

Institution: University of East Anglia

Unit of Assessment: 3B - Allied Health Professions, Dentistry, Nursing and Pharmacy: Allied Health and Nursing

a. Overview

Allied Health and Nursing research at the University of East Anglia (UEA) has made substantial and sustained progress since RAE2008, with outstanding advances in the quality and quantity of patient-centred research. We have:

- Gained £22M in research awards, as PIs and Co-Is, including, as PI, £2.15M of Efficacy and Mechanism Evaluation (MRC and NIHR) funding to our Stroke Recovery research programme.
- More than trebled our research spend since RAE2008, from £415K in 2006-7 to £1.44M in 2012-13.
- Strengthened our leadership with professorial research staff increasing from 3 to 8, including the appointment in 2010 of two new research-active Heads of School.
- Established a funded Clinical Academic research career pathway by delivering training and mentorship from pre-masters internships, through NIHR CAT masters level training and doctoral awards to generic NIHR Early Career and Career Development Fellowships and Senior Investigator (total fellowship and senior investigator awards of more than £3M).

The researchers submitted to UOA3 are among the more than 60 researchers from the Faculty of Medicine and Health Sciences (FMH) who are being submitted to REF 2014. Collaborating FMH academics from other UOAs are being returned in: clinical medicine; psychology, psychiatry and neuroscience; public health, health services research and primary care; social work and social policy. They include groups of methodologists such as health economists and medical statisticians. The expertise of these collaborators is harnessed directly as co-investigators or through membership of project steering groups and grant application review panels.

b. Research strategy

Twelve researchers submitted to UOA3 are based in the School of Rehabilitation Sciences (RSC) and School of Nursing Sciences (NSC) and two are from the Norwich Medical School, reflecting the close research relationships across the Faculty. Our Allied Health and Nursing research is structured within multidisciplinary programmes linked to three themes :

- 1) **Older people and long term conditions** - focusses on maintaining health in later life, supporting independence and improving rehabilitation for those with age related long term conditions (particularly in stroke recovery and dementia).
- 2) **Improving access to healthcare** - includes work to establish the clinical and cost effectiveness of new models of care and their impact on patients, organisations and health systems, particularly in emergency and urgent care.
- 3) **Community and family health** - draws together expertise in the areas of health protection and health improvement, from child health to support for carers.

With such a high proportion of our experienced staff being recognised methodologists, the work of individual research leaders often crosses themes and contributes to research teams across the UK and internationally. Our work combines interdisciplinary health services research methodologies, clinical trials, epidemiology, applied medical statistics and qualitative investigations, with expert knowledge in the fields of clinical nursing, rehabilitation and health service delivery. Our research programmes investigate the effectiveness of clinical and organisational interventions, psychosocial aspects of care and the impact of health policy on service users, organisations and the wider health care system.

Strategic focus since RAE2008: Our strategic focus has been to:

- **To increase research leadership to foster an excellent and sustainable research environment.** Leadership has been strengthened through the appointments of Collier (RSC) and Lattimer (NSC) as Heads of School; and Sackley (RSC) and Cheater (NSC) as Research Directors. The two Schools' common research interests and complementary expertise have been intelligently nurtured. It is planned that by 2014 the two Schools will integrate and so function as a single research community. We have prioritised programmatic research, illustrated

by the Stroke Recovery research team led by Pomeroy, who is the first UK investigator to win two NIHR EME (MRC & NIHR) programme awards. This environment and investment (see section 4.3) has enabled us to provide a vehicle for career development by attracting outstanding doctoral students and early career researchers and the development of innovative capacity building initiatives such as NHS junior research rotations.

