The NHS’s ability to harness innovation to improve patient outcomes is more important than ever in a tough financial climate. Uniquely among the organisations supporting this agenda, the National Institute for Health Research (NIHR) Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) have integrated research and implementation to ensure findings improve practice in real time. They carry out high-quality applied health research and support getting research evidence into practice in the NHS. It has been said that getting research into practice takes 17 years; CLAHRCs have shown that it’s possible within three years through collaborative partnership working. They provide a powerful model to connect innovation, evidence and implementation.

The NHS Confederation has been closely involved in the work of CLAHRCs and continues to host their national support function. This Briefing describes the CLAHRC approach and their impact to date as well as the factors that continue to contribute to their successes.

Key points

• CLAHRCs are patient focused and service led: NHS and social care partners identify the key areas to be addressed by the collaboration.
• The nine CLAHRCs adopted a range of approaches but have a common understanding of challenges and solutions to achieving these goals.
• All have had success in encouraging academics to respond to NHS needs and in persuading the NHS to develop its research and implementation capacity.
• All have formed and sustained strong partnerships between the health service, academia and other partners.
• Finally, all have adapted to the changing financial landscape and shown evidence of new ways of working.

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Background

The NIHR set up nine CLAHRCs as partnerships between at least one university and surrounding NHS and other partner organisations in October 2008. Their three main aims are to:

• conduct high-quality applied health research to generate knowledge to improve patient health and care
• implement findings from research in clinical practice for patient benefit
• increase the capacity of NHS organisations and public, private and third sector partners to engage with and apply research.
Core funding – typically £5–10 million over five years – was provided by the NIHR and was matched by local partners. Current funding will end in October 2013, and plans for further funding for CLAHRCs are awaited.

The NIHR did not define a single CLAHRC model. Each has evolved from different starting points and with different capacity and resources reflecting their local circumstances. They have operated across a range of research and implementation themes. Some already had established priorities, and began with a clear sense of what their research portfolio would comprise; others allowed priorities and projects to emerge. In the majority of cases, a combination of these two approaches was adopted.

What difference have CLAHRCs made?

Collaboration before CLAHRCs
Since its creation in April 2006, the NIHR has supported collaborations between academia and NHS researchers to ensure the research it funds is of the highest scientific quality. Some degree of collaboration between NHS organisations and academic researchers existed in all nine CLAHRC regions before the CLAHRCs were set up: that was an NIHR prerequisite for consortia submitting applications. However, CLAHRC directors typically describe this regional cross-sector collaborative working as patchy and lacking the infrastructure needed to bring together partners systematically. “It was collaboration by happenstance,” says Professor Stephen Smye, director of NIHR CLAHRC for Leeds, York and Bradford.

Often collaboration was driven by an emphasis on biomedical research rather than applied health service research. “There was a real need to undertake research that responded to local priorities and needs within partner organisations, exploring methodologies that engaged both clinicians and service users,” says Professor Sue Mawson, director of NIHR CLAHRC for South Yorkshire.

Initiatives tended to be local and small-scale, reliant on being championed by a handful of keen individuals.

Since CLAHRCs
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The NIHR funds NHS social care and public health research driven by the needs of the NHS. The creation of the CLAHRCs has

Case study 1

Improving care for chronic kidney disease: a collaboration between NIHR CLAHRCs for Leicestershire, Northamptonshire and Rutland (LNR) and Greater Manchester

Chronic kidney disease (CKD) affects 6 per cent of the adult population, with patients having a greatly increased risk of stroke, heart attack, renal failure or death. The collaboration realised that fewer people were diagnosed with CKD than expected prevalence would suggest.

LNR CLAHRC developed a software tool capable of extracting clinical data from GP practice systems. This produced a detailed audit of patients eligible for inclusion in practice CKD registers and identified patients at risk of deteriorating kidney function. NIHR CLAHRC for Greater Manchester was already undertaking an improvement programme with general practices to identify and manage patients with early stage CKD, aiming to reduce the gap between the recorded and the estimated prevalence of CKD by 50 per cent, and to ensure 75 per cent of registered CKD patients were tested for proteinuria and treated according to NICE-recommended blood pressure targets.

