorary NHS contracts with one or more of the partner Trusts. The Clinical School with GSK as its industry partner was recently awarded one of four '*Centres in Translational Medicine*

*and Therapeutics*' in the recent Wellcome Trust scheme: this will provide a training programme in the area. One of the five national '*Centres of Excellence in Public Health*' was awarded to the partners in the Institute of Public Health in the recent ESRC competition. Three awards were made to the School in the recent *MRC Experimental Medicine Initiative*. The Division of Primary Care is one of the five constituent members of the *National School of Primary Care*. Clinical cardio-respiratory research is underpinned by two *BHF Professorships* and major *BHF programme support*. Papworth Hospital is internationally recognised for its pioneering approach to cardiothoracic organ transplantation since conducting the first successful UK heart transplant in 1979. Examples of its applied research are the trial of deep hypothermic circulatory arrest during pulmonary endarterectomy for chronic thromboembolic pulmonary hypertension (for which it is the only UK Trust designated by the National Commissioning Group) and its research on the mechanisms and assessment of chronic rejection: a further strength is the design and conduct of trials of clinical and cost-effectiveness based on long collaboration with the MRC Biostatistics Unit and Brunel University Health Economics Research Group. Clinical research in mental health involves a wide consortium of Cambridge scientists from the Departments of Psychiatry, Experimental Psychology (working together as the MRC Behavioural and Clinical Neuroscience Institute), the MRC Cognition and Brain Sciences Unit, Department of Clinical Neurosciences and elsewhere. All this research continues to attract industry partners: as examples the Clinical School has agreed an '*Academic Incubator*' project with GSK – seen by GSK as a prototype for their academic collaborations globally – and Merck has contributed to new research PET-CT facilities (also funded by NIHR capital). CUH is negotiating a strategic partnership with Siemens to deliver pathology services and stimulate related research.

CUH and the Clinical School are one of the five *NIHR Comprehensive Biomedical Research Centres* (£13M pa over 5 years), and received one of the *NIHR Technology Platforms* awards in Imaging. Clinical and epidemiological research in psychiatry and in the Institute of Public Health underpins the *NIHR Collaboration for Leadership in Applied Health Research and Care (CLAHRC)* for Cambridgeshire and Peterborough hosted by CPFT (£9.55M over 5 years). This brings together an innovative partnership between regional NHS players (including the PCTs and the SHA), the Clinical School, the Judge Business School and the University's Engineering Design Centre. Clinical School academics also play leading roles in the UKCRN initiatives including the CLRN, the mental health research network (MHRN) and the dementia and neurodegenerative diseases research network (DeNDRoN). There are seven *NIHR Senior Investigators* in the Clinical School.

**Research Training** is at the core of the partnership. Recognition of training excellence is evidenced by the award of a *Wellcome Trust Clinical PhD programme* and training is a theme of the NIHR BRC: these and other programmes give the partnership 35 Clinical Research Fellowships to be awarded by internal competition over the next five years. In addition, *Wellcome Trust 4 year PhD programmes* are held in *Infection and Immunity* and *Metabolic and Cardiovascular Disease*.

**International Standing of Research.** Some examples of evidence of the international standing of research in the partnership: in the 2008 Research Assessment Exercise (RAE) Cambridge received the highest mean grade point average (3.11) across Main Panels A and B of any UK medical school (see Annex); 25% of all Wellcome Principal Fellowships (20% in the Clinical School), and 29% of all Wellcome Senior Clinical Fellowships in the UK are held in Cambridge. In 2004-8 the Cambridge partners published 17 clinical research articles in the *New England Journal of Medicine* (13 articles and 5 reviews/editorials) – an indicator of international impact.

