NIHR CLAHRC
South West Peninsula

NHS
National Institute for
Health Research

NIHR Collaboration for Leadership in Applied Health Research and Care South West Peninsula (PenCLAHRC)

Annual Report for period 1st April 2015 – 31st March 2016

1. OVERVIEW OF ACTIVITIES

The overriding aim of CLAHRCs is to promote the generation and use of patient-focussed research evidence in order to benefit the health of the population. PenCLAHRC has three major objectives:

- To substantially increase the volume and quality of patient-focussed research;
- To facilitate the use of research evidence to inform service delivery to improve health of the population;
- To build capacity within the health economy to generate and use research evidence.

In addition, we aim to promote the growth agenda and to influence the culture of partner NHS organisations towards the more effective use of evidence and amongst academic partners towards a clearer focus on research impact through co-production.

We have set a number of short- and medium-term goals for the CLAHRC to enable us to meet these main objectives and progress against these is summarised in the table ending this section. These goals focus primarily on creating supportive systems, engaging partners, and maximising our research capacity.

PenCLAHRC strategy

Our strategy depends on the development of a clear and strong partnership between decision makers – policy makers and managers within provider and commissioner organisations, clinicians of all disciplines, and members of the public – and academics. This approach is based on our understanding that failure to achieve effective use of research evidence relates to the failure of evidence producers to address the real concerns of these groups and to develop knowledge that is meaningful to them.

We have taken multiple approaches to achieve engagement and deliver this partnership. Representatives of all of these groups, including members of the public, are embedded within organisational structures to ensure strategic decisions are shared by stakeholders. All partner organisations (along with representatives of our public involvement group) have a seat on the Management Board and on the Stakeholder Group that prioritises research questions. The Management Board meets twice a year to advise on strategy, and the extent to which we are reflecting their priorities and capacity needs. As well as health and social care partners we have made a significant effort to engage with third sector organisations and industry. Engagement with all groups is becoming more effective through close partnership working with our AHSN.

We have put in place mechanisms to elicit the "uncertainties" that reflect problems facing decision makers and these are closely linked to our programmes to build capacity amongst partner organisations. Together these activities – mechanisms to capture uncertainties, and development work to build capacity – make it possible for us to extract decision-making needs from complex clinical and policy issues and translate them into answerable questions. These are prioritised against agreed criteria with advice from stakeholders. This process may lead to reviews of evidence, primary research or the development of implementation plans with partners. Throughout we aim to keep the originators of the "uncertainty" involved in the process to ensure that our work is kept practically relevant and impactful.

Applied health research

Our research strategy involves using NIHR funding to provide the human infrastructure that enables us to seek preliminary data (sometimes producing stand-alone studies) and apply for grant funding for definitive studies to address important uncertainties. Our process for identifying potential uncertainties has developed in response to evaluation of the pilot CLAHRC and covers uncertainties in implementation and research. We have more closely aligned this process to our "Making Sense of Evidence" programme so that our activities in improving both the use and generation of evidence are mutually informing and reinforcing. We have identified some broad areas of concern to groups of stakeholders, such as delivery of services in care homes and integration of primary and secondary care for which we have sought to build a shared understanding of the problems and potential solutions with partners as the basis of subsequent activities.

A number of studies begun during the pilot CLAHRC phase continue, many as externally funded projects. These studies have led to many papers in high impact journals. The existence of this legacy has important positive consequences for our relationship with partner organisations. There is often a problem in attempting to reconcile the timescales to which definitive research projects operate with the fast moving needs of the NHS which can lead to tension with partners who find it hard to see the direct relevance of the CLAHRC to their needs. Being able to present them with the results of previously developed projects allows us to demonstrate how these can impact on service provision and hence increase support for our activities.

We have significantly expanded our portfolio of implementation science research. The appointment of two Senior Research Fellows with skills in realist approaches has increased our capacity in this area as has the award of an NIHR Knowledge Transfer Fellowship to Dr Lang. Our joint programme with the AHSN includes the use of ethnographic approaches to evaluating our implementation of evidence-based approaches in the design of acute stroke care and in the use of patient initiated clinics in outpatient services in chronic disease. The moves to establish integrated care sites within the local NHS has provided a further opportunity to develop capacity to understand the implementation of complex interventions spanning primary and secondary care and health and social care.

Our patient involvement group, PenPIG, has a prominent role in everything we do. We continue to seek to answer questions posed by members of the public, including them as partners in study design and as co-applicants on grants.

Improving health through the use of evidence

We work with NHS partners, with private sector providers, the AHSN and Strategic Clinical Networks to increase the effectiveness of services through better use of evidence, building on 2 fundamental principles:

- Our own research attempts to incorporate "implementability" throughout the research process including question selection, intervention design, choice of outcome measures,

research conduct, and research dissemination. The synthesis of evidence, guided by those who will use it, is a necessary but insufficient step in this process. By taking an integrated approach to knowledge mobilisation and involving end users at all stages we focus our efforts on interventions that are not only effective but feasible and acceptable to organisations, clinicians, and patients.

- Context is crucial and design of service improvement strategies is preceded by diagnostic evaluation of potential barriers and facilitators at the levels of system, organisation, team, and individual, with strategies tailored to address these. This process frequently includes the building of operational research models based on real data provided by service partners to test potential interventions. Potential projects are approached by building an appropriate team on the topic area including end users of information, academics, and managers to ensure strategies take account of the best evidence regarding the proposed interventions, knowledge from implementation science, and contextual factors.

Capacity building

Our drive to increase the capacity of staff within the local health economy to use and generate evidence has four main strands:

- ***PhD studentships***
  11 PhD studentships were planned within this period. Funding for a further 4 studentships from the Research Capacity in Dementia Care Programme (RCDCP), specifically aimed at nurses and professions allied to medicine. We currently have 14 students in place with 1 more starting shortly. Two students have successfully passed through the 15 month upgrade process from M Phil to full PhD registration.

- ***Explicit training***
  As part of our drive to build capacity to engage with evidence, and to elicit uncertainties, we deliver training in evidence-based practice, research methods, and operational research. This training is delivered in multiple formats including short courses aimed at all disciplines, bespoke training for teams or groups with a common disciplinary base, and training for members of the public who work with us. In addition to the intrinsic benefits, the relationships developed during these formal teaching sessions have been instrumental in implementation of evidence and generation of research projects.

- ***Health Service Modelling Associates***
  In response to demand from our partners we have established a training opportunity for 6 one year part-time secondments of NHS staff to work on Operational Research modelling projects agreed in their organisations. These provide training in OR skills and answer immediate substantive organisational challenges.

- ***Joint projects***
  Conducting joint projects in partnership with NHS staff addressing uncertainties of direct relevance to their practice is a powerful way of enabling them to develop their research and implementation skills. A large number of PenCLAHRC projects include NHS staff as partners; others work with individuals and groups from other public and third sector organisations.

It is important to note that we regard capacity building amongst academic staff as equally important to capacity building in the NHS. In particular we aim to develop their awareness or practical challenges facing the NHS and their capacity to address questions of direct relevance to users and providers of services, and their interest in doing so, while retaining academic rigour.