The first 12-month programme identified 1,324 additional patients with CKD across 19 GP surgeries in Greater Manchester. Numbers being treated to recommended blood pressure targets improved from 34 per cent to 74 per cent. Greater Manchester used LNR’s auditing tool in their second programme to help GPs identify and manage people with early-stage kidney disease. This programme, in another 11 surgeries, identified an additional 539 patients – significantly more than practices were challenged to identify. Teams got 83 per cent tested for proteinuria and managed according to blood pressure targets. Identification of patients was achieved much more quickly and effectively by using the LNR tool, enabling practices to focus on the testing and blood pressure control aspects, which are challenging.

LNR has gone on to work with other GP practices across the country to improve early CKD identification and the Greater Manchester approach to improvement is also being made available more widely.
helped to redefine the relationship between the NHS and academia around applied health research, use of research evidence and implementation.

1. Generating knowledge

CLAHRCs have recruited over 40,000 patients to more than 200 research projects to improve care for patients across a wide range of physical and mental health conditions (figures as of September 2010). The collaborations are also working together at a national level across shared themes to ensure findings from one region can be implemented in another part of the country (see case study 1).

Professor Mike Cooke, chair of NIHR CLAHRC for Nottinghamshire, Derbyshire and Lincolnshire’s board and chief executive of Nottinghamshire Healthcare NHS Trust, says: “The CLAHRC is driving our research focus further and faster, giving it scale and capacity to do more things. It’s got to places where they had to learn about research and become research aware.” (See case study 2.)

With CLAHRC support, research studies are being designed in new ways with a wide variety of stakeholders helping to set research questions.

Improving involvement of patients and public in the research has been central to the CLAHRC approach. There is more work to do but most CLAHRCs have a clear patient and public involvement (PPI) strategy and regard it as integral to their work and a strength of their programme.

2. Implementing evidence

CLAHRC implementation initiatives have produced a range of measurable improvements.

NIHR CLAHRC for the South West Peninsula invested in PPI, a quarter of its projects have been generated by service users. “It transforms what you feel about your research when a patient says this is what we want done,” says director Professor Stuart Logan.

Faith Harris-Golesworthy is a member of Peninsula’s Public Involvement Group. Reflecting on her involvement in all phases of the research process, she says: “It’s been great to meet on equal terms with clinicians and other health providers, thus informing them of the presence and importance of PPI in research. I feel we were a ‘grounding’ influence, bringing reality to research.”

A new study is evaluating the effect of providing individualised feedback to junior doctors. This will test the idea that informing doctors they have high rates of prescribing errors compared to their peers will result in improved performance. They also found that the majority of computer generated error messages are ignored as doctors experience ‘alert fatigue’. A more selective approach to reduce alert fatigue is now being designed.

“CLAHRC implementation initiatives have produced a range of measurable improvements”

Case study 2

Curbing medication errors: NIHR CLAHRC for Birmingham and Black Country

This project set out to improve patient safety by using University Hospitals Birmingham NHS Foundation Trust’s electronic prescribing system. It examined whether small errors detected by the system could help identify doctors at higher risk of making a serious prescribing error. Nearly one million prescriptions issued by junior doctors were analysed over 12 months, during which more than one million prescribing alerts were generated. Of these, 83 per cent were low-level and 1 per cent were high-level alerts.

Results showed very little correlation between a doctor’s propensity to make serious and minor errors. Large differences existed in the tendency to make major prescribing errors among doctors, even in the same specialty. But those who make small errors are not the same as those who make large errors – which argues against the idea of a “sloppy doctor”.

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Other examples of research improving care for patients are described here in case studies 3, 4 and 5.

CLAHRCs are increasingly working across the NIHR infrastructure to support the evaluation of lab-based research.

Professor Richard Lilford, director of NIHR CLAHRC for Birmingham and Black Country, pointed to one project on the early identification of psychosis and how it demonstrated the beneficial effect of early detection and intervention. Mental health services have been redesigned as a result, and the project is now being followed up internationally.