**Links between research and purposes and goals of the AHSC** The partners have a track record of successfully integrating and translating their research. Through its Departments and Institutes in the School of Clinical Medicine, the University pursues biomedical research which connects with clinical research in the service divisions of the NHS partners, both as 'experimental medicine' studies and clinical trials. In association with the partnership a new Professor of Health Services Research has been appointed, who will work in partnership with RAND Europe, and a chair of postgraduate nursing research is planned. The NHS trusts and the University have a history of collaboration in R&D prior to the advent of the NIHR, as partners in the 'Cambridge Consortium': this extends to joint University/NHS mechanisms for the management and protection of intellectual property rights (Cambridge Enterprise at Addenbrooke's). The partners have already committed to a single R&D office: a Research Governance Agreement has been in place between the University and CUHFT since 2005 (one of the first in the UK) and will serve as a model for the new partnership. The partners see the AHSC as an outstanding opportunity to pursue their collaborative research still more effectively through a new and stronger form of partnership which permeates all their clinical activity, and to translate the outcomes into knowledge gain for the local health economy, the wider Eastern Region and the UK.

**3. Please describe (in no more than two pages) partners' excellence in undergraduate and postgraduate medical education and (as appropriate) in other areas of healthcare and health science education.**

The partners are committed jointly and individually to the provision of high quality education, training and development for the entire NHS and research workforce, ranging from basic skills training to pre and post-registration professional education and continuing professional development. Across all clinical education programmes the Clinical School is committed to providing students and trainees with a rigorous scientific, research-led and evidence-based approach to learning and to build on this with the development of excellence in communication and the other skills and attributes required for good medical practice.

**Undergraduate medical education** in the University of Cambridge is provided jointly between the Schools of Biological Sciences and Clinical Medicine leading to the MBBChir degree. Extensive revision of the preclinical (2001) and clinical (2005) courses has been completed recently, to take account of best practice in medical education and local strengths. These include excellent relationships with partner NHS Trusts, each of which has a Clinical Sub-Dean, responsible for delivery of the undergraduate curriculum locally, including recruiting and monitoring multi-professional clinical teaching staff. Sub-Deans also play an active part in the Clinical School's Education Division through involvement in the ongoing development and assessment of the undergraduate curriculum.

The University admits 278 students into Year 1 of the *Standard Course* (6 years), which awards a BA degree (Cambridge Tripos) at the end of Year 3. At this point, 130 students are admitted to the School of Clinical Medicine for a further 3-year clinical course (leading to the award of MBBChir) in a competitive process. About 50% of clinical teaching occurs in CUH, with the rest taking place in partner teaching Trusts throughout the Eastern Region. The clinical programme includes compulsory placements in Year 5 at both PH and CPFT. The *Cambridge Graduate Course* (4 years) admits 20 students each year to a vertically integrated programme developed as a partnership between the University, three Cambridge graduate colleges and the West Suffolk Hospital NHS Trust (WSH). The final two years are partially merged with standard course Years 5 and 6, including attachments in PH and CPFT. The *MBPhD programme* (9 years) allows between five and ten academically gifted students in each standard course cohort to intercalate a PhD with their clinical degree. Established in 1989, this highly successful programme was the first in the UK and is based on the US MDPHD model. Funding is raised annually from a variety of internal and external charitable sources. From 2008 links have been completed with the prestigious NIH MDPHD programme, enabling exchange of MDPHD students between NIH and Cambridge with continuing clinical attachments on both sites.

Educational expertise is provided through the Clinical School Deanery Team, together with University and Trust staff with a special interest and through the recently constituted Medical Education Research Group (which has ten individuals enrolled in Master's programmes in medical education, two with PG Certificates in education, and one PhD student). The School's staff development programme for clinical supervisors (trainees employed by the partner Trusts) has been accredited by the Higher Education Academy and the School runs a certificated course for teaching communication skills for a range of academic and NHS staff involved in student teaching.

Undergraduate medical education provision was inspected by the UK General Medical Council (GMC) in 2007/08 under its Quality Assurance of Basic Medical Education programme. The generally favourable 2007 report included fourteen commendations of good practice (see annex) and two in the supplementary 2008 report. The University of Cambridge participated in the National Student Survey for the first time in 2008 with positive results (although the number of final MB students taking part was too low for publication).