- **To expand our competitive peer-reviewed externally funded research programmes.** Since RAE2008 our principal investigators have gained more than £8M in competitive research awards and we have been co-applicants on more than £13M of further research awards. Our research spend has more than trebled from £415K in 2006-7 to £1.44M in 2012-13; the size and number of our grants have both increased with 35 projects worth a total of £6.9M starting in 2012 compared with just 15 projects worth £360K starting in 2008. Our strategy has been to align our research priorities with those of patients, clinical partners and funders such as the NHS, NIHR, Research Councils and the Association of Medical Research Charities. We influence national funding and policy initiatives, through membership of key committees such as NIHR commissioning panels (Sackley, Pomeroy, Cross) and also through working with charities and other external stakeholders to inform areas such as the national dementia policy agenda (Arthur, Fox, Poland, Savva).
- **To embed patient and public involvement within our research.** The involvement of patients and the public underpins our research. Lay contributors are involved in projects from inception to dissemination. Since 2003, in collaboration with NHS organisations, UEA has initiated and formally supported a patient and public involvement in research project (PPiRES). PPiRES provides training and support to volunteers to enable them to contribute effectively to all stages of the research process. In 2009 Poland developed and led a UEA “User Involvement in Research Workshop” with increased integration of PPI within UEA research training from new PGR to experienced researcher development. Poland will lead on patient involvement research and practice in the recently awarded NIHR Collaboration for Leadership in Applied Health Research and Care (CLAHRC) East of England, with the University of Cambridge.
- **To ensure research dissemination maximises impact** we support research outreach activities to promote effective communication and to maximise its intellectual, scientific, economic, social and cultural impact. We are key players in the East of England CLAHRC, Eastern Academic Health Sciences Network (AHSN), and the Eastern Local Clinical Research Network hosted by the Norfolk and Norwich University Hospital (NNUH). To target our dissemination directly to the consumers of research we work with external agencies. For example, we produced a stroke care DVD for use in care homes which has been accredited by the UK Stroke Forum and distributed via the Stroke Association. We support staff to present at national and international conferences and to use Open Access publishing. We hold popular formal seminar series at School and Faculty levels, including joint monthly research seminars with the NNUH.

Activity and Outcomes since RAE2008: The essential purpose of our research is to improve the health of patient and community-based populations. We achieve this by developing and evaluating interventions to prevent and treat conditions and by improving our knowledge of effective health care delivery. We optimise impact through the delivery of multi-disciplinary, person-centred, methodologically robust and innovative research. Our research influences the quality of care in the UK and other countries, by identifying ways of improving access to services, methods of organisational improvement, as well as new clinical interventions that are effective, efficient, equitable and acceptable. Below we provide examples of activity within our three themes underpinned by our expertise in research methods.

1. Older people and long term conditions

RCTs

- HTA MATREX is the only RCT to evaluate the value of chest physiotherapy in treating acute exacerbations of chronic obstructive pulmonary disease (COPD). MATREX showed that this cornerstone of hospital physiotherapy practice was neither effective nor cost effective (Cross).
- HTA OTCH is the only RCT of Occupational Therapy for stroke survivors living in care homes. OTCH demonstrated that the approach used in patients’ own homes was neither effective nor cost effective when used in an institutional setting (Sackley).
- The EME SWIFT Cast Phase II Trial is nearing completion, examining neural and

Environment template (REF5)

biomechanical correlates of response to the use of an ankle-foot cast provided to improve walking recovery early after stroke (Pomeroy).

- Recent award of a HS&DR complex intervention study to improve the relational care (including dignity, empathy & emotional support) of older people, including a feasibility cluster randomised controlled trial of a values-based training intervention for Health Care Assistants (Arthur).

Systematic reviews

- A systematic literature review and meta-analysis provided some support for the hypothesis that a higher dose of the same type of exercised-based therapy enhances motor recovery after stroke (Pomeroy).
- A systematic review of the excess risk of incident dementia conferred by stroke identified that a history of stroke doubles the risk of incident dementia in the older population (Savva).

Observational and qualitative studies

- The MRC Cognitive Function and Ageing Study, a large longitudinal study of ageing in England and Wales, identified neuropathological correlates of dementia, epidemiology of behavioural and psychological symptoms of dementia and epidemiological models of frailty (Savva).
- Use of the MRC Cognitive Function and Ageing Studies data identified that a cohort effect exists in dementia prevalence with later-born populations shown to have a lower risk of prevalent dementia than those born earlier in the past century (Arthur).
- FACE-TIA, a prospective, controlled cohort study identified there is increased risk of cognitive and communication after transient ischemic attack (Sackley).