### Case study 3

**Devising and implementing a chronic obstructive pulmonary disease care bundle: NIHR CLAHRC for North West London**

Chronic obstructive pulmonary disease (COPD) is the UK’s fifth leading cause of death and the most common cause of hospital admission and readmission, costing the NHS £600 million a year. This project aimed to improve the safe discharge of patients and patient experience.

A care bundle combines elements of evidence-based guidelines and enables staff to ensure they are complying with key clinical procedures. The COPD discharge care bundle was based on NICE guidelines, a systematic literature review and collaborative working with staff from the Chelsea and Westminster Hospital's respiratory ward and primary care sites, as well as with patients through the local Breathe Easy group.

The bundle allows patients who are being discharged to verify with the nurse that they have received all the appropriate elements of COPD care. A follow-up phone call was incorporated into the bundle after a patient survey suggested this is when they feel most vulnerable and often have to wait several weeks before a follow-up appointment. Most North West London hospitals are using the bundle, and it has potential to be adopted nationally.

Acute admissions for COPD were reduced by 19 per cent and readmissions by 66 per cent. This resulted in a cost saving of 21 per cent.

### Case study 4

**Joint working between psychotherapists and psychiatrists to improve care for chronic mood disorder: NIHR CLAHRC for Nottinghamshire, Derbyshire and Lincolnshire**

The Mood Disorders project team have led in the production of locally-applicable NICE guidelines in use of therapy. The team designed and implemented a unique system for joint working between psychotherapists and psychiatrists that allows the effective delivery of ‘stepped care’ for unipolar depression. A formal proposal has been submitted to local commissioners for a service plan and as a measure of the perceived benefits of the CLAHRC evidence the study is now running in new sites in Derbyshire and Cambridge.

The closer working between psychiatric teams and psychotherapists within the study has led to each having a better understanding of the others’ treatment, thus highlighting attendant risks and compatibility issues for example between medication and engagement in therapy.

This has already had the direct result that those participants in the specialist treatment arm are able to access more psychological treatment and follow simpler drug regimes than their previous therapies and compared to treatment as usual. This combination of treatment reduces the risks associated with drug side effects and increases patient safety.
Briefing 245  Integrating research into practice: the CLAHRC experience

Integrating research into practice: the CLAHRC experience

3. Building capacity

Through a wide range of training activities, fellowships, secondments and graduate research positions, CLAHRCs are equipping NHS staff and academics alike with the necessary research skills and opportunities to generate research evidence to improve care.

Notable examples include:

• NIHR CLAHRC for North West London has offered extensive skill building opportunities in research and evidence-based quality improvement in health settings across the region. Their Collaborative Learning and Delivery programme has resulted in the launch of an MSc in Improvement Science, developed with the University of West London, which combines practical training in quality improvement methodologies with real service improvement initiatives.
• NIHR CLAHRC for Leicestershire, Northamptonshire and Rutland

Case study 5

Delivering psychological therapies by telephone – convenience combined with cost effectiveness: a collaboration between the NIHR CLAHRC for Cambridgeshire and Peterborough, NHS East of England and Relate

Analyses indicated that, for all but those with the most severe problems, therapy delivered over the telephone was not only as effective but around 30 per cent cheaper for services in addition to wider benefits in terms of convenience. Rather than being published simply as a technical report, this new knowledge was pulled through into services by an eager community of service providers with support from the CLAHRC. IAPT services in the region were able to target their therapies more precisely as a result. A partnership has now been developed with the charity Relate to co-develop an evidence-based educational programme for telephone-based therapy to be rolled out nationally.

Case study 6

Implementing tranexamic acid for trauma patients: NIHR CLAHRC for the South West Peninsula

Tranexamic acid (TXA) is a blood-clotting drug found in an NIHR-funded trial of 20,000 people to reduce risk of death in patients with severe bleeding by up to 30 per cent if administered within three hours. Using TXA is routine practice for military trauma teams, but is seldom used in the NHS.

