Institution: Coventry University

Unit of Assessment: 3

a. Overview

Improving people's health and care across the lifespan

Research in this Unit is fully multi-disciplinary, and includes nurses, allied health professionals, health psychologists, exercise physiologists and biomolecular scientists. These researchers collaborate closely with 14 researchers from the same Faculty who are submitted to UoA4. Research within this UoA3 is organised in three research groups: **A: Health and Wellbeing**, **B: Studies in Sexual Health** and **C: Biomolecular Therapeutics.** These groups have an overarching aim to improve people's health and care across the lifespan.

(A) Health and Wellbeing (Leader Wallace)

Members: **Coad, Duncan, Furze, Lycett, Staniford, Singh, Szczepura, Turner, Wallace, Williams** plus ten research assistants

This research group embraces partnership working with service users, voluntary organisations and health and social care providers. The main aim of the group is to support people to have better health and wellbeing, through **co-creation** with service users of theory-based health behaviour interventions, **co-research** with service users as partners in the research process (see **case study 3.2**), and **co-delivery** of interventions by health professionals and service users. The research includes the development and rigorous evaluation of i) outcome measures for clinical practice and ii) interventions to improve health and wellbeing which may be focussed on community or public health (such as increasing the duration of breastfeeding or promoting physical activity), or for people (including children) with long-term conditions (see **case study 3.3**).

(B) Studies in Sexual Health (Leader Brown)

Members: **Brown, Newby, Wallace** plus five research assistants

This group of researchers has researched and produced innovative approaches to sexual health care, sexual health promotion and sex education. The research involves the development and testing of complex interventions to improve sexual health and wellbeing in young people. Sexual health and wellbeing is a cross-cutting University research theme, and as such the group work with researchers (**Bowen, BrownS** and **Grubb**) submitted to UoA4 who undertake research into dating violence among adolescents, and also collaborate with **Barrett** (submitted to UoA21) on European Union funded (£579,210) studies into female genital mutilation (FGM) (see **case study 3.1**).

(C) Biomolecular Therapeutics (Leader Maddock)

Members: **Hatch, Maddock, Mee, Morozov, Rollason, Sandhu, Wallis**

These researchers undertake non-clinical and clinical-based research investigating the suitability, safety, toxicology and effectiveness of existing and conceptual therapies including pharmaceuticals. Topic areas include infectious diseases (HIV, hepatitis C and malaria) and long-term conditions including cancer, cardiovascular disease, diabetes and obesity.

b. Research strategy

Overall Unit achievements: This Unit has improved all aspects of its research since 2008, surpassing all targets set then. The number of staff submitted has increased by 20% and external research income has grown significantly (from £2.14 million in the RAE 2008 period to £8 million between 2008 and 2013). The improved quality of our research is demonstrated by our ability to attract National Institute for Health Research (NIHR) and EU funding, and our increasing success is directly due to the supportive and vibrant research environment that we have fostered.

(A) Health and Wellbeing

Achievements: At the last RAE this group were already recognised for research into the assessment of efficacy of behavioural interventions based on health psychology theory, particularly for people with long-term conditions. The recruitment of **Coad**, **Furze** and **Szczepura** extended expertise in: self-management interventions (**GF1,4**), communication with children (**JC1,2,3,4**), and methodological expertise for research (**AS1,2,3,4**). The Unit has received over £700,000 research funding from the NIHR/MRC (**Wallace, Singh, Coad** and **Furze**) and over £1 million from national Charities (e.g. Macmillan: **Turner**, and the Health Foundation: **Wallace**).

Achievements in health behaviour change methodologies and techniques A key achievement has been in developing theoretical stances and the methodologies used in behavioural interventions to

improve health and wellbeing. For example, **Turner** and his co-workers undertook research, including randomised controlled trials (RCTs), of Stanford University's lay-led self-management intervention based on self-efficacy theory, delivered in the UK as the Expert Patient Programme. The limitations of the Stanford approach (**AT1,2,3**) led **Turner** to develop novel lay-led self-management programmes (the Help to Overcome Problems Effectively [HOPE] programmes) based on positive psychology (**case study 3.3**). These were funded (£87,500) and adopted nationally by Macmillan Cancer Support. In further research into lay and clinician co-working, **Wallace** and **Turner** evaluated the Health Foundation's "Co-creating Health" initiative (**LW2,3**), finding that co-creation led to some improvements in self-management skills in service users.

Williams has collaborated with leading health psychologists (e.g. Professors Michie (UCL) and French (Manchester)) to further develop and refine a taxonomy of health behaviour change techniques (**SW1**), originally developed by Abraham and Michie. **Williams**' research on the taxonomy standardises definitions of the techniques included in behaviour change interventions, to ensure that interventions can be fully replicated. Previously this standardisation was missing.

Achievements in improving understanding of service user needs and preferences The Unit has long supported user engagement in research. Achievements in this census period have improved understanding of the needs of children (**JC1,2,3,4**) and South Asian people (**AS1**). For example, in **Coad**'s large-scale study using appreciative inquiry among children with complex care needs, their families and children's nursing services highlighted the "postcode lottery of provision" (**JC3**), findings which have fed directly into government policy and practice (see **REF 3a**).

Szczepura has extended understanding of the needs of South Asian people in the UK to improve their uptake of health services. Her involvement in the United Kingdom Asian Diabetes Study RCT (**AS1**) found that a culturally sensitive care package was not fully successful, but importantly, the study demonstrated that it was possible to recruit people from these seldom-heard communities to large trials. **Szczepura's** work has informed patient advocacy groups such as Diabetes UK and Parliamentary task force advisory groups.

Achievements in evaluating outcome measures and interventions to promote health and wellbeing
Singh (a clinical academic) has improved outcome measurement in pulmonary and cardiac rehabilitation. Her original and internationally renowned research has established the minimum clinically important difference (the threshold of measurement that is both statistically significant and meaningful to the patient) for the incremental shuttle walking test (**SS1,3,