2. Improving access to healthcare*RCTs*

- HTA ESTEEM is the first RCT to investigate the effectiveness of telephone triage for managing requests for same day appointments in general practice. This recently completed trial shows that GP or nurse triage results in safe redistribution of primary care workload at a similar cost to usual care (Lattimer).

Systematic reviews

- A systematic review and meta-analysis found no significant effects of medication review by pharmacists on substantive clinical outcomes (namely, hospital admissions and mortality) for older people across all care settings nor did it demonstrate significant effects on quality of life or patient satisfaction (Holland).

Observational and qualitative studies

- Research to identify the impact of changing workforce patterns and skill mix in emergency and urgent care showed wide variation between systems and the need for strategic redesign to improve care pathways for patients (Lattimer).
- A mixed-method examination of the use and experience of out-of-hours care by parents of young children identified that good access to telephones does not automatically remove barriers to service access (Lattimer).

3. Community and family health*RCTs*

- Two cluster RCTs evaluating parent-centred interventions to support informed decision making for the MMR vaccine showed that engaging 'vaccine hesitant' parents through deliberation via a values-based component, enhanced informed decision making and increased vaccination uptake. Outputs include an accessible on-line decision aid (under consideration by NHS Choices) (Cheater).
- A community based RCT of a voluntary sector befriending scheme found no significant improvements in psychological wellbeing and quality of life for family carers of people with dementia from access to such a service (Poland).

Systematic reviews

- A systematic literature review and meta-analysis to identify the clinical presentation of childhood CNS tumours underpinned development of guidelines to assist with the identification and referral for imaging of children who might have a CNS tumour (Collier).
- A systematic review on the role and impact of social capital on the health and wellbeing of children and adolescents identified that family and community social capital are associated with positive outcomes for pre-school children, school-aged children and adolescents (Cheater).

Environment template (REF5)

Observational studies

- An observational cohort study of children presenting with suspected bacterial infection to an emergency department in England demonstrated the potential utility of a clinical score in risk stratifying children with suspected acute illness (Collier).
- Use of the National Child Development Study (the 1958 British birth cohort study) to identify the impact of adolescent stuttering found no evidence to support the belief that stuttering reduces educational attainment and employment (Collier).

Strategic aims, activity and targets for the next five years: Our strategy is working - our investment in effective research leadership is delivering the level of funding we need to support programmes of work. We use those programmes to underpin capacity development across the length of a carefully constructed, funded and mentored career pathway. Poland in her PPI leadership role across the whole of the East of England (via CLAHRC and AHSN) will ensure we can develop methodology to enable us to answer the questions prioritised by patients and the public and improve our impact.

Following the appointment of Collier to the role of Executive Dean of Social Sciences (UEA) on 01/08/13, Lattimer became Head of both NSC and RSC and there is now a commitment for the two Schools to integrate by August 2014. This will consolidate the already close working between the two Schools and capitalise on our complementary strengths to increase the impact and volume of our research. Over the next five years we will:

- Increase research programme grant income and expenditure to £3M pa, through collaborative research with world-leading institutions including Cambridge, Oxford, UCL, Vrij Amsterdam.
- Develop and lead an international centre of excellence in Acquired Brain Injury led by Pomeroy which will extend and develop the Stroke Recovery research to incorporate traumatic brain injury research, building on our established UEA/Cambridge University Alliance.
- Expand further our NHS research partnerships through our leadership roles within the recently awarded CLARHC (£19M over 5 years), Sackley as Deputy Director and Poland as PPI lead.
- Continue to lead patient and public involvement in research activity, practice and methodology; Poland will further develop PPI research and practice within the recently awarded NIHR CLAHRC East of England, with the University of Cambridge.
- Expand our research career pathway activity and build on our cadre of NIHR clinical academic research training and career award holders. Our existing CAT Masters level training alongside the new CLAHRC implementation fellowship and existing rotation funding will promote inclusion of practitioners in this research career pathway. We aim to diversify our doctoral and post-doctoral career development funding beyond our NIHR success by running master class workshops with UEA colleagues who have been successful in Wellcome, MRC, ESRC, EPSRC and EU training awards. We will also invest in post-doctoral capacity pump-priming posts to provide the time and mentorship to build the next generation of research leaders.
- Increase substantially the number of successfully completed doctorates.
- In partnership with NHS providers we will appoint three new clinical academic chairs across nursing sciences and rehabilitation sciences to work in our thematic areas of research.