**Graduate Education (Masters and PhD)** is overseen by the Graduate School of Life Sciences, which supports over 1,500 graduate students across the Schools of Clinical Medicine and Biological Sciences. The Graduate School runs a comprehensive programme of transferable skills training. A growing number of graduate students undertake a one year MPhil in Medical Sciences prior to their PhD. Masters courses in Epidemiology and Public Health are provided through the Institute of Public Health and a new Masters level course will be established from October 2009 in Translational Medicine and Therapeutics under the Wellcome Trust award.

**Clinical academic training** includes a number of schemes for which national funding has been obtained through recent competitions (i) Integrated Academic Pathways - 78 Academic Clinical Fellow (ACF) and 34 Clinical Lecturer (CL) posts over 5 years, including 5 ACF and 2 CL posts in Psychiatry based in CPFT (ii) Wellcome Trust Clinical PhD Programme - 25 studentships over 5

years (£6.5M); (iii) Wellcome Trust Translational Medicine and Therapeutics programme - 11 clinical PhD studentships, 3 MBPhD studentships plus 4 linked ACF posts with CUH (£4.5M) (iv) NIHR BRC Clinical Research Training Fellowships - 9 studentships (£1.7M, including 1.5 studentships funded by GSK) (v) HEFCE New Clinical Senior Lecturer scheme - 7 awards have been made to the partners in the first 3 rounds of the scheme (which requires 50% NHS funding)..

**Postgraduate medical education** is delivered by all partners, including collaboration with the university in a range of clinical academic training posts. CUH currently employs 485 trainees in accredited training posts across 48 specialties and supports the education of a further 105 Trust doctors, making it the largest centre for medical education in the East of England. There are 60 trainees in psychiatry at CPFT and 63 in cardiorespiratory medicine, surgery and cognate specialties at Papworth.

*Foundation training* is delivered through close collaboration between the University and NHS partners. The Foundation curriculum incorporates mandatory training modules with innovative teaching methods for clinical skills training, including e-learning, simulation training and interactive teaching - and was highly commended at the most recent Deanery/ PMETB inspection.

*Specialist training.* The partner Trusts offer training in all aspects of clinical medicine including Primary Care, Public Health and Psychiatry. All offer core training to ST3 level with sub-specialty training at ST 4-6. Each partner provides formal training programmes with excellent library and IT facilities coordinated through the joint Clinical School/CUH library, part of the University of Cambridge Library. CUH and the Clinical School share clinical simulation facilities, ranging from basic skills training to a state-of-the-art High-Fidelity Simulation Centre. The latter draws delegates nationally and has a track record of research into Patient Safety, with recent publications in drug error and in the validation of simulated training. CUH's Postgraduate Medical Centre also organises a range of educational provision for primary care practitioners. There are active continuing professional development (CPD) programmes in all the partner Trusts, including preparation courses for Royal College examinations.

*Education for teachers* is provided for by a Training the Trainers course at CUH, conducted annually with faculty drawn from both NHS and academic staff. Over 200 consultants have been trained and have provided assurance that the course is rated excellent by participants through feedback. Regular update courses for Educational Supervisors are also conducted.

**Nurse and Allied Health Professional Education** is provided by Anglia Ruskin University and the University of East Anglia. The NHS partners are involved through the provision of clinical placements pre-registration and through support for post-registration training and professional development, which will be further strengthened by planned developments in academic nursing and postgraduate education.