Wealth creation

PenCLAHRC's contribution to the wealth creation agenda is both direct and indirect. We work closely with the AHSN as well as on our own to build links with industry and with third sector organisations where we can provide the research skills to appropriately evaluate innovative interventions and to ensure that innovations created within the NHS can be exploited. Our major contribution is through the design and evaluation of more effective and efficient services and public health interventions, freeing resources and contributing to improved population health in ways that have knock on effects for productivity.

Key achievements in the period

1. ***Facilitating the delivery of improved services***
   PenCLAHRC has worked with partners, building on a strong relationship with the AHSN, to use evidence to improve service delivery and patient outcome. Fundamental to these successes has been the development of relationships between academics and those delivering services and the skills that enable academics to work effectively in the world of service delivery. This has required us to work to attempt to deliver real culture change amongst both academics and our service partners.

2. ***Expansion and consolidation of the capacity development programme***
   We have fundamentally reorganised our capacity building programmes and considerably expanded their scope. Our training lead, Dr Vicki Goodwin has overseen the development of communities of practice amongst PhD students and stronger generic training, ensured tighter student supervision and progression, and promoted stronger links with students in other parts of the NIHR infrastructure. The development of our Health Service Modelling Associates (HSMA) programme in response to clear demand from NHS partners will strengthen these close links between our capacity building and service improvement efforts.

3. ***Attracting external grant funding***
   Using our core NIHR funding to attract external grants to undertake definitive research remains a key way of working and have been awarded £13.3M in external grants since the establishment of the new CLAHRC.

Summary of progress against aims

Short Term Aims	
Aim 1	Maximise research output/impact from current PenCLAHRC Projects
Progress	*Obtained £6.5M in external funding and published 77 papers in the reporting period. 2 x impact case studies (TXA & Stroke) featuring in the National CLAHRC Impact Document*
Aim 2	Work with SW AHSN on topic identification and implementation
Progress	*AHSN & PenCLAHRC staff contribute to both prioritisation systems. 7 jointly funded projects, primarily aimed at service improvement. Ongoing discussions at senior level about developing co-production further for 2017/18.*
Aim 3	Identify next generation of prioritised topics for research and implementation
Progress	*61 projects active in 14/15 increasing to 92 in 15/16*
Aim 4&5	Effective links with NHS providers and commissioners, local authorities, public health and social care
Progress	*PenCLAHRC Management Board and the Stakeholder Project Prioritisation system include representatives of all partner NHS Organisations and from public health. Joint projects with local authority PH and education (STARS and HeLP), the Police (ExPERT) and social care*

	providers (Integrated Care Evaluation and Care home interventions (CHIK-P)).
Medium Term Aims	
Aim 1&2&3	Engage NHS organisations, clinicians and the public in identifying key information needs & translating this information into clear research questions prioritised against clear criteria.
Progress	*Conducted 34 Making Sense of Evidence (MSE) workshops for 698 NHS/LA/Police staff, academics, patients and members of the public. 142 elicited uncertainties translated into research questions for the Stakeholder Prioritisation Process. Two Rounds of Prioritisation conducted, resulting in 6 research questions currently being taken forward. Complementary process of priority identification for operational research modelling questions identified 3 pieces of work plus a further 6 taken forward through PenCHORD HSMA Programme.*
Aim 4,5&6	Knowledge Mobilisation and translation of evidence into improved services
Progress	*Clear evidence of service improvement e.g. redesigned Stroke Pathways leading to substantially increased use of effective treatment and outpatient services (see Case Study example); patient driven outpatient systems in chronic disease resulting in increased satisfaction despite fewer attendances.*
Aim 7	Research into effective methods for translation of research evidence into service provision
Progress	*Establishment of skilled implementation research team, led by NIHR Knowledge Mobilisation Fellow (Lang) working with AHSN. Implementation research projects include ASPIC (AHSN funded), CHARLIE (review of implementation approaches in care homes – CHIK-P) and DeIRDRe (Alzheimers Society supported)*
Aim 8	With partners, build capacity of staff to use and generate evidence
Progress	*See training section. Includes 15 funded PhDs, 6 HSMAs, multiple training opportunities for partners in Making Sense of Evidence, Operational Research (OR), PPI, Qualitative Research Methods and Statistics*.

2. PROGRESS MADE IN EACH RESEARCH THEME

In all our themes we aim to deliver against our key objectives of increasing the production of high-quality research, facilitating better use of evidence to improve health and health services, increasing capacity to use and generate evidence, and contributing to the growth agenda. PenCLAHRC strategy is built around the hypothesis that working with decision makers – members of the public, clinicians, and policy makers – to answer their information needs through use of new or existing evidence increases the likelihood of achieving health gain. Inevitably this frequently requires working across themes and we actively encourage this. The sections below highlight progress against the aims set out in our bid alongside some noteworthy achievements in each theme. However, it is important to note that the space available only allows us to present exemplars and many activities, particularly relating to implementation and capacity building, are discussed in other sections. The sections below are organised by key CLAHRC objectives but projects frequently address more than one objective (e.g. Research and Improving Health and Wealth or Research and Capacity building).

1. Person Centred Care (led by Professors Britten and Byng)

Research

Highlights include substantial progress in developing existing projects (first three bullets) and a number of new projects (*major grants in italics*):

- **ReTRAIN**, a patient-initiated pilot trial of a novel intervention for post-stroke rehabilitation has now been funded by the *Stroke Association*. Recruitment has been completed on time and a funding application for a full trial is being prepared.

- A novel person centred approach to interactions and organisation of care has been developed in the **Engager** (prison leavers, *NIHR PGfAH*)) and **Partners 2** (psychosis in primary care, *NIHR PGfAH*) projects using an individualised bio-psycho-social 'shared understanding' and plan for action.
- **DIAT** (*NIHR-RfPB*) was a feasibility trial that examined the use of patient-developed agendas in diabetes clinics. The study demonstrated that, despite patient enthusiasm, this was not feasible. This project has provided good opportunities to reflect on the learning it provided about PPI in clinical trials, in particular the contribution of PPI representatives to data analysis around the interactions in clinical consultations.
- Disabled children are admitted disproportionately frequently and members of the PenCRU Family faculty designed the **Hospital Comms** project to improve the ability of hospital staff to communicate effectively with their children. Initial work was completed in the pilot CLAHRC and the training is being converted into a manual to enable evaluation in a multi-site study.
- Developing a theory and measures for **Person Centred Coordinated Care (PCCC)** for individuals with long term conditions and care from multiple teams (see Case Study Example - **PCCC** and also Improving Health and Wealth below). In collaboration with the *AHSN*, we are developing theory, innovation, and a consistent evaluation framework for PCCC. Two measures are in the process of development: one to assess patients' experiences of person-centred and coordinated care, and one an implementation and reporting tool to measure and support organisational change.
- In collaboration with colleagues in West Midlands CLAHRC, we are preparing a funding proposal for FLIPMeds (Facilitating daily Living through Individualised Prescribing of Medicines: a programme of work to address Problematic **Polypharmacy** in Primary Care). Preliminary work suggests Medicines Optimisation policies pay insufficient attention to the perspectives of patients.