c. People**i. Staffing strategy and staff development**

Staff recruitment: Our targeted investment in building research capacity has enabled us to recruit and attract eight established researchers of whom six are returned to UOA3 (Arthur, Cheater, Collier, Lattimer, Sackley and Savva) as well as five early career researchers (Gibson and Smith in this return). Over the next five years we will continue to recruit a balance of experienced researchers and early career researchers within our three main themes, building our critical mass further and enabling career progression and succession planning.

Staff development: All research-active staff are mentored and reviewed annually through formal and informal processes. The University requires research active academics to complete an annual research plan and self-report form (known as the RPlan), attend individual meetings with a senior research-active member of staff to set, discuss and monitor research career development goals and participate in annual appraisal and performance review. New staff members meet their Head of School and Research Director to develop and review career development plans and

Environment template (REF5)

expectations and to be inducted into UEA and School research policies.

We exploit fully the UEA research leave scheme which allows academics to apply for six months' leave from routine duties. From 2010 to 2013, nine staff applied successfully for research leave, increasing their research activity and peer-reviewed published outputs each time. Four other members of staff spent at least two years with 0.8FTE of their time committed to research through either externally-funded fellowships or with the agreement of their Head of School, successfully gaining funding and producing publications.

We have supported our early career researchers to make academic visits, attend specialist methodological courses and receive external coaching. We facilitate researchers making the transition from co-applicant to principal investigator: Cross was a new PI on a key HTA-funded respiratory physiotherapy trial with experienced co-applicant support from Harvey (UOA2) (MATREX). Following this Cross is now PI on the stroke rehabilitation trial (FESTIVALS) with Pomeroy as experienced co-applicant and Cross is supporting Smith in applications to the NIHR.

NIHR clinical academic training pathway: We support the full extent of the NIHR clinical academic pathway, from mentoring interns (Collier and Lattimer) to senior NIHR investigator (Sackley); Sackley was one of only 2 AHPs to be recognised as one of the 100 inaugural NIHR Senior Investigators, then reappointed in 2011. Sackley leads our NIHR-funded research Masters programme (awarded in 2012). We have also gained NIHR fellowships at doctoral level (two), post-doctoral level (two) and at NIHR Senior Fellowship level (one).

Implementation of the Concordat to support career development of researchers: UEA is committed to supporting the personal, professional and career development of contract research staff. A Research Staff Working Group, chaired by PVC for research, oversees implementation of the Concordat to Support the Career Development of Researchers. Departmental Research Staff Coordinators have been appointed to act as points of contact and mentors for research staff. In September 2012 UEA was awarded the HR *Excellence in Research Award* from the European Commission.

Evidence of support for equality and diversity: UEA's Single Equality Action Plan sets out equality and diversity policies. These are implemented proactively by the Equality and Diversity Committee. Information on relevant characteristics of staff and student populations is provided by an Equality and Diversity Officer and helps to ensure that equality and diversity considerations are taken into account in decision making. The University has achieved Athena Swan Bronze status. Each of the Schools represented in this submission is actively working towards Athena Swan silver status and of the 14 submitted researchers to UOA3, 9 are female including 6 of 8 professors. RESNET is a cross-UEA research support and development network to bring together women with common interests, promote career development, provide inspiration, information and support, and raise awareness of equal opportunities. We ensure that flexible working is accommodated whenever possible and necessary, and use individual research staff plans to identify ways to facilitate periods of leave (such as maternity leave) and successful return to work.