**NHS provision of Education, Training and Development** is wide-ranging. At CUH this includes, for example, training in resuscitation, customer care, risk management, safeguarding children, recruitment and selection and a range of mandatory requirements. The Trust also runs a range of IT training from basic operational systems through desktop skills to advanced clinical applications. PH attracts international work placements, has a multi-professional approach to the education of all healthcare professionals and has developed new roles such as Transplant Donor Care Practitioners and Surgical Care Practitioners. An important recent development for CUH has been the establishment of a Leadership Academy, targeted mainly at middle managers, some 200 of whom have now completed the year-long programme. The Trust is also now collaborating with the Judge Business School to provide executive education in healthcare management and has established 'Addenbrookes Abroad', an initiative to transfer learning and skills to developing countries through staff secondment and exchange.

**Future plans**, within the scope of the AHSC include: (i) the development of clinical research training modules for academic clinical fellows; (ii) the development of a wider range of postgraduate degrees aimed at non-medical healthcare professionals; (iii) the development of a postgraduate nursing unit linked to the appointment of a Professor of Nursing Research; (iv) the new Cardiovascular Research and Education Institute (see section 2) and (v) the development of a learning centre on the Cambridge Biomedical Campus. This last initiative will be a joint project with Anglia Ruskin University, which wishes to re-locate its nursing school onto the campus, and possibly with local schools and further education providers for diploma education. This development would accelerate the provision of multi-disciplinary education in clinical skills, which is space-constrained at present. It would also enable further educational enterprise, principally through the Postgraduate Medical Centre, which has an excellent record of innovation in externally supported and self-funding courses.

**4. Please describe (in no more than two pages in total) the NHS partner(s) excellence in delivering patient care.**

The three NHS Trusts involved in this application – a general and specialist acute hospital, a mental health and learning disability service provider and a specialist cardiothoracic hospital - have all achieved high levels of external recognition for clinical excellence.

**Cambridge University Hospitals NHS Foundation Trust**, comprising Addenbrooke's Hospital and the Rosie Hospital employs 7,000 people, has annual income of £455 million and provides: a comprehensive range of clinical services to a local population of around 500,000 in the Greater Cambridge area; more specialised services to a sub-regional and regional population of up to 5.5M people, including specialist cancer care, neurosciences, transplantation, specialist paediatrics, neonatal intensive care and other specialist perinatal services, allergy and immunology, infectious disease, and medical genetics. The Trust also provides nationally commissioned services in multiple organ transplantation and rare metabolic disorders. CUH has articulated its ambition to be an internationally leading academic clinical centre over a number of years, for example in its successful 2003 application to become a first wave NHS Foundation Trust and in its '2020 Vision' strategy for the future of the campus.

CUH is one of a small number of NHS organisations to score 'excellent' for both quality of service and use of resources in the Healthcare Commission health check for both 2007 and 2008 and is ranked third nationally for consistent performance in this rating system. This followed consistent achievement of high ratings under the previous Department of Health star rating system (2002 to 2005). The Trust was also placed in the 'best performing category' for the Healthcare Commission Review of Maternity Services in 2008, fully met all Healthcare Commission core standards and national targets and achieved the highest possible scores for safety and cleanliness, standard of care, dignity and respect, and waiting times. Alan Johnson MP, Secretary of State for Health, said of these results: "Your services were among the best in the country, and your organisation has also performed well over time. You have achieved a level of performance that all trusts should aspire to."

CUH was designated Acute Organisation of the Year by the judges of the 2008 *Health Service Journal* (HSJ) awards, who recognised not only its established excellence, but the ongoing transformation which is the current principal focus of the Trust's management. The judges particularly noted "evidence of an impressive depth of change ....the move to outcomes and values, the linkage of values with patient and staff satisfaction, and how innovations from staff had been implemented across the organisation." Addenbrooke's dedicated central venous line team - the first in the country and crucial in reducing infection levels - was also shortlisted for the HSJ's Patient Safety Award.

A key element in achieving high performance has been consistent attention to patient feedback through quarterly patient surveys. In July 2008, 95% of patients said that the Trust met or exceeded their aspirations. The Trust's priorities include striving for innovation and this is reflected in the close integration of research and education with clinical care and the direct embedding of University departments within each of its seven clinical divisions.