The CLAHRC worked with South Western Ambulance Service Trust and local acute hospitals to introduce TXA for use by paramedics, nurses and doctors. TXA is cheap (an adult requires two 500mg ampoules at £1.55 each), yet it is estimated it could save 400 lives a year in the UK and reduce the burden of trauma-related disability.

Adrian South, deputy director of clinical care for the ambulance trust, says: “By working in collaboration with the CLAHRC, we have been able to introduce the medicine far earlier than would have otherwise have been possible.”

biomedical research findings that have shown potential to benefit patients (see case study 6).

Industry partnerships have also emerged as an important means to tackle shared priorities to improve care for patients (see case study 7 on page 6).
Case study 7
Promoting better healthcare for people living with long-term conditions: NIHR CLAHRC for South Yorkshire
Bosch is the biggest supplier of telehealth in the USA both within the Veterans Administration Hospitals and Medicare, but they have continued to experience difficulties moving into the UK market. In 2010, they approached NIHR CLAHRC for South Yorkshire as they believed the CLAHRC was in an ideal position to not only provide a ‘brokerage’ role with NHS partners but also provide implementation and evaluation skills to any telehealth deployments in the region. Therefore when Bosch Healthcare Ltd launched a major independent telehealth project in Barnsley, the CLAHRC was an ideal partner to undertake the evaluation with the University of Sheffield alongside NHS Barnsley and Barnsley Metropolitan Borough Council.

Launched in late 2010, the joint initiative in phase one sees local patients trial the use of the Bosch Telehealth Plus monitoring system, which is designed to enable healthcare professionals to monitor the condition of their patients remotely, allowing those patients to maintain their independence, and self manage their chronic illness with fewer visits to the clinic, improvement in their quality of life and reduced healthcare costs.

As part of this partnership work with Bosch, the CLAHRC undertook a full systematic review of the VA evidence base around telehealth and this work informed a 2012 national publication titled Telehealth – What can the NHS learn from experiences at the US Veterans Health Administration? by John Cruickshank.

What factors have helped CLAHRCs succeed?
Strong partnerships and sustained ‘buy-in’ from the local health economy have been key to CLAHRC success. Professor Mike Cooke says “engagement levels clinically and managerially are as good as I’ve seen”. Matched funding has helped sustain stakeholders’ interest and commitment, and encouraged sound governance. The extent of the funding and its flexibility has also helped: the in-kind contribution in the form of dedicated staff time has proved as valuable as cash. “It’s a great model,” says Professor Rachel Munton, director of NIHR CLAHRC for Nottinghamshire, Derbyshire and Lincolnshire.

A multi-professional core team has proved “an incredibly rich environment for ideas” in North West London, says Professor Derek Bell. It assimilates information from outside and shares it internally, while members use their skills and knowledge to bridge the gap between academics and clinicians. “That’s taken two-and-a-half years to build. You can’t construct a CLAHRC in six months.”

South West Peninsula first focused on “laying the groundwork for relationships”, says Professor Stuart Logan. “We’ve set up a system to ask decision-makers very explicitly, what’s driving you bonkers? Then we check for existing evidence or whether we need to do some research. That way we have a much better chance of coming up with something that can be implemented, rather than telling people what they should
do. That’s what should be at the heart of a CLAHRC – interaction between people generating or synthesising information and those who will use it.”

Professor Ruth Boaden, deputy director of NIHR CLAHRC for Greater Manchester, highlights the need for getting academics to understand their local NHS. CLAHRCs need to involve NHS managers, be able to “speak the language of the NHS” and know how to navigate its landscape, keeping up with the speed of change there.

Ultimately, CLAHRCs have found success because the NHS needs research to improve the services it delivers and bring practical benefits to patients. “People want a research culture in their organisations because if we’re more research-oriented we will have more innovative, high-quality services,” says Professor Mike Cooke.

Responding to the changes in the health service

NHS reorganisation against a backdrop of efficiency savings and increasing demand has undoubtedly presented challenges for all partners involved in the CLAHRC programme. The collaborative nature of CLAHRCs, where NHS partners are involved throughout the process and priorities are reviewed on an ongoing basis, has resulted in a responsive and more effective partnership.