i. Research students

UEA has a thriving community of postgraduate research (PGR) students who are integrated into research programmes. There is strong leadership for PGR education from the FMH Associate Dean for PGR and School Directors of Postgraduate Research. MPhil and PhD programmes form the mainstay of our research education and much of the PGR research training is co-delivered across several Schools to enable interdisciplinary discussion and engagement. PGR numbers have been promoted through University investment of more than £450K of financial support for studentships within UOA3 during the REF period. Award of a UEA studentship is highly competitive; we select only the most able students, through robust systems to support research student recruitment, admission, progression and completion, with peer-review a key part of all processes. The development and support of supervisors is also an important aspect of our postgraduate research activity. New supervisors attend University and School staff development sessions on supervision and project management; inexperienced supervisors are teamed with an experienced colleague before becoming principal supervisors. There are regular supervisors' meetings to discuss topics related to quality of supervision, plus master classes in topics such as supervising international students. All supervisors must update training at least every two years.

In January 2013 the Faculty launched the Graduate school to provide a focus for all aspects of high quality PGR recruitment, education, supervision and completion. Students' research topics and methods are required to fit with supervisors' research programmes. This assists supervisors to remain focused on their own research areas and ensures students are significantly challenged and appropriately directed and supported. All students engage in an annual review of their progress complementing a formal process for upgrading from MPhil to PhD. The Faculty organises and delivers a broad and comprehensive range of research training courses designed to enhance personal, professional and career skills of postgraduate research students as required by the UK Research Councils in their Joint Skills Statement. There is a Faculty-wide programme of seminars on students' work in progress, and an annual PGR conference, in which students present and discuss their work. PGR students also showcase their research in an annual public engagement event in Norwich city centre, taking their research ideas to the community and raising public awareness of health research.

d. Income, infrastructure and facilities

Income: Research activity in FMH is supported by an increasingly wide range of external funders, for example: Government funding bodies such as the NIHR (e.g. HTA, EME, HSDR, RfPB), Department of Health, ESRC and MRC; EU funding; national medical research charities (e.g. Stroke Association, Dunhill, ARUK, Wellcome Trust, Asthma UK). Since RAE2008:

- Our principal investigators gained more than £8M in competitive research awards and we have co-applicants on more than £13M of further research awards.
- Our annual research income more than trebled to £1.44M in 2012-13 from £415K in 2006-7.

The upward trajectory of external research grants awarded and annual research spend - 15 new projects worth a total of £360K started in 2008 and 35 new projects (£6.9M) started in 2012 - provides evidence of our progress and the sustainability of the Schools' research programme.

Infrastructure and facilities: Each member of staff is supported to generate grant applications and manage awards by a named project officer from the University's Research and Enterprise Services (REN). REN operate robust processes for costing and advising academics in preparing grant applications; managing budgets for live research projects; recruiting and managing the employment of research associates and fellows.

The Norfolk and Norwich University Hospital (NNUH) is a close research partner, providing acute inpatient and outpatient care in most specialities and is the eighth busiest hospital in the UK. The NNUH Research and Development Office forms part of the Joint Research Office (JRO) managed by REN. The JRO supports all research conducted in the hospital in partnership with UEA, NHS Trusts and the Norwich Research Park. The Trust hosts the Eastern region LCRN which includes Norfolk, Suffolk, Cambridge, North Herts, North Essex, Beds with a population of about 4 million. Together we work with the Research Design Service to support research activity enabling us to bid for, gain and deliver large complex research projects.

The Norwich Clinical Trials Unit (CTU) and Clinical Research Facility with space at the NNUH and at UEA opened in 2005. The CTU has full UKCRC registration. Arthur and Sackley have leadership roles within the CTU Management Committee (Sackley as Associate CTU Director). CTU core staff include statistical, health economics, clerical, quality assurance and IT staff to assist in study design, randomisation, database creation and management, and clinical trial management (project management and Standard Operating procedures). A new Clinical Imaging and Research Centre (NNUH and UEA), has enabled the stroke rehabilitation research programme to use the new 3T MRI scanner (one of the most powerful in the world and the first system of its kind in the UK).

The University's support for this UOA can be seen in its investment in the built environment, such as the state-of-the-art Movement and Exercise facility comprising two purpose built rehabilitation research facilities; the Movement Analysis Laboratory and the Clinical Exercise Physiology Laboratory (<http://www.uea.ac.uk/foh/starlab>) to support Stroke and Rehabilitation research enabling neurophysiological and biomechanical assessments.