Improving Health and Wealth

Highlights include:

- In partnership with the AHSN, **Patient Initiated Clinics** were effectively implemented in Rheumatology in one centre, have been extended to other specialities, and are actively being considered by other Trusts. A "PIC Implementation Tool" has been developed to aid implementation.
- Reconfiguration of services aiming to provide **Person Centred Coordinated Care** is seen as key to increasing the efficiency of the NHS. In collaboration with the AHSN we are working with five local service providers across four health systems (Yeovil (Symphony), Taunton, Exeter, and Torbay) to evaluate a range of primary-care-based projects, adapting the evaluations to the needs of each service.
- We have worked with Torbay and South Devon NHS Foundation Trust to develop a model and evaluation framework for **Enhanced Recovery in Acute Medicine.**
- We are working with a group of orthopaedic surgeons to explore the impact of the **PROFHER** trial of conservative vs operative treatment on how they manage humeral fracture.
- Pain relief is essential in the management of hip fracture and delays in achieving relief can slow progress through ED. We are working with South Western Ambulance Service NHS Foundation Trust, orthopaedic surgeons, and anaesthetists to explore the possibility of **Paramedic-Administered Regional Anaesthesia for Hip Fracture**.

Capacity Building

- CLAHRC-funded PhD students within this theme:
    - *Developing a typology of N of 1 trials to aid clinicians individualise treatments*

- *Developing Person-Centred Approaches to weight management in the community*

- We offer training to researchers and clinicians in how best to work with members of the public through clinics offering 1-to-1 help, organised training sessions with the PPI team and PenPIG members, and Building Research Partnerships workshops run jointly with the NIHR-CRF.
- Training for members of PPI groups includes attending Making Sense of Evidence workshops and specific lay reviewer training for those reviewing bids for PenCLAHRC or funding bodies.
- A training programme in effective participation for highly involved members of our PenCRU Family Faculty has enabled them to cascade training to others.

2. Mental Health and Dementia (led by Professor Richards)

Research

Highlights include (*major grants in italics*):

- We have completed and published a review and pilot trial of **Stepped Care for Depression** begun in the pilot CLAHRC.
- We have completed a *Wellcome Trust*-funded pilot trial of mindfulness and resilience in adolescents and a new *Wellcome* grant has been awarded for a definitive study.
- We developed a qualitative study of the experiences of young people with eating disorders and their parents to parallel the *NIHR-SDO* funded **CostED** cost-effectiveness study of specialist outpatient teams for young people with eating disorders.
- We completed data collection from a feasibility/pilot trial of **Mindfulness-based CBT for depression** in people with chronic physical health problems.
- We began data extraction in an *NIHR-HTA*-funded linked evidence synthesis of **the Mental Health of Children and Young People with Long-Term Conditions.**
- We developed and published a protocol for a mixed-studies review of coordinated care interventions in dementia.
- **Catch-US** (*NIHR HS&DR* funded) is examining transition from child to adult services for young people with ADHD.

Improving Health and Wealth

Highlights include:

- Opportunities for implementation activities have arisen from 3 of our current mental health research projects (**STARS** – supporting teachers in schools; **CarED** – service users' experiences of eating disorders; **Netmums** – online treatment for postnatal depression). They have led to testing the feasibility of teacher training to deal with disruptive children with behaviour problems (**STEER**- *ESRC funded* based on **STARS** findings); evaluating the acceptability of eating disorders services (**CarED**); and incorporation of trial results in NICE and Welsh national guidance (**Netmums** study).
- **DeIRDRe**: Dissemination and implementation of evidence-based practices in dementia care: a systematic review, funded by *Alzheimer's Society*. In this project we are working with a charity to produce a scoping review of the extent, breadth, and depth of evidence on this topic and conducting a systematic review of the effectiveness of dissemination and implementation practices in dementia care and the factors that may help or hinder their success.
- **Mapping of Dementia Service Provision** for the AHSN and regional clinical commissioners to assist in service planning.
- Development of a mobile app based version of a word retraining programme for patients with semantic dementia (**Word App**) to assist with word finding difficulties.

Capacity Building

- Two CLAHRC-funded PhDs focused on care for people with dementia:
  - *Video calls to help prevent loneliness and reduce the risk or impact of dementia*
  - *Living well with dementia: Integration of healthcare for people with dementia*
- Awarded Research Capacity in Dementia Care Programme (*RCDCP*) by NIHR/DH that provides funding for a further four PhD studentships for professions allied to medicine (two nurses, one dietician and one physiotherapist). The students are working together to form a community of practice to develop and evaluate interventions that address questions prioritised in dementia care by the James Lind Alliance.
- We published the first international textbook on Complex Interventions Research Methods and hosted the first biannual international conference on this topic.

3. Healthy People, Healthy Environments (led by Professor Abraham)

Research

Highlights include (*major grants in italics*):

- **HeLP**: The HEalthy Lifestyles Programme is a novel school-based obesity prevention programme being evaluated in *an NIHR-PHR*-funded cluster RCT involving 32 schools and 1324 children that has achieved 94% follow up at 24 months and includes gathering of accelerometer data.
- **HeLPfulI**: The partnership approach used to develop HeLP has been applied to the development of a healthy lifestyles programme for secondary children working with a Young Persons Advisory Group that has been shortlisted by *RfPB* for intervention development and pilot.
- **STARS**, Supporting Teachers And childRen in Schools (*NIHR-PHR funded*) is testing an intervention to reduce child behaviour problems in a large cluster RCT and has completed 85% of follow-up data collection. We are due to finish follow-ups in March 2017.
- **ComPoD**: The Commmunity-based Prevention of Diabetes study is a randomised, waiting-list-controlled trial funded by the *NIHR-SPHR Public Health Practice Evaluation Scheme* assessing a community-based programme delivered by voluntary sector for adults with "pre-diabetes".
- **MAGI**: Linked to ComPod, the Mechanisms of Action in Group Interventions study is funded by the *NIHR/MRC EME* Programme to develop a better understanding of the mechanisms of change in group-based interventions.
- We have published evidence syntheses on health and well-being effects of conservation activities and school gardens.
- **Health Trainer**: (*NIHR-PHR*) Trial of the use of health trainers to improve supervision and wellbeing of offenders in the community. .
- **E-coachER**: (*NIHR-HTA*) is an RCT evaluating web-based coaching added on to an Exercise Referral Scheme to increase uptake of physical activity and sustained health by patients with obesity, type 2 diabetes or pre-diabetes, hypertension, osteoarthritis, or a history of depression. We have completed the pilot and are awaiting a decision on definitive trial funding.

Improving Health and Wealth

Highlights include:

- **C2: Connecting Communities** is an experiential learning programme and delivery framework to create the conditions for resident-led service provider partnerships in very low-income communities and is in the process of becoming a community interest company. The C2 learning programme has been delivered to Public Health registrars, housing associations,

and newly commissioned sites and has been commissioned to deliver C2 to Devon and Cornwall Police to support the piloting of a new role within the police force; Police Community Management Officers.