**Cambridgeshire and Peterborough NHS Foundation Trust** provides mental health and specialist learning disability services to the 755,000 residents of Cambridgeshire and Peterborough and across the country to users of specialist services. The Trust has an annual income of more than £100 million and employs 2,500 staff across 75 sites in Cambridgeshire, Huntingdon, Peterborough and Fenland. The Trust provides child and adolescent mental health services, adult mental health services, older people's mental health services, forensic and specialist mental health services, substance misuse services and specialist learning disability services.

In 2008, the Trust achieved 'Excellent' from the Healthcare Commission for quality of services and 'Good' for use of resources (the highest that a newly established Foundation Trust can aspire to). It has had several successes that indicate the high quality of its provision, for example the CAMEO early intervention service for young people with psychotic illness won the Hospital Doctor Team of the Year Award and, with two other leading Foundation Trusts, CPFT is participating in the Mental Health Patient Experience Project led by Monitor. This reflects the Trust's leading work on clinical care pathways and development of these as potential contract currency in anticipation of Payment by Results for mental health services. As part of a national consortium, the Trust has recently been awarded contracts with the Ministry of Defence and leads the Improving Access to Psychological Treatments in Mid Essex as well as Cambridgeshire.

In April 2008, as part of the Standards for Better Health, the Trust declared compliance with all 44 Healthcare Commission standards. It has also achieved the Healthcare Commission's targets for the implementation of new services, i.e. early intervention, assertive outreach and crisis resolution and home treatment services.

CPFT was one of the first Trusts to introduce the principles of 'lean' production techniques to the NHS, leading to the development of 26 new care pathways that are being implemented during 2008/09. The most significant change is that in future the Trust will provide primary mental health care as well as specialist mental health and learning disability care. This will be introduced during 2008/09, with the agreement of commissioners. The Trust has introduced the new service at no additional cost to its commissioners through the savings made from transformation. This work was recognised nationally by the Director of Business Development - an invited speaker at a national conference on the introduction of lean technologies into the NHS.

The Trust is planning to relocate many of its Cambridge-based services to the Cambridge Biomedical Campus to achieve better synergy with research, reduce stigma and better manage multiple morbidities. A new mental health and learning disability inpatient unit in Peterborough is currently under construction as part of the development of a new general hospital. Service users from the adult and learning disability inpatient services will transfer to the new unit in 2009. The Trust has close ties to the University Department of Psychiatry, which was top-rated in the 2008 Research Assessment Exercise.

**Papworth Hospital NHS Foundation Trust** has an outstanding national and international reputation as a leading specialist centre for the treatment of heart and lung disease. It has annual income of over £100 million and its services include the diagnosis, treatment and management of patients in three principal areas: Cardiac; Thoracic; Advanced Heart and Lung Failure, including Transplantation.

PH is one of the highest volume centres in the UK for *Cardiac Services* and provides nationally commissioned services for interventional treatment of coronary artery disease, electrophysiology (EP) pacing and cardiac devices for the treatment of cardiac arrhythmias and valve repair/replacement. In the field of cardiac surgery, Papworth has a reputation for treating difficult and complex cases and has pioneered cardiac investigational techniques including echocardiography, MRI, CT, nuclear imaging and diagnostic angiography. Papworth is the only UK pulmonary hypertension centre commissioned to perform pulmonary endarterectomy surgery (PTE) and is second only to San Diego in the number of PTE procedures undertaken. Papworth Hospital is an internationally recognised specialist centre for the treatment of most *Thoracic Diseases*. It operates a joint Cancer Centre for thoracic malignancy with CUH, a regional Cystic Fibrosis centre, a Respiratory Infection/Inflammation/Immunology (RIII) service and an Interstitial Lung Disease (ILD) service. It has also opened a Respiratory Support and Sleep Centre (RSSC) - the largest centre in Europe dedicated to the investigation and treatment of sleep disorders and associated respiratory problems. Since carrying out the UK's first successful heart transplant in 1979, Europe's first successful heart and lung transplant in 1984 and the world's first heart, lung and liver transplant in 1986, Papworth has established itself as one of the leading centres for treating *Advanced Heart and Lung Failure*. There are high demands on Critical Care and Anaesthesia at Papworth given the complexity of surgical interventions performed and the advanced illness of many patients.