Professor Hilary Chapman, chief nurse and chief operating officer at Sheffield Teaching Hospitals NHS Foundation Trust, reflects: “CLAHRC for South Yorkshire has been able to react to changes we’ve had in the clinical environment and not be pushed off course. For me, that’s dealing with the real NHS. That’s how we are day to day – things move quickly and change quickly. The CLAHRC is almost like a living experiment that responds to how the environment changes around it, and is still successful and manages to deliver changes to services and patient care.”

On a commissioning level, when NHS Bradford and Airedale were reviewing how to organise services for inpatient admission for adolescents with eating disorders, they asked the Centre for Reviews and Dissemination, working with NIHR CLAHRC for Leeds, York and Bradford, to evaluate the evidence base to support a possible reorganisation of services. A review of available evidence and discussion with local stakeholders resulted in the conclusion that specialist outpatient provision was the most cost-effective option. This work enabled the Bradford District Care Trust to reconfigure the eating disorders service, incorporating a budget impact analysis.

Rob Grant, senior partnership commissioning manager at NHS Bradford and Airedale, says: “The evidence briefing encouraged us to think differently about how we provide services and gave us the confidence to commission more services for young people with eating disorders and their families closer to home. This will save money by making best use of NHS funds to provide the most appropriate treatment.”

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Four challenges

1. Overcoming institutional inertia was the first challenge: it takes time to engage people with diverse professional backgrounds in a common agenda that involves working differently. CLAHRCs had to reconcile multiple languages, multiple viewpoints and disparate priorities in a quest for mutual understanding.

2. Maintaining matched funding has been both a challenge and an opportunity to cement relationships. One director describes a long period of planning blight that slowed implementation plans when the entire local health economy experienced significant financial problems. Many CLAHRCs have brought in new partners to respond to funding constraints.

3. Ensuring CLAHRCs are on the radar of NHS middle managers responsible for running services has not always been easy – “reminding them to think ‘CLAHRC’ when they are contemplating big service challenges so they realise it can help with the day job”, as one director put it. New learning and advancement opportunities through secondments and fellowships have helped bring in and support NHS managers in improving the delivery of care.
4. A traditional approach of academic research where success indicators include publication and citations is a known challenge. However, CLAHRCs continue to publish in peer review journals at a mean of 22 articles per collaboration (figures as of September 2010). They have also supported a wider range of health professionals to publish their work, thereby widening the reach and impact of their findings.

The future

CLAHRCs were set up as an initial five-year experiment with £90 million of NIHR funding. Their development has attracted international attention, with Australia adopting similar models. It was recognised from the outset that five years would not allow a full programme to develop and be evaluated.

"If CLAHRCs are not funded, the core task remains," says Professor Stephen Smye. "We would have to find another way of doing it and funding it. Getting research into practice is absolutely pivotal. We need to address it for the patient's sake."

Partnership will remain fundamental, according to Professor Richard Baker, director of NIHR CLAHRC for Leicestershire, Northamptonshire and Rutland. "If we go back to being in our different silos, limited to the priorities that face us – service pressures and Research Excellence Framework (REF) goals – we’re going to be less effective. We’ve got to have partnership, and the wider it can be spread the better."

For more information on the issues covered in this Briefing, please contact NIHRCLAHRC@nhsconfed.org

Health Services Research Network

The Health Services Research Network (HSRN) is a membership network for organisations and bodies across the UK with an interest in health services research. We aim to connect all universities, commercial and professional organisations, charities and NHS bodies with an interest in HSR. We define health services research as all research that underpins improvements in the way health services are financed, organised, planned and delivered, including health technology assessments and health policy research.

For further details about HSRN’s work, visit www.nhsconfed.org/HSRN

CLAHRC Support Programme

The NHS Confederation’s CLAHRC Support Programme supports the nine NIHR CLAHRCs to identify common implementation themes and issues, and to work more effectively across their geographical and organisational boundaries.