- A *Drinkaware*-funded project examining the effectiveness of employing "club-hosts" in local nightclubs to identify and look after vulnerable customers.
- **Changing bars**: A project funded by the *NIHR-SPHR* to evaluate the feasibility of how changes in a bar environment affect alcohol sales and consumer behaviour
- International collaboration as part of the SNAPP (Science for Nature And People Partnership), a working group for evidence-based conservation, has produced an evidence map on linkages between conservation activities and health. (Featured in Nature News and Comment http://www.nature.com/news/sustainability-map-the-evidence-1.18962)
- Major **Suicide Prevention** activities based on research on inter-personal and public health interventions produced in collaboration with national suicide prevention charities.
- Based on feedback from the **STARS** project, we were awarded an *ESRC Impact Acceleration Award* to test the feasibility of running Teacher Classroom Management training with teaching assistants working with children whose behaviour was so disruptive it was affecting learning.

Capacity Building

- Two CLAHRC-funded PhDs:
  - *Functional image training as a personalised intervention for weight loss.*
  - *Mealtime interventions in care homes*.

4. Diagnostics and Stratified Medicine (led by Professor Hyde)

Research

Highlights include (*major grants in italics*):

- Research on **Inter-arm Blood Pressure** difference has demonstrated its major importance as a prognostic factor leading to inclusion in European Guidelines on BP measurement and a feature in the BMJ. (*NIHR-RfPB*). See Case Study Example – **Blood Pressure Management**.
- We are participating in the **TriMaster** trial, which is part of the *MRC Stratified Medicine* programme led by Professor Andrew Hattersley. This will help individual patients with type 2 diabetes identify which of three third-line treatments are most suitable for them. The co-created patient-facing materials generated by this project have been chosen as examples of best practice for the HRA website.
- The **CaROTT** programme (Cardiac Reviews Of Tests and Training) is systematically reviewing a series of diagnostic test accuracy studies. A review of the effectiveness of high sensitivity troponin tests, supported by NICE guidance, forms the basis for *AHSN*-funded modelling of the potential implementation of this approach.
- A suite of Cochrane test accuracy reviews on diagnostic techniques in dementia, including both short primary care screening tests and Positron Emission Tomography (PET) scanning, will underpin evidence-based approaches in both primary and secondary care.

Improving Health and Wealth

Highlights include:

- The Early Diagnosis in Cancer Group (Prof Hamilton) have produced a series of studies documenting the predictive power of symptoms in primary care leading to the development of tools to inform GP decision-making that form a major part of the evidence base for the new NICE guidance (chaired by Prof Hamilton). See Case Study Example – **Cancer Diagnosis**.

- **UNTEST** has investigated the rise in ordering of routine tests, using thyroid function as an exemplar, and has documented and sought to explain a six-fold variation between practices. We are now developing interventions to reduce inappropriate test ordering.
- Building on research examining the performance of **High Sensitivity Cardiac Troponin** in acute chest pain we are developing an implementation plan with the AHSN across the Southwest.
- Implementing **Radiographer-Led Discharge** for minor injuries at Yeovil District Hospital (*Health Education Southwest*).

Capacity Development

- We have established the PenCLAHRC Test Club as a forum for researchers and clinicians to develop research on test use and performance.
- Two CLAHRC-funded PhDs:
    - *Low dose CT to define pre-operative MI risk*
    - *Accuracy and feasibility of GP testing for dementia*

5. Evidence for Policy Making (led by Professor Stein)

Staff primarily based within this theme provide major input (particularly systematic review, modelling, and implementation science expertise) to numerous projects detailed in other themes.

Research

Highlights include (*major grants in italics*):

- Operational research modelling to optimise the management of chronic hepatitis B (CHB) in children and young people (**HepFree**) (*NIHR RfPB*).
- Modelling the use of thrombectomy in stroke, a relatively new and high profile intervention which is a high NHS development priority locally. This is the subject of an NIHR Programme Grant (Oxford and Newcastle) with whom we are working to extend their modelling using methods developed in our CLAHRC to explore the geography of provision and workforce implications of wide scale implementation.
- Operational research modelling to develop a national model of the distribution of neonatal intensive care and assess its implications (**NeoNet**) (*NIHR HS&DR*).
- The Evidence Synthesis Team (EST) have worked on 30 projects this year and produced systematic reviews of evidence underpinning the work of all PenCLAHRC themes (http://clahrc-peninsula.nihr.ac.uk/est-reviews).

Improving Health and Wealth

Highlights include:

- Modelling thrombolysis pathways across provider organisations has provided lessons on the determinants of variation in thrombolysis rates and led to both research publications and service improvement (in collaboration with the *Stroke Strategic Clinical Network* and *AHSN*). See Case Study - **Stroke**
- Modelling the implications of different decisions on which units in the South West should provide thrombolysis (*Strategic Clinical Network*) will underpin commissioning decisions in summer of 2016 (**Stroke Urgent Care Review**).
- The **ASPIC** project, commissioned and part funded by the *AHSN*, has carried out ethnographic research on implementation in two CLAHRC projects (**Acute Stroke Pathways** and **Patient Initiated Clinics**) to understand influences on the uptake of interventions.
- **CHIK-P** – Care Homes Implementation and Knowledge mobilisation Project – aims to understand and develop opportunities for the implementation of research-based knowledge in care homes including several evidence synthesis projects (part funded by the *Alzheimer's*

Society) to establish how best to disseminate and implement effective practice in long-term care settings.

Capacity Development

- Two CLAHRC-funded PhDs:
  - *Exploring the effects of NICE "Do not dos" on clinician behaviour*
  - *Research use and knowledge mobilisation in the third sector.*
- Systematic review training through short courses and "clinics" for researchers and NHS staff.
- A four-section modular course in Operational Research (OR) for Healthcare has been delivered to 180 people from the local health economy.
- Based on demand from local partners the "Health Service Modelling Associates" (HSMA) programme has recruited its first six participants, each seconded part-time for a year from local NHS organisations, to work on topics relevant to their employers while developing their modelling skills and being mentored by PenCLAHRC staff.

3. IMPACT ON HEALTHCARE PROVISION AND PUBLIC HEALTH

PenCLAHRC is committed to using evidence to improve health locally and more broadly. We work closely with partners in the local health economy, especially the AHSN, with members of the public and with third sector organisations to ensure our research is relevant to policy and practice. Standout examples of how our work has directly impacted health and services include:

1. Action to prevent suicide *(Mental Health and Dementia Theme)*

A programme of research led by Prof Owens has addressed antecedents and circumstances of suicide. This work, conducted in collaboration with external bodies including the Alliance of Suicide Prevention Charities (TASC) and local authorities, has resulted in the development of a series of interventions.

