Academic health sciences centres:
an opportunity to improve services, teaching, and research

Academic health sciences centres (AHSCs) are organisations that hold a joint and equal responsibility for the delivery of healthcare, education, and research. Since the renaissance of clinical science — most embodied in the writing and lectures of William Osler while at Johns Hopkins University and Regius Professor of Medicine at Oxford a century ago — the combination of scientific method and clinical care has been seen as the fastest means of ensuring that scientific advances are translated into improved patient care.[1]

The AHSC has flourished in North America in particular, where such institutions as Johns Hopkins, Harvard University, and the Mayo Clinic are world-renowned. Yet, in spite of having 16 universities in the world's top 100, the UK has failed to capture the clinical research agenda to quite the same degree. Although both universities and the NHS are largely publicly funded and have a long tradition of joint working in teaching and research, UK universities have tended to focus on the research assessment exercise, teaching and more basic research, while the NHS has been most occupied with service delivery and applied research.

The establishment of five AHSCs in the UK last year after a competition judged by an international panel, represents an attempt to regain this lost momentum.[2] Imperial College Healthcare NHS Trust, King's Health Partners, University College London Partners, Manchester Academic Health Science Centre, and Cambridge University Health Partners were successful in the competition, and their progress will be reviewed after 5 years. With no additional funding, the academic and NHS partners in these five centres have pledged to combine strategy, operations, and in some cases finance, to deliver innovation in teaching, research, and service delivery.

AHSCs AND GENERAL PRACTICE

So what does this apparently 'academic and specialist centre dominated' exercise mean for general practice? With the UK coalition government's announcement last month of sweeping changes in the NHS, AHSCs should now have a crucial role to play in developing care pathways and evaluating new services in cooperation with their local GPs.[3] This can only be a good thing for both clinicians and patients.

In 20 years, a previously close working relationship between GPs and consultants moved to a awkwardly competitive one regarding fundholding; and then to an increasingly distanced one, mediated by electronic bookings, one-stop services, and the anonymity of targets. 'We just don't talk anymore', has been the feeling on both sides of the divide. The result of this has been a fragmented service where patients often get caught between primary and secondary care, neither side clearly understands the role of the other.

What investigations for work up or monitoring should be done by whom? What has the patient been told and who is responsible for follow up? We seem to have neither the benefit of a swift telephone call, nor the long promised advantages of seamless electronic care.

PRIMARY AND SECONDARY CARE PARTNERSHIPS

The new NHS reforms could be simply another bout of managerial role shuffling and more fragmentation, or they could offer the flexibility to allow genuine partnership between the different health sectors. AHSCs can expand their remit to encompass primary care, while providing appropriate working models for GPs and their staff. In the US, a typical AHSC will be supported by a surrounding healthcare system with community clinics and family physicians. The advantages of common pathways, integrated technology, and joint governance would be increased patient satisfaction and less duplication, waste, and confusion.

The challenge is for us to bridge the 20-year divide between primary and secondary care and to establish a greater degree of trust than has often been the case. The health and wellbeing of our patients and population is a joint responsibility of primary and secondary care, alongside community and social care. Improvement in care requires integrated working of providers, particularly primary and secondary care, with close collaboration and co-ownership of outcomes.

Evidence from healthcare systems around the world shows that integrated care, supported by effective clinical information systems, is better able to achieve patient and organisational goals, such as optimal clinical care pathway design and implementation; greater commitment from healthcare and social care professionals involved in an individual's care; a shift in the mind-set of staff to focus on the performance of the system rather than the institution; better use of resources; achievement of public health goals; and more effective commissioning (models of commissioning that incentivise all of the collaborating providers to deliver high quality cost effective solutions).

The importance of integrated care, and the equal partnership between primary and secondary care have major implications for how we think about AHSCs. To deliver improved health and wellbeing, AHSCs need to evolve into academic health sciences *systems*: integrated healthcare delivery systems in which primary care, social care, community care, and secondary care work in partnership, and across which clinical care, teaching, and research are integrated.[4]

TRANSLATION

AHSCs also have a huge potential for translational research. Translation has typically either meant 'bench to bedside' (meaning basic science to first human use) or 'knowledge translation' (meaning uptake of new innovations); but there is an important

misunderstanding in this simple dichotomy. Translation is in fact an iterative and continuous process driven by collaboration and data sharing. Basic science needs to be directed at important clinical questions, and informed by clinical need.

These questions are just as widespread and important in community practice as they are in hospitals, and usually both sectors are linked, but they look at slightly different aspects of the same core problems.[5] For example, the comprehensive Biomedical Research Centre at Kings Health Partners has an important cohort of patients undergoing renal transplantation, where aspects of immunology and biomarkers predicting increased risk of rejection are important. In general practice, moderate renal impairment is common and much effort is put into monitoring, which aims to prevent progression to renal failure. Better understanding of factors influencing progression in mild–moderate renal impairment, beyond just blood pressure and HbA_{1c}, would help to target interventions more cost-effectively, but can only be obtained by 'bench to community' translation.

The role of shared electronic health records is crucial in fostering both research and the evaluation of care pathways. Changes in the NHS may at last enable joint investment in such infrastructure, rather than primary care trusts and acute trusts largely going their own way. Clinical Research Informatics is also developing rapidly as a tool for linking clinical usage of data with research use.[6]

EDUCATION

Finally, we should not forget that AHSCs have an important role to play in education. This is especially important for general practice, as many hundreds of practices will be involved in undergraduate teaching networks, with significant resource commitments. Innovations in e-learning will mean that students may attend lectures via computer from the practice, and joint tutorials can be held with specialists, students, and patients linked in a 'telemedicine' approach. Wider exposure of specialist registrars to patients in the community and a case-based approach to developing learning portfolios for GP registrars, especially if linked to longer training for GPs, would also benefit from greater integration via the AHSC.

It remains to be seen if the AHSCs can survive the financial constraints and reorganisation around them, but we are hopeful that the AHSCs can foster the enthusiasm and collaboration that the NHS and medical academia needs so badly.[7]

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