Patients hold the care they receive at Papworth in high regard, as demonstrated by the Trust being rated amongst the best-performing Trusts in over 90% of applicable categories in the Healthcare Commission 2007 inpatient survey. Patient safety is a high priority, as exemplified by the Trust's proactive approach to reviewing its heart transplant programme last year. Clinical prioritisation of patients ahead of new waiting time targets coinciding with strong increases in demand resulted in the Trust not retaining its 'Excellent' rating for Quality of Services in the Healthcare Commission in 2008 (whilst fully meeting core standards and existing national targets).

Papworth became one of the 'first wave' NHS Foundation Trusts in 2004, and has been one of the best performing Foundation Trusts on Monitor's risk ratings, currently rated in the highest categories for finance (5), governance (green) and mandatory services (green).

## Annex – Supplementary Data

### 1. Steering Group Membership

Vice-Chancellor and Registry of the University of Cambridge; Regius Professor of Physic, Chairman, Chief Executive and Clinical Academic lead from each of the 3 Trusts (12 members in total) plus independent chair to be appointed.

### 2. International Standing in Research

The School of Clinical Medicine has a relatively small established Faculty and University base funding, but has the highest ratio of external grant income to staff numbers and research space within the University. In the 2001 Research Assessment Exercise the School of Clinical Medicine was awarded the highest rating of 5\* in all three main areas of assessment (Laboratory Based Subjects, Hospital Based Subjects and Community Based Subjects). For the **2008 Research Assessment Exercise**, research in the Departments within the School of Clinical Medicine and the Department of Pathology in the School of Biological Sciences was submitted to 8 of the 9 Units of Assessment (UOA) under main panels A (UOA 1-5) and B (UOA 6, 8 and 9), organised on the basis of common research themes across the Departments. The research submitted included collaborative work with the School's major research partners in Cambridge - principally the Medical Research Council, Cancer Research UK (CRUK), and the NHS partners in the proposed AHSC. Based on the GPA (Grade Point Average) across the quality profile, Cambridge was ranked first or second in 7 of the 8 UOAs to which it submitted. The ranking and GPA in individual UOAs was as follows: **UOA1 Cardiovascular Medicine** 2<sup>nd</sup> (3.15); **UOA2 Cancer Studies** 2<sup>nd</sup> = (3.1); **UOA3 Infection and Immunity** 2<sup>nd</sup> (3.05); **UOA4 Other Hospital Based Clinical Subjects** 2<sup>nd</sup> (3.15); **UOA5 Other Laboratory Based Clinical Subjects** 1<sup>st</sup> (3.25); **UOA6 Epidemiology and Public Health** 1<sup>st</sup> (3.25); **UOA 8 Primary Care and Other Community Based Subjects** 7<sup>th</sup>= (2.8); **UOA9 Psychiatry, Neurosciences and Clinical Psychology** 1<sup>st</sup> (3.15). Cambridge's aggregated quality profile across Main Panels A and B was: 4\* (world-leading) 36%, 3\* (internationally excellent) 44%, 2\* 16%, 1\* 3%: this ranks 80% of the research as world-leading or internationally excellent (3\* + 4\*) and gives it the highest mean grade point average (3.11) across Main Panels A&B of any UK medical school.