In partnership with TASC and Devon County Council (DCC), we produced a simple public education leaflet, 'It's safe to talk about suicide'. An initial 15,000 copies distributed via frontline agencies and community groups proved inadequate; formal evaluation identified substantial unfilled demand and a desire by agencies to use it in a wide variety of ways. In particular it is being used as a basis for training frontline staff in local authorities, and emergency services. It has now been adopted by London Borough of Haringey and by the Fire Officers' Association as part of its Blue Light MH project (with Mind). The content was reproduced online by Campaign Against Living Miserably (CALM) as part of their '#BiggerIssues' campaign, sponsored by Lynx. This campaign culminated in a 'thunderclap' message to over 23 million people on the 19th November 2015 via social media. The success of the campaign in reaching the public was evident in YouGov polling that found awareness of male suicide had increased by 45%
(see http://www.mynewsdesk.com/uk/calm/pressreleases/bigger-issues-campaign-sees-45-increase-in-awareness-of-male-suicide-1279326). The leaflet is freely available under a CC license to other local authorities and agencies via the National Suicide Prevention Alliance (NSPA), with endorsement from Public Health England.

2. Increasing patient responsiveness of outpatient management in people with chronic disease *(Person-Centred Care Theme)*

PenCLAHRC was initially approached by clinicians dealing with patients with rheumatoid arthritis (RA) desiring to improve out-patient services. . RA is a fluctuating condition and patients frequently complain that routine appointments come round in periods of disease quiescence but that it is difficult to access specialist care when their condition worsens. A systematic review carried out by

the Evidence Synthesis Team in the pilot CLAHRC found good evidence to show that allowing appropriately selected patients with a number of chronic conditions, including RA, to select when to see their consultant leads to decreased service use and improved satisfaction. We have collaborated with the AHSN and a local NHS Trust to successfully implement and evaluate "Patient Initiated Clinics" (PICs) in RA, showing decreased use of outpatient activity and increased satisfaction (see media clip). The successful initiative been taken up by a number of other specialities in the same hospital and now plans are underway to spread it further afield.

3. Improving the detection of cancer *(Diagnostics Theme)*

Professor Willie Hamilton's research group investigates methods for early detection of cancer in primary care, work supported by PenCLAHRC. Prof Hamilton has recently Chaired the committee updating of NICE guidance "Suspected cancer: recognition and referral" on this subject (published June 2015). This extensive revision covered 30 separate cancer sites in adults and children and much of the evidence underpinning the new recommendations was explicitly based on research conducted by this team. In many of the areas NICE identified in the underpinning systematic reviews, the sole evidence was from Prof Hamilton's team (e.g. myeloma, microscopic haematuria, breast cancer, uterine cancer and lymphoma). The work has also yielded a range of tools to support the referral of potential cancer by primary care physicians and we are currently developing an approach to spread their implementation.

4. Improved delineation of risk in hypertension *(Diagnostics and Person-Centred Care Themes)*

A series of meta-analyses and cohort studies led by Dr Chris Clark have led to the clear recognition that differences in inter-arm BP are an important predictor of CVD risk. This has led to recommendations for the inclusion of these measures as part of the routine clinical practice in the 2013 ESH/ESC Guidelines for the management of arterial hypertension. Further work is (a) examining the degree to which these measures can be used to identify "white coat hypertension" and (b) planning the implementation of these techniques in primary care, particularly in the work of nurse practitioners.

4. PATIENT AND PUBLIC INVOLVEMENT AND ENGAGEMENT

Patient and public involvement:

The involvement of patients and members of the public has been central from PenCLAHRC's inception, secured by commitment in the leadership group, reflected by the well-resourced team who work to implement and research involvement across PenCLAHRC. Patients and members of the public are involved in all aspects: training and recruiting researchers, disseminating and promoting our research, applying for research funding, as members of the PenCLAHRC Management Board, liaising with other involvement groups regionally and nationally, and informing research directly working with researchers or as members of study steering committees.

In 2015, two new researchers were recruited to the PPI team, with patients and members of the public fully involved in the process. Their arrival prompted a revision of our strategy (online), focussing on 4 strategic areas: embedding involvement in PenCLAHRC, developing involvement through research and theory building, furthering collaboration with patients and members of the public, and expanding the work of the PPI team.

Involvement activities inform individual themes but also go beyond and cut across all of PenCLAHRC. Members of PenPIG (Peninsula Patient Involvement Group) presented their work on person-centred care at a meeting with researchers from the University of Gothenburg. We treat PPI as an integral part of research proposals in the same way as involving research methodologists. Recent examples

with strong PPI involvement include design of a depression treatment trial, a mixed-method systematic review on rehabilitation for people with cognitive impairment, radiographer led diagnosis in A&E, an analysis of data sets to examine the link between environmental change and health, and training on how to involve members of the public in systematic reviews.

Examples of impact:

1. *Involvement of members of the public can impact on research training*: A member of PenPIG suggested the group could be more involved in informing our PhD research. As a result, the PenCLAHRC Training Lead worked with the involvement team on a communications day for PhD students, held in October 2015. Students first received advice from staff on how to present their research to a general audience and then presented to PenPIG members, who provided feedback on their communication skills. This engagement with PhD students helped identify broader needs within PenCLAHRC for training on involving patients with dementia. The PPI team developed training on this topic, in collaboration with the community interest company 'Innovations in Dementia' (http://www.innovationsindementia.org.uk/). The influence of this training on a particular PhD research proposal has resulted in a request to train members within the Exeter University Ethics Committee.
2. *Involvement of members of the public can impact on the outcomes of research funding applications*: After a group of researchers had a proposal rejected by NIHR-RfPB they approached the PPI team who ran a workshop with members of PenPIG and HEPE (Health and Environment Public Engagement group) to inform a revised version. This workshop re-shaped the bid which was then funded by NIHR-RfPB (video clip).

Challenges:

The involvement team of PenCLAHRC has helped ensure PPI is fully integrated into the ethos and practices of PenCLAHRC. This has enabled us to cascade knowledge and appreciation of involvement across the partner universities. As involvement expands into new areas, current structures are exposed in terms of their strengths and their weaknesses. It has become evident that there is still a way to go in defining the role of a group which primarily draws on its members' lived experiences. We recognise that there are still gaps to be filled in defining the role of a group that primarily draws on its members' lived experiences. There are currently three involvement groups that inform the work of PenCLAHRC: the Peninsula Public Involvement Group, PenPIG, the Health and Environment Public Engagement group, HEPE, and the PenCRU (Peninsula Cerebra Research Unity) Family Faculty. Each of these sit between the professional and private spheres and this can present challenges, in relation to responsibilities and expectations, for both researchers and members of the public. We have identified this aspect of involvement as one we want to research in greater depth in the coming months.

Public engagement*:*

We have developed a close partnership between the Clinical Research Network and the PenCLAHRC involvement team. We collaborate with the CRN on public engagement by through reciprocal distribution of information materials and co-run RDS Building Research Partnership training days. We also continue to run our Miracle Cures workshops for members of the public. We have worked to expand our engagement beyond our established groups: with members of the public who have registered interest with the Clinical Research Network's database, by building strong links to Devon- and Cornwall-based community groups, and by liaising with participation groups run by Somerset County Council. We are diligent about updating our website with information about our research findings and activities, and our website has a dedicated area for interested members of the public. In 2016 we have made a video clip about public engagement in PenCLAHRC, shortly to be released. We

seek opportunities to speak about PenCLAHRC at public events. For example, in 2015 Kath Maguire spoke at a sold-out TEDex event in Totnes.

