

King's Health Partners 2018/2019 annual report summary

As we move into the final stages of our 2014-2019 accreditation, we continue to maximise our combined expertise to improve the lives of the people we serve, building on the evidence already provided in our previous four annual reports and looking towards the next five years, 2019-2024.

- Across our four major campuses in south east London we have aligned our estates' strategies to ensure a coherent future model working as a single entity with a common strategic vision
- We have established five clinical academic institutes- Cardiovascular, Women & Children's Health, Neurosciences, Haematology, and Diabetes, Obesity & Endocrinology to create integrated models of clinical academic strength
- Working in partnership with the south east London Sustainability and Transformation Partnership (STP) we are transforming the way we work to reduce health inequality, improve prevention and increase the focus on health outcomes data for the whole population.

World-class research

Annually we top the table for combined patient volumes in clinical trials, with 38,000 patients participating in clinical trials last year. Supported through a collective research income of £245.5m in 2018/2019, up 38% from 2017/2018.

In 2018/2019 there has been notable achievements in securing major funding grants, including,

- €117m EU-AIMS-2-TRIALS consortium for autism research, representing our largest ever single grant and the largest grant ever given for autism research
- £14m investment to form a new Cancer Research UK City of London Centre
- €26.8m to fund diabetes research, in partnership with 22 other academic and industry collaborators
- £15m Wellcome Innovations Flagship in Psychosis.

Significant high impact patient-centred developments in 2018/2019 include: RADAR-AD to use digital technology to assess the progression of patients with early Alzheimer's Disease, €2.1m funding to create an international network to better understand and treat sickle cell disease, a new Centre for Inflammation Biology & Cancer Immunology (CIBCI), and we are part of a major new study leading to a ground-breaking treatment for peanut allergy.

Excellence in health education

- Our Education Academy published its 2018 annual report
- Our online Learning Hub was relaunched in 2019, offering regional and international audiences new learning modules and providing a platform for postgraduate courses, conferences and continuing personal and professional development
- Our new Postgraduate Certificate (PG Cert) in Advanced Medical Training (Children's Health, Haematology or Women's Health) is being marketed nationally and internationally.

Excellence in patient care

- Cardiovascular teams working jointly to reduce waiting times for patients in need of surgery and improving patient survival rates
- Haematology staff working as 'One Team' to improve care for people with blood diseases, supporting patients with their mental health, and delivering world first treatments
- Neurosciences research being consolidated to tackle the complexity of the nervous system and the vast array of conditions and disorders that can affect it

- Leading an NHS England-funded pioneering new service for people with type 1 diabetes and disordered eating (sometimes known as Diabulimia)
- Combining the significant clinical academic strength across our partnership in women and children's health to improve outcomes nationally and internationally.

Integrated mental and physical health (Mind & Body)

- We have now screened more than 65,000 physical health patients for anxiety and depression across 60 acute outpatient clinics, a 17% increase from the end of 2017/2018
- New projects in blood cancers and sickle cell disease, as part of King's Health Partners Haematology, with funding from Leukaemia UK
- Funding secured for Integrating our Mental and Physical Healthcare Systems project which will focus on closing the mortality gap for mental health patients
- Focus on staff development and training, and supporting work across our partnership to care for staff health and wellbeing
- Research income secured to fund work on personalised medicine in psychiatry and the role of cardio-metabolic traits, seizures and stress, and the effects of nutrition on compulsive behaviours.

Value based healthcare

- Secured £10m in funding from UK Research and Innovation for a new Centre for Medical Imaging and AI. Established as part of the UK Government's Industrial Strategy Challenge Fund, the centre brings together a consortium that includes two universities, King's Health Partners, Bart's Health, multinational industry (Siemens, NVIDIA, IBM, GSK), 10 UK-based SME's and the HIN, to provide faster diagnosis, personalised therapies and effective screening for patients
- To further improve value and reduce health inequalities we are working on the Vital 5, an innovative new approach to population health
- 17 of our 22 CAGs have now published Outcomes Books
- We are developing Outcomes Scorecards, which will form an important part of our strategy for supporting CAGs and institutes to drive value by identifying opportunities for improvement.