Our research is supported by UEA's Information Technology and Computing Services, which provides an excellent computer network and access to >7000 journals through UEA Library and the NNUH library, including the NHS Electronic Library. Library services are available online and

the UEA library building is open 24 hours, 7 days a week.

e. Collaboration or contribution to the discipline or research base

Our research contributes to the Allied Health and Nursing evidence base and disciplines through many routes. Researchers are involved in funded collaborations with the Universities of Exeter, Bristol, Warwick, Southampton, Nottingham, York, Oxford, Leeds, Cambridge, Newcastle and Birmingham amongst others. This has had a direct impact on practice through national clinical guidelines, contributing to international and national policies, dissemination to clinicians through professional bodies and journals, to pre-professionals in key educational texts and on the wider culture of healthcare through active involvement in many national and international professional and policy making bodies. Academics are supported to use their knowledge and skills to contribute to key committees that strategically influence national, European and international research direction and resource allocation. The expertise of our academics and their leadership within their fields is acknowledged in many ways, such as in the keynote or plenary session invitations at international and national conferences, positions on editorial boards, policy positions and board membership of grant-giving bodies. A few key examples are below:

Invited keynote presentations

- Pomeroy (University of Washington 2009; UK Stroke Forum, Glasgow, 2009, 2011; Emory University, Atlanta 2010; James McDonnell Foundation, 2008; Irish Heart Foundation Council on Stroke 2012; Stroke, Sydney Australia 2012; French Physiotherapy Conf., Paris 2013);
- Fox (ICAD conference, Paris, 2011; BGS, Edinburgh 2012; American Association of Geriatric Psychiatry; Los Angeles, 2013).
- Sackley (12th Annual Dementias Conference, London 2010; House of Lords, London, May 2011; Research for World Class Occupational Therapy Practice, London 2012, World Huntington's Disease Conference, Rio 2013).

International practice improvement and policy development

- Poland worked with the Executive Committee of the Community Based Rehabilitation (CBR) pan-African Network (CAN) and designed and delivered intensive project writing skills workshop in Ghana for CBR national project leads from six West African countries.
- Poland was National Chair of the Association for Research in the Voluntary and Community Sector (2008-2011, now Vice Chair), setting up a series of annual national debates and training events on key issues within research for and with communities.
- Fox has an 8 year collaboration with the Regenstrief Institute, USA with funded projects from the pharmaceutical industry, NIHR-HTA and NIHR-PGAR and the MRC-CFAS project.
- Sackley's work on management of stroke in care homes and domiciliary settings and for severe stroke are included in the European Stroke Organisation Guidelines for the Management of Ischaemic Stroke and Transient Ischaemic Attack (2008).

Grant awarding and strategic review bodies

- Pomeroy: Stroke Association Research Awards Committee (2004-2009): NIHR HTA; Chair of Research Awards Panel for Network of European Funding for Neuroscience Research, 2011).
- Sackley: EU FP7; NIHR / CNO CAT Programme for Nurses, Midwives and Allied Health Professionals; Research Training Fellowship for Healthcare Professionals Committee, Health Research Board, Ireland; Grants and Research Committee, Dunhill Medical Trust; The Stroke Association; as well as sitting on 13 further funding bodies since 2008.
- Smith: Associate member of the NIHR Health Research and Delivery Research Board.
- Lattimer: HTA Trauma and Emergency Care Board 2008-2009.
- Cross: HTA Elective and Emergency Specialist Care Panel (EESC) since 2012.
- Cheater: HSR and Public Health Committee, Chief Scientist Office (CSO) for Scotland (2009-2012), NIHR RfPB (Yorkshire & Humber) committee (2006-2009).

Journal editorial positions

Pomeroy (Neurology, Associate Editor, Journal of Neurologic Physical Therapy); Smith (Associate Editor, The Knee); Poland (Editor, Quality in Ageing and Older People); Fox (Sub-editor, Faculty of Old Age Psychiatry); Cheater (Editorial Board, Quality in Primary Care). Lattimer (Editorial Board, Health Systems).