5. TRAINING

Increasing the capacity within the local health economy to use and generate research evidence is a key objective for PenCLAHRC. This activity encompasses five broad groups of activity although these overlap and training opportunities frequently meet objectives of more than one group.

PhD students

We have a total of eleven PhD trainees funded directly through PenCLAHRC of whom ten are health services researchers and one is medically qualified. Two of the trainees have successfully upgraded from MPhil to PhD within the reporting period. In addition, we have a further four PhD trainees funded through the Research Capacity Dementia Care Programme (RCDCP) – these additional studentships are for clinicians from nursing or allied health professional backgrounds and we currently have a nurse and a physiotherapist in post. Three students (2 RCDCP and 1 funded by PenCLAHRC) left their studies during their first year. However, an additional 3 students have now been recruited and commenced their PhDs (representing nursing, dietetics and health economics). A further 30 PhD students funded from other sources are supervised by PenCLAHRC staff. Since April 2015 we have had eight PhD completions and a further four are awaiting viva.

All of our PhD trainees benefit from the training opportunities provided by Researcher Development Programmes from both partner Universities.. Those students undertaking research on dementia are part of a Community of Practice Group which meets fortnightly and provides opportunities for shared learning, with support from senior clinical academics. In addition to the routine supervision provided by PhD supervisors, trainees maintain regular contact with our Training Lead, Dr Vicki Goodwin, to ensure full use is made of training opportunities locally and nationally. Two of our trainees attended the 2015 NIHR Training camp and two more have been selected to attend this year. In the reporting period, specific training developed for our PhD trainees covered:

- Good Clinical Practice
- Involving People with Dementia in Healthcare Research
- Communicating your research with the public

Formal training for PenCLAHRC partners

We have a core programme of training open to staff from all partners and to members of the public. As well as providing participants with knowledge and skills these courses promote academic engagement with NHS staff and members of the public and help us elicit uncertainties regarding clinical and policy questions.

Training offered during the period has included:

- "Making Sense of Evidence" Workshops in a wide variety of formats covering introduction to research, literature searching and critical appraisal skills in relation to trials, systematic reviews, and diagnostic and qualitative studies (23 events for 513 delegates including clinicians and PPI). We regard these workshops as a key activity to help staff get onto the first rung of the "research escalator" as well as providing applicable skills for everyday practice. Formats include both general training and bespoke courses for teams working in a particular area or for single discipline groups such as physiotherapists who express a need to get a basic training before joining open programmes. This is an area of particular strength in the CLAHRC and course materials from our MSE training are made freely

available to any NHS or University staff and wide dissemination is encouraged. We have given all existing training materials to North Thames and West England CLAHRCs.

- We are particularly pleased with the establishment of the "ExPERT" programme, funded by the Police Knowledge Fund (HEFCE Catalyst Funding) in which we are working with the Devon and Cornwall Police to train officers and staff to better understand evidence as a basis for improving service delivery. 55 staff members have completed the first two sets of training and a similar number will attend during the next few months. We anticipate that this will continue as a relationship within which we can conduct further joint research.
- Operational Research (OR) modelling workshops covering Foundation level, Introduction to modelling, Problem Structuring and Geographical modelling (21 events with 368 delegates)
- STATA training (44 delegates)
- Our PPI unit ran a public consultation event in Truro as part of their work on the Health Protection Unit in partnership with Public Health England, the London School of Hygiene and Tropical Medicine, UCL, and the Met Office. The team also took part in Science at Work Day undertaking mini workshops with groups of Yr8 students.
- A one day conference 'Clinical Research for non-medical health care professionals: What's all the fuss about?' (124 delegates)
- Regular advice clinics for academic and healthcare staff on "Search and Review" (fortnightly), PPI (monthly), statistics (three per term) and Qualitative Research (three per term).
- We have a long running programme of tutor training in Evidence-Based Practice to promote spread and sustainability. In the current period a further five people have attended the Oxford 'Teaching evidence-based practice' course and joined our 'Making Sense of Evidence' tutor team (two medically qualified, two physiotherapists, one statistician). The tutor team has been expanded to include two GPs working one day a week to develop more effective approaches for primary care.

Staff development

We see our staff as a key resource and have an active appraisal programme in which staff and line managers are encouraged to focus on training and development needs. Our partner universities have extensive training programmes open to staff and we supplement these with external courses and opportunities for secondments as well as providing access to the training opportunities listed above.

Developing methodological skills for NHS staff

Staff who propose clinical or policy uncertainties that are adopted as part of the CLAHRC are encouraged to maintain involvement with the resulting projects both to ensure the continuing relevance of the research to practice and to enable them to work with methodologists to develop their skills.

Our CLAHRC has developed particular expertise in the use of operational research modelling as a method to investigate service delivery limitations and challenges and to test in silico potential solutions. We have shown with NHS partners that this can form the basis for successful implementation of evidence-based services leading to improvements in patient outcome. We are now undertaking these activities jointly with other CLAHRCs, helping to spread expertise. A demand from our partners for greater access to modelling than we could supply has led to the establishment in 2016 of the "Health Service Modelling Associates" scheme. Six seconded staff members from NHS Trusts are developing operational research skills by working on specific projects aiming to address

key current operational uncertainties in their trusts. Questions being addressed in this programme of supported learning and capacity development include:

- How would variation in patient discharge rates throughout the week be affected by a Medical Specialist Registrar dedicated to discharge review over the weekend?
- What are the bottlenecks and delays in getting out-of-hospital medical cardiac arrest patients to definitive care?
- What are the current constraints / bottlenecks within the acute eye service and how can we minimise them?

We are keen to work with groups of clinicians who wish to increase capacity in their areas as we see this as the basis for future productive research and service improvement. For instance, within the pilot CLAHRC we established a strong relationship with the local ambulance trust, based on training provided to paramedics. We have now developed a relationship with the South West Anaesthesia Research Matrix (SWARM) and have jointly supported a Research Fellow, Dr Tori Field, (one day per week for a year) who will gain research experience while conducting a project agreed by local clinicians.

6. LINKS WITH NIHR INFRASTRUCTURE AND THE WIDER INNOVATION LANDSCAPE

A significant strength of CLAHRCs has been the decision early in the pilot phase to seek close cross-CLAHRC links. This has continued into the new phase with collaboration between all 13 CLAHRCs. Directors and Programme Managers meet regularly, a link coordinated by a jointly funded Partnership Programme based at Universities UK. These meetings serve multiple purposes including sharing knowledge and skills and facilitating liaison with bodies such as NHS (E). A number of cross-CLAHRC groups with common methodological or subject interests have been formed. These include PPI, Operational Research Modelling, Economics, Stroke, and Mental Health Groups and in each of these our PenCLAHRC staff are active participants. CLAHRCs were also joint sponsors of the recent state of the art conference on the design and evaluation of complex interventions (supported by the Health Foundation and Academy Health) proceedings of which are about to be published.

There is enthusiasm for the establishment of joint projects – we currently have 4 large externally funded studies and 2 internally funded projects jointly with other CLARHCs and a further 6 are currently in preparation or awaiting funding decisions. These include collaborations with CLAHRC West (Paediatric Admissions project), CLAHRC South London (Interface2), CLAHRC West Midlands (Multimorbidity and Polypharmacy projects), and CLAHRC North West Coast (Polypharmacy). We have excellent links with CLARHC West with whom we have a series of joint meetings and are developing joint projects. This is important as there are significant clinical flows across our geographical boundaries, especially for complex cases.

The AHSN is a significant partner for many of our activities within the local health economy and the pilot CLAHRC was closely involved from its inception. We share the same geographical area and the same organisations are members of both. Our overlapping aims, particularly with regard to the improvement of services and facilitation of evaluation and spread of innovation make cooperation imperative and fruitful. There is cross representation at all levels of management across the two organisations: The PenCLAHRC Director is a member of the AHSN Board, the AHSN Director sits on the CLAHRC Management Board: staff are represented on prioritisation and working groups within each organisation. This helps both organisations to remain connected to the needs of our NHS partners with shared opportunities to identify their priorities. We have a substantial number of specific joint projects including the Person Centred Coordinated Care programme to support new

models of care and integration; improvements in acute stroke care; reduction of avoidable admissions in adults and children; establishment and evaluation of patient initiated clinics; a DH-funded evaluation of Patient Safety Collaboratives and effective use of diagnostic strategies in acute chest pain. The AHSN provides an important conduit for PenCLAHRC to gain access to industry and third sector organisations, which are becoming increasingly important in health care delivery. In this area, the development of the £5 million Social Investment Fund by the AHSN is offering a unique opportunity for collaborative development of service innovation and delivery. Perhaps equally important is the informal sharing of skills and training opportunities across all of our activities.

We also have strong collaborations with other parts of the local NIHR infrastructure including:

- **NIHR Clinical Research Network (CRN) Southwest Peninsula**. Ten current projects (all with additional external grant support) are currently being supported by the CRN. The CRN provides training for staff and for our new cohort of PhD students. Along with the AHSN we are supporting the "Drive" project, which aims to further streamline the process for study approval and opening that is being led by the CRN.
- **NIHR Exeter Clinical Research Facility**. We have developed shared standard operating procedures, joint training, and collaboration between methodologists.
- **NIHR Research Design Service (RDS) Southwest**. PenCLAHRC and the RDS work together to maximise potential benefit from research. RDS staff have provided methodological input to a number of successful grant applications and are joint applicants on several of our projects. We also have an agreement whereby research questions considered through our identification and prioritization systems which are unsuitable for PenCLAHRC to take forward are passed on to the RDS.
- **Peninsula Clinical Trials Unit (PenCTU)**. This unit is supported by an NIHR Clinical Trials infrastructure grant. All substantial clinical trials run within the PenCLAHRC portfolio involve collaboration with PenCTU.

7. LINKS WITH INDUSTRY

Engagement Strategy

In our original application we made it clear that we anticipated our relationship with the South West AHSN would lie at the heart of our strategy. This has been borne out in practice: this relationship is strong across all areas of our work and remains central to how we work with industry. A notable recent development is that the AHSN has in the past few months established a £5 million Social Investment Fund to facilitate the development of new ways of providing health and social care by working with private enterprise and third sector organisations. We are working with them to help devise appropriate approaches to evaluation.

Our strategy for engaging with industry continues to be focused on engaging with local SMEs and non-life-sciences companies though we have had success in working with companies working in the biotech (e.g. in the Earlybird 3 study, which is a collaboration with and part-funded by the Nestlé Institute of Health Sciences) and the medtech/devices sectors (e.g. our work with DM Orthotics on osteoporotic vertebral fracture). We also have some excellent and highly productive collaborations with intelligence and analysis companies including (the international analysis and organisational change specialists) Lightfoot Solutions, who have provided us with in excess of £100k in kind; (the simulation software developer and implementer) Simul8, with whom we now have an extensive track record of collaboration; and (the social impact measurement company) Simetrica, who are undertaking a social return on investment analysis of our highly successful C2 programme of work.

In relation to non-life-sciences companies we have exciting collaborations with organisation as diverse as Babcock LDP (on our STARS project), Andromeda Capital (on C2), and Somerset Care (on the Care Home Implementation and Knowledge Mobilisation Project (CHIK-P)). Health and social care are increasingly being provided by SMEs, non-for-profit companies and third sector organisations. They are often hampered by a lack of skills and resources in their attempts to build services which make effective use of existing evidence and in attempts to evaluate what they provide. In addition to specific projects with these organisations we are actively involving them in our attempts to define a research agenda around improving health of residents in care homes and have a workstream that aims to understand how these organisations currently make use of evidence as a basis for future implementation.

UK Small and Medium Enterprises (SMEs)

Working with SMEs is a core element of our strategy for engaging with industry. In the reporting period we worked with 44 SMEs. Our focus is on strengthening existing collaborations while pro-actively seeking novel opportunities to work with SMEs whose activity is aligned with our strengths and strategic aims. To this end, we have built on our existing success and our work in this area shows excellent progress compared to our position at the commencement of this period of CLAHRC funding and in line with our strategy. Our engagement with SMEs covers a wide range of activity but there are three areas particularly worth highlighting because of either our strong track record or because they represent areas of important growth and development for us.

The first is with SMEs designing and producing healthcare innovations. This includes, for example, AF-APP, the producers of an app designed to identify atrial fibrillation; DM Orthotics, a Cornish SME with whom we are working to produce an orthotic device for people with osteoporotic vertebral fracture; and Buzz Interactive, a Newquay-based SME with whom PenCLAHRC staff have worked on the Ménière's Monitor app). In addition, we are hopeful that our work with a charity, SPARKS, and a group of engineers to design seating for children with athetoid cerebral palsy will lead to the foundation of a spin-off SME in the near future.

The second is SMEs with a social care and healthcare focus. For example, we are working with Westbank to evaluate their provision of social prescribing in the Exeter and Mid Devon area - a programme of work that is itself part of a test of change, led by our partner organisation the South West AHSN, related to social return on investment. As part of our C2 project we are working extensively with SMEs with a neighbourhood or community focus. These partnerships enable us to engage effectively at a grassroots level and include work with Exeter City Futures, Plymouth Community Homes, and Sovereign Housing.

The third is with SMEs active in the long-term care sector. We have a number of projects related to research, implementation science, and capacity development in this sector and we are actively building collaborative work with a number of organisations and key individuals. Our range of collaborations in this sector reflects the diversity of provider organisations and goes from large organisations (too big to be classed as SMEs and not counted in the total numbers given here) like Somerset Care Group to various small SMEs that run one or a small number of care homes such as Classic Care Homes and Southern Healthcare. Our engagement with and across these organisations is central to multiple projects currently underway as part of our CHIK-P programme of work.

Strategic Partnerships

Our long-term strategic partnership with Lightfoot Solutions continues to go well.

We are collaborating with Nestlé through their Nestlé Institute of Health Sciences as part of the Earlybird 3 project.

8. MATCHED FUNDING

Matched funding for PenCLAHRC comes from multiple sources including NHS organisations, the AHSN, the partner Universities, charities including Cerebra (a family-based charity for children with neurodevelopmental problems) and the Alzheimers Society, and the private sector. The source of funding has a substantial influence on the purposes for which it can be employed although some funds such as those from the universities have fewer restrictions on usage. At the other end of the spectrum, funding from Cerebra can only be used for projects related to children with neurodisabilities and their families.

Our research and implementation strategy explicitly aims to be responsive to the needs of decision makers and projects often cross themes and frequently include elements of both implementation and research. Matched funding underpins work across all PenCLAHRC activities and only a few examples can be highlighted in this section.

Key activities and achievements supported by matched funding:

1. **Person Centred Coordinated Care** *(Person Centred Care Theme)*

Integration between primary and secondary care and between health and social care has been proposed as a way of dealing with the increasing demand on acute services. Matched funding from the AHSN, NHS(E) and Torbay Hospital is supporting our work in helping to design and evaluate a series of these initiatives in Somerset and Devon. These projects are not only providing rapid evidence to help those designing the service but have also led to the development of two methods for evaluating the extent which such services are succeeding in delivering person centred care. These are a measure which aims to assess patients' experiences of person centred and coordinated care and an implementation and reporting tool to measure and support organisational change. We are now working with colleagues in Australia and the USA as well as locally to further develop and test these measures.

2. **Making evidence accessible to families of disabled children** *(Person Centred Care Theme)*

Cerebra is a parent-run charity that provides substantial matched funding for PenCLAHRC to generate and disseminate evidence of relevance to children with disabilities and their families. We work closely with the charity and with their "Family Faculty", which is made up of over 300 members with disabled children. A particularly highly valued aspect of the work is the ability to respond to questions posed by families regarding the evidence for specific interventions, the "**What's the evidence?**" series (http://www.pencru.org/evidence/). These evidence summaries are produced in partnership with parents to ensure that they meet their information needs and are highly valued by both parents and professionals.

3. **Improving services for acute stroke** *(Evidence for Policy Theme)*

Matched funding from the AHSN, the Stroke Specialist Clinical Network and NHS Wales has allowed us to develop a programme of work aimed at improving services for acute stroke care. This work is described more fully elsewhere in this report and includes using modelling to help providers streamline acute management to increase the appropriate use of thrombolysis and helping decision makers understand the trade-offs involved in potential centralisation of services.

4. **Facilitating the development of evidence-based policing** *(Evidence for Policy Theme)*

Substantial evidence, including evidence produced within the pilot CLAHRC, has demonstrated the overlap between health and the criminal justice system. People with mental health problems are disproportionately caught up in the criminal justice system and violence is a major burden on NHS

services. Funding from the Police Knowledge Fund and HEFCE is allowing us to work with Devon and Cornwall Police to build their capacity in making best use of evidence around effective practice and to identify unanswered questions that will form the basis of future research.

5. **DeIRDRe – Dissemination and Implementation in Dementia Research** *(Mental Health and Dementia Theme)*

We are working in partnership with the Alzheimers Society to address what they have identified as key questions for their population: How effective are the strategies that have been used to disseminate and implement knowledge within dementia care? And What are the barriers and facilitators to dissemination and implementation of knowledge in dementia care?

9. FORWARD LOOK

Close engagement with decision makers – clinicians, NHS organisations and members of the public - to identify and attempt to resolve key uncertainties is at the heart of our strategy. We believe that this approach has produced research with genuine relevance to practice and facilitated service improvement and that it will continue to do so in the future. At the same time, we recognise the need to be responsive to changes in the context in which we operate. In particular, the straitened financial situation of the NHS and the shifts in the locus of decision-making that accompany ongoing changes in organisational configuration provide challenges to the maintenance of effective relationships.

There has always been a disjunction between research timescales and the need of the health service for rapid decision-making and the tension this creates has grown in the face of austerity. There are three areas of work between the CLAHRC and our partners which we believe particularly likely to be important over the immediate future in this context.

Increasing the integration between primary and secondary care and between health and social care has been proposed as a way of dealing with the growing demand on acute services. We are currently undertaking a linked set of evaluations of these initiatives in Somerset and Devon as part of our "Person-Centred Care" Theme. These projects are not only providing rapid evidence to help design services but have also led to the development of two novel methods for evaluating person centred care. These are a measure which aims to assess patients' experiences of person centred and coordinated care and an implementation and reporting tool to measure and support organisational change. We are now working with colleagues in Australia and the USA as well as locally to further develop and test these measures. This programme for Person Centred Coordinated Care, run in collaboration with the AHSN, also provides a platform for hosting externally funded research and generating generalizable theory. We anticipate continuing to expand the work to examine the range of new models that are part of the Five Years Forward policy for integration within the NHS.

The second area offering particular promise is the substantial expansion of our activities in the field of operational research modelling (PenCHORD). We have previously demonstrated that this method can be used with our partners to examine inefficiencies in service delivery, test potential solutions and facilitate improvements leading to better health outcomes for patients. This has been extremely popular with our partners and we have invested in increasing our capacity to deliver these projects as well as providing a training programme to build capacity with partners. We are planning further research to better assess the effectiveness of this approach in service change.

The third area attempts to address the difficult topic of how best to stop the use of interventions which have been reported to be ineffective. This builds on a PhD project started in the pilot CLAHRC,

continuing in the new CLAHRC, with input from NICE. Early evidence suggests that blanket recommendations to discontinue the use of interventions has limited effect. We are seeking to develop an approach in which methodologists work with groups of clinicians to explore evidence and produce joint plans which will address clinicians' needs, in particular addressing questions of applicability of evidence and the need for clinical flexibility. This initiative is being developed with the AHSN and will build on understanding evidence, particularly emerging from NIHR, on the value of interventions. Early possible examples, which are being considered during 2016, include management of proximal humerus fractures, use of femoral nerve blockage in the management of fractured neck of femur, and use of arthroscopic knee lavage.

During this year, we anticipate the publication of results from a number of studies begun during the pilot CLAHRC. Of these, the one most likely to generate substantial press interest is the NIHR-funded HeLP trial, a school-based obesity prevention study. The trial conducted across 32 schools has achieved >95% follow-up at 2 years and will provide definitive evidence of the effectiveness and cost effectiveness of a complex intervention designed in conjunction with families and teachers. Should this prove effective we expect to move rapidly to implementation because we have evidence of feasibility and acceptability. If it is not effective in reducing obesity, despite evidence of effective engagement by children, families and schools with an intervention addressing what are believed to be the key pathways to behaviour change, this will call into question all potential school-based interventions.

Overall, we believe that the progress against our key objectives that we have documented in this report, vindicates our original approach to CLAHRC and we will continue to build on this foundation. The challenge facing us now is how to ensure the continuation of success in a rapidly changing NHS and, more widely, public service context; changes which pose considerable challenges but which we believe also offer us significant opportunities.