Global impact

- The King's Centre for Global Health & Health Partnerships launched their 10-year strategy and global volunteering opportunities
- We continue to work with international colleagues to share our learnings as an AHSC. This year we have supported colleagues in Denmark, China, Singapore, Australia and Malaysia
- As a member of the European University Hospital Alliance, we have hosted pathway and outcomes working groups and secured funding of €230k for pathway work and publications.

Our contribution to economic growth

- We are attracting industry partners in the life sciences sector to drive health and wealth that will improve patient outcomes, benefit our local communities and drive better population health
- Our plans to develop a Biomedical Hub at our Guy's campus have already secured key industry partners including, UCB, Unilever and GSK, and we are working with Siemens, Medtronic and a host of SMEs, to further develop a MedTech Hub at our St Thomas' campus
- GammaDelta Therapeutics Ltd, is an example of a CAG founded innovation that received up to \$100m investment from Takeda and Abingworth.



DEPARTMENT OF HEALTH & SOCIAL CARE DESIGNATED ACADEMIC HEALTH SCIENCE CENTRE (AHSC)

2018/19 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 & Social Care Academic Health Science Centre:

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

Name: Professor Sir Robert Lechler

Job Title: Executive Director, King's Health Partners

Address: Ground Floor, Counting House, Guy's Hospital, London, SE1 9RT

E-mail: robert.lechler@kcl.ac.uk

Tel: 0207 188 8794

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

Please provide a brief overview of activities for your AHSC for 2018/19 financial year, addressing the following points:

- 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;
- 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;
- summary of the AHSC's contribution to economic growth and the economy, including through partnerships with industry;
- progress on the development and delivery of an appropriate e-Health informatics platform;
- 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.

Our progress with further aligning the strategic objectives of our NHS providers and university to harness and integrate world-class research, excellence in health education and excellence in patient care

King's Heath Partners launched as an Academic Health Sciences Centre (AHSC) in 2009. As an engine room of high impact innovation, our reach extends from insights into disease mechanisms, transformative diagnostics and into new therapeutics, novel devices, digital tools and models of healthcare delivery. We add further value through our partnership by delivering improvement through integrating mental and physical healthcare, value based healthcare, publishing our outcomes, global health programmes and joined up informatics. As we move into the final stages of our 2014-2019 accreditation, we continue to maximise our combined expertise to improve the lives of the people we serve, building on the evidence already provided in our previous four annual reports and looking towards the next five years, 2019-2024.

Our progress with further aligning the strategic objectives of our NHS providers and university to harness and integrate world-class research, excellence in health education and excellence in patient care

Our NHS and university partners are focused on the delivery of our shared clinical academic ambitions to improve outcomes and experience for patients through a powerful combination of world-class research, excellent clinical practice and education and training. By bringing these together through 22 Clinical Academic Groups (CAGs), we provide better and more joined up physical and mental healthcare for our patients and communities. Across our four major campuses in south east London we have aligned our estates' strategies to ensure a coherent future model working as a single entity with a common strategic vision.

The most significant step we have taken as a partnership is the establishment of five new clinical academic institutes in Cardiovascular, Women & Children's Health, Neurosciences, Haematology, and Diabetes, Obesity & Endocrinology. The institutes build on our CAG model to improve translational research and improve outcomes for patients, staff and students. Our partners have committed nearly £9m to create this integrated model of clinical academic strength.

Working in partnership with the south east London Sustainability and Transformation Partnership (STP) we are transforming the way we work to reduce health inequality, improve prevention and increase the focus on health outcomes data for the whole population. Working closely with our local Academic Health Sciences Network (AHSN), the Health Innovation Network (HIN), and Kent, Surrey and Sussex AHSNs to improve translational learning, share innovations and build stronger networks of care to maximise our collective strength and deliver on key priorities in the NHS Long Term Plan and Life Sciences Industrial Strategy.