### 3. Excellence in undergraduate and postgraduate medical education

The 2007 GMC QABME review of undergraduate medical education commended the School on the following areas of good practice a) integration of anatomy with clinical work and the progress with integrating pathology teaching and application b) online therapeutics and prescribing facility c) breadth of practical skills training d) communication skills programme e) initiatives to recruit and train senior students to teach their peers f) MBPhD programme providing ongoing clinical exposure g) staff development strategy enabling induction training of clinical supervisors, h) hub and spoke clinical skills model i) approach to interprofessionalism j) online learning environment, ERWeb, which delivers core curricular material across different regional hospital sites and promotes the development of students' self-directed learning skills k) pastoral and academic support provided through the collegiate system l) development of the Simulated Clinical Encounter Examination m) the structure of dermatology teaching in Stage 3 n) the Death and Dying course which was well conceived, structured, prepared and taught.

### 4. Excellence in delivering patient care

Healthcare Commission ratings 2007/8	CUH	CPFT	Papworth
<b>Quality of Services</b>	Excellent	Excellent	Good
Core standards	Fully met	Fully met	Fully met
Existing national targets	Fully met	Fully met	Fully met
New national targets	Excellent	Excellent	Good
<b>Use of Resources</b>	Excellent	Good	Excellent
<b>Patient-centred Measures</b>			
Safety and cleanliness	13/13	10/11	13/13
Standard of care	9/9	10/11	6/6
Waiting to be seen	12/12	2/2	7/10
Dignity and respect	9/10	9/9	10/10
Keeping the public healthy	5/5	4/4	3/3
Good management	16/17	14/14	15/16
Monitor Risk ratings Q2 2008/9	CUH	CPFT	Papworth
Financial Risk rating	4	4	5
Governance Risk rating	Green	Green	Green

## Partners' Statement of Intent

### An Academic Health Science Centre for Cambridge

#### Statement of Intent

We, the undersigned representatives of the University of Cambridge, Cambridge University Hospitals NHS Foundation Trust, Cambridgeshire and Peterborough NHS Foundation Trust and Papworth Hospital NHS Foundation Trust, agree to the establishment of a partnership that will seek formal designation from the Department of Health as an 'Academic Health Science Centre'.

The partnership will bind the member organisations together in pursuit of outstanding excellence in clinical care, clinical education and health research so as to improve services to patients and population health. We will work together to accelerate the translation of new discoveries into improved disease prevention, diagnosis and treatment. The partnership will also generate wider economic and social benefits in the Greater Cambridge area. The partners are already high-performing organisations across different aspects of this mission. We believe that a more formalised collaboration will further support each organisation to achieve all aspects of the goals set out above, which are held in common.

The partners will explore the creation of a single legal entity, which would have as its objectives the integration of clinical care, clinical education and health research. Powers necessary to achieve these objectives, identified and agreed from time to time by a board that includes representation from all the parties under an independent chair, would then be delegated to the AHSC entity. In the meantime, the development of the partnership will be overseen by a shadow board. The undersigned undertake to support such delegation of powers and seek any further approvals of them as may be necessary under the rules of their respective organisations.

We will complete the establishment of the Academic Health Science Centre for Cambridge by summer 2009. This will require the establishment of both governance and management structures and the agreement of a strategic plan.

#### *Signed*

Professor Alison Richard  
Vice-Chancellor,  
The University of Cambridge

Professor JG Patrick Sissons  
Regius Professor of Physic,  
The University of Cambridge

Anne Campbell  
Chairman, Cambridgeshire and  
Peterborough NHS Foundation Trust

Karen Bell  
Chief Executive, Cambridgeshire and  
Peterborough NHS Foundation Trust

Dr Mary Archer  
Chairman, Cambridge University Hospitals  
NHS Foundation Trust

Dr Gareth Goodier  
Chief Executive, Cambridge University  
Hospitals NHS Foundation Trust

Robert Burgin  
Chairman,  
Papworth Hospital NHS Foundation Trust

Stephen Bridge  
Chief Executive  
Papworth Hospital NHS Foundation Trust

Date: 19<sup>th</sup> December 2008