Summary of progress in key themes 2018/2019

World-class research

Our clinical academic offer, connecting biomedical research, translational studies and clinical delivery, along with industry partners (SMEs to multinationals) delivers a world-class offer for patients, staff, students, partners, and the economy.

Our AHSC has been a catalyst for embedding world-leading research in key specialities within NHS clinical services and integrated infrastructure with the university. Annually we top the table for combined patient volumes in clinical trials, with 38,000 patients participating in clinical trials last year. Supported through a collective research income of £245.5m in 2018/2019, up 38% from 2017/2018.

We host two of the UK's 20 National Institute for Health Research (NIHR) Biomedical Research Centres (BRCs), leading for the UK on mental health and neurosciences, and advanced therapies.

In 2018/2019 there has been notable achievements in securing major funding grants, highlights include,

- €117m EU-AIMS-2-TRIALS consortium for autism research, representing our largest ever single grant and the largest grant ever given for autism research
- £14m investment to form a new Cancer Research UK City of London Centre
- €26.8m to fund diabetes research, in partnership with 22 other academic and industry collaborators, to examine collective data from more than 100 clinical trials over the next four years
- £15m Wellcome Innovations Flagship in Psychosis
- £10m Innovate UK London Artificial Intelligence and Medical Imaging Centre for Value-Based Healthcare
- £6m British Heart Foundation Centre renewal
- £5m Wellcome Clean Room Medical Devices Manufacturing Facility
- £4.7m to improve palliative care for people with dementia, the largest ever research grant in this field.

We have made major recruitments the fields of population health, frugal innovation and child health.

Significant high impact patient-centred developments in 2018/2019 include: RADAR-AD to use digital technology to assess the progression of patients with early Alzheimer's Disease, €2.1m funding to create an international network to better understand and treat sickle cell disease, a new Centre for Inflammation Biology & Cancer Immunology (CIBC) launched, and we are part of a major new study leading to a ground-breaking treatment for peanut allergy.

Excellence in health education

Our Education Academy published its 2018 annual report, highlighting key achievements across the CAGs and partners. Our online Learning Hub was relaunched in 2019, offering regional and international audiences

new learning modules including Understanding Dementia, Understanding and Prescribing Chemotherapy, and Medicines Adherence training. It also provides a platform for postgraduate courses, conferences and continuing personal and professional development activities.

Our new Postgraduate Certificate (PG Cert) in Advanced Medical Training (Children's Health, Haematology or Women's Health) has been approved and is now being marketed nationally and internationally. The first students will be enrolled in September 2019. A new, international education and training brochure has attracted significant attention from global partners. And a series of highly successful educational conferences was held, including the student-lead Clinical and Academic Research Society national conference, Safety Connections conference, neuroscience nurse conference, Realising Your Potential event, and the launch of the Centre for Adherence Research and Education (CARE).

Excellence in patient care

Our CAGs are the collaborative vehicles through which our tripartite mission for excellence in care, research and education is delivered through our partner organisations. Our five institutes represent the next stage in the evolution of our CAG model. Focusing on achieving internationally competitive outcomes in research, education and clinical practice, and developing regional networks of care and engagement to improve outcomes and experience for patients across the south of England.

In some cases, our institutes have begun to test the methodology for working as fully integrated clinical academic 'One Teams' to further break down barriers between NHS and university working, and to improve care and research pathways. Examples include,

- Cardiovascular teams working jointly to reduce waiting times for patients in need of surgery and improving patient survival rates, continuing work on an integrated heart failure service, carrying out world first surgical techniques, and developing a revolutionary new blood test for detecting heart attack
- Haematology staff working as 'One Team' to improve care for people with blood diseases, supporting patients with their mental health, and using novel therapies to deliver world first treatments
- Neurosciences research is being consolidated to tackle the complexity of the nervous system and the vast array of conditions and disorders that can affect it
- In diabetes care, we are leading an NHS England-funded pioneering new service for people with type 1 diabetes and disordered eating (sometimes known as Diabulimia). We are using new technology and data to give us a clearer picture of the scale of the needs of local people across Lambeth and Southwark. In addition, the findings of our research on practical ways to increase the uptake of patient education in diabetes has been directly applied across south London through the new Diabetes Book & Learn programme, in collaboration with the HIN
- Taking a different approach in recognising and addressing the links between women and children's health, we are combining the significant clinical academic strength across our partnership in this area to improve outcomes nationally and internationally
- Building on our strengths in understanding, identification and treatment of mental health problems in children and young people, we are working collaboratively to transform research, clinical innovation and education across mother and baby, brain development, and contemporary childhood through a new clinical research facility focused on Child and Adolescent Psychiatry and Forensic and Neurodevelopmental Sciences – the Centre for Children and Young People's Mental Health.

We are part of the London South Genomic Laboratory Hub, one of seven newly commissioned genomic laboratory hubs across the country announced by NHS England. This network will be one of the largest providers of genomic testing in the UK, delivering services to south London, Kent, Surrey and Sussex, as well as providing a national centre for specialist testing for cardiology, gastro-hepatology, haematology, neurology, respiratory and skin conditions.

Integrated mental and physical health (Mind & Body)

Our partnership is the leading voice in the UK for integrating mental and physical health through a unique combination of research, teaching and clinical expertise.

We have now screened more than 65,000 physical health patients for anxiety and depression across 60 acute outpatient clinics, a 17% increase from the end of 2017/2018.

COMPASS, an innovative project delivering online Cognitive Behavioural Therapy tailored for long-term conditions, was launched as a 12-month pilot in May 2018. Our model of integrated BioPsychoSocial care has proven effective at improving patient and system outcomes in diabetes, Chronic Obstructive Pulmonary Disease, heart failure and hypertension. In 2018/2019, we launched a new project to scale this model to blood cancers and sickle cell disease, as part of King's Health Partners Haematology, with funding from Leukaemia UK. Similarly, we have secured funding from the Burdett Trust to improve mental health screening and pathways within men's sexual health services.

Funding was secured from the Maudsley Charity for a three year Integrating our Mental and Physical Healthcare Systems project which will focus on closing the mortality gap for mental health patients with chronic and acute physical ill health.

We continue to focus on staff development and training. Mind & Body materials are embedded within all trust corporate and medical inductions. In 2018/2019, nearly 5,300 King's Health Partners staff received this content, more than 1,100 people took part in training sessions, and more than 200 people completed Mind &

Body e-learning. More than 12,000 staff, patients and members of the public signed up to our new massive open online course (MOOC), 'Integrating Care: Depression, Anxiety and Physical Illness'.

We have also supported work across our partnership to care for staff health and wellbeing. Working with the Mind & Body Champions Network, a team-based health and wellbeing toolkit has been made available to all staff. More than 90% of feedback so far strongly agreed or agreed that the toolkit helped them feel more confident in understanding how to support their own or their colleagues' wellbeing and feel they were able to make a positive change.

600 staff have signed up to be part of our Mind & Body Champion's Network. This year we engaged with nearly 1,000 local patients, service users and carers in the development of our projects and programmes. King's Health Partners has become a member of Equally Well UK, a new collaborative to support the physical health of people with mental illness and we hosted the first UK-wide learning event of the year. Led by the Institute of Psychiatry, Psychology & Neuroscience (IoPPN), our partnership has secured further research income to fund work on personalised medicine in psychiatry and the role of cardio-metabolic traits, seizures and stress, and the effects of nutrition on compulsive behaviours.

Value based healthcare

With unprecedented levels of demand facing the health and care system, we want to achieve transformational health improvements that are patient-centred, population-based and sustainable, making the best use of every pound available by focusing on value for patients and carers across the full cycle of care. In the last year, we secured £10m in funding from UK Research and Innovation for a new Centre for Medical Imaging and AI. The centre has been established as part of the UK Government's Industrial Strategy Challenge Fund. It brings together a consortium that includes two universities (Imperial and Queen Mary's University London), King's Health Partners, Bart's Health, multinational industry (Siemens, NVIDIA, IBM, GSK), 10 UK-based SME's and the HIN, to provide faster diagnosis, personalised therapies and effective screening for patients. The Centre will train sophisticated AI algorithms from a vast wealth of NHS medical images and patient pathway data to create new healthcare tools. With a focus on using our experience in value based healthcare to examine how AI can be used to optimise triage and target resources to deliver significant financial savings for the NHS and healthcare systems overall.

To further improve value and reduce health inequalities we are working on the Vital 5, an innovative new approach to population health. The Vital 5 are obesity, smoking, harmful drinking, controlling blood pressure, and identifying and improving poor mental health. We are engaging with people across health and care on the Vital 5 including, local people, Healthwatch organisations, teams across primary, community and secondary care, local authorities, as well as regional and national bodies. Our submissions to Public Health England on alcohol and smoking were reflected in NHS Long Term Plan.

Additional work calculating value is prioritised in three local key areas, cardiovascular, orthopaedics and depression in older adults. Our innovative approaches, underpinned by powerful informatics and analytical capabilities, will support the development of meaningful and consistent patient-centred metrics. These metrics quantify the potential impact that investment decisions have on patients, carers, the local health economy and wider society; ensure that the mental, physical and psychosocial needs of people are treated as one and; evaluate and learn from the outcomes we achieve through research and transparent use of data to reduce variation.

17 of our 22 CAGs have now published Outcomes Books, which evidence a wide range of clinical, research and education delivery, as well as providing powerful benchmarks against which to measure future progress. We are developing Outcomes Scorecards, which will form an important part of our strategy for supporting CAGs and institutes to drive value by identifying opportunities for improvement.

In orthopaedics, the South East London Orthopaedics Network have agreed a shared approach to collecting patient-reported outcome measures (PROMs) informed by our work, results have been accepted for publication in *BMJ Open Quality*.

A new Alcohol Care Team, run jointly by our partners, has reduced alcohol-related admissions and the average length of stay for patients with alcohol problems since its launch in November 2018, recently winning Mental Health Team of the Year at the BMJ Awards. This work has been put forward by the HIN for consideration for regional or national spread via the AHSNs.

Global impact

The King's Centre for Global Health & Health Partnerships launched their 10-year strategy and global volunteering scheme in 2019. The strategy sets out how we will deliver our ambition to strengthen healthcare and outcomes in Somaliland, Sierra Leone, DR Congo and Zambia. The scheme provides exciting opportunities for King's Health Partners staff (clinical and non-clinical) to volunteer time and skills.

There have been many additional achievements this year:

In DRC, we have successfully implemented Primary Trauma Training– the training has been handed over and is now led by Congolese colleagues. In Sierra Leone, we have improved care for patients with fever, completed a comprehensive baseline analysis of the surgical system and provided leadership for the national programme of referral coordinators across government hospitals. £2m of funding was awarded by the NIHR to improve rehabilitation care for stroke patients and support for their families. In Somaliland, we have worked with partners to develop the first national medical education policy, to harmonise medical school final assessments and to run a Health Professional Education course.

We continue to work with international colleagues to share our learnings as an AHSC. This year we have supported colleagues in Denmark, China, Singapore, Australia and Malaysia as they explore ways to translate our model and replicate CAG infrastructure in key specialties. As a member of the European University Hospital Alliance, we have hosted pathway and outcomes working groups and secured funding of €230k for pathway work and publications.

Development and delivery of e-Health informatics platforms

Our data ambitions continue to be realised and grow. Building on recent successes (One London, HDR:UK and our AI Centre) and working in partnership with organisations across London, including the London AHSCs, we are building towards London becoming a health data capital of the world.

We are one of six national sites as part of HDR:UK- a collaborative partnership combining the knowledge and skills of London's leading universities, the NHS and industrial partners. Our Centre for Translational Informatics (CTI) is a core component of HDR London.

We play a key role, through the pan-London AHSC/N Executive, in the governance of pan-London digital initiatives such as One London (Local Health and Care Records Exemplar) and digital innovation hub bids. The flagship DigitalHealth.London Accelerator programme is in its third year, with our partners supporting the development of a number of their 95 small digital health companies. Our staff are also benefiting from the DigitalHealth.London Digital Pioneers programme, developing digital transformation skills in NHS staff. We continue to make significant progress in joining up electronic patient records across our local healthcare system. The award-winning Local Care Record has been accessed more than 4 million times supporting professionals to provide joined up care across a population of 1.7 million. In July 2019 the system will link with social care information. We are using our novel informatics platforms and search engines, CRIS and CogStack - pioneering technology developed in-house, to text-mine electronic patient records, improving the quality and safety of our patient care and research capability.

Our contribution to economic growth and the economy, including through partnerships with industry

We continue to attract commercial partners to co-locate with our research and patient populations to accelerate innovation and increase opportunities to facilitate the flow of ideas, innovation and collaboration. Building on our existing clinical academic strengths and infrastructure, we are attracting industry partners in the life sciences sector to drive health and wealth that will improve patient outcomes, benefit our local communities and drive better population health. Our plans to develop a Biomedical Hub at our Guy's campus have already secured key industry partners including, UCB, Unilever and GSK, and we are working with Siemens, Medtronic and a host of SMEs, to further develop a MedTech Hub at our St Thomas' campus. We have signed a three-year deal with global biopharmaceutical company UCB to co-locate researchers and academics with a focus on early development and translational medicine. Agreed a collaboration and licence deal that could lead to a new class of pain medications with Wellcome and MSD. And seen success from recent spinouts with major external investment from industry partners such as Leucid, Quell and IgEM. GammaDelta Therapeutics Ltd, is an example of a CAG founded innovation, involving pioneering research into gamma delta ($\gamma\delta$) T cells that received up to \$100m investment from Takeda and Abingworth.

Our governance arrangements

Our AHSC is led by the King's Health Partners Joint Boards, chaired by our University Chancellor and Principal, and consists of our partner chairs and chief executives, and four NEDs from government, science and industry. This arrangement provides leadership and stability to our local health economy in a way that would previously not have been possible. These arrangements are also mirrored at levels beneath the Joint Boards, with cross-partner meetings of senior executives through our CAG Oversight Group, the Education Council, and CAG Leaders meetings. Our institutes are overseen by a Programme Board chaired by a NED or executive director from one of our partner organisations.

We have positioned ourselves as system leaders in the local health economy and built effective working relationships with other system partners such as MedCity, our fellow AHSCs, the south London ASHN, the Clinical Research Network, the Collaboration for Leadership in Applied Health Research and Care (now ARC), and the Francis Crick Institute.

We continue to work with Royal Brompton & Harefield NHS Foundation Trust on partnership proposals to revolutionise cardiovascular and respiratory services for patients. A Partnership Board between King's Health Partners and Royal Brompton & Harefield NHS Foundation Trust was established in 2017.

Conclusion

In conclusion, it has been a hugely effective year for the AHSC with considerable achievements. Our partners believe in the added value of the AHSC and are committed to its future and the outcomes we will achieve together through close strategic alignment. We have jointly begun discussions and planning to support the development of the next King's Health Partners five-year plan 2019-2024, aligned to any re-accreditation response requested by the NIHR.

We look forward to working with the Department in the coming months on developing this future strategy, enabling AHSCs to continue in their mission as engine rooms of high impact of innovation, necessary to support the UK's track record in the life sciences sector and the NHS Long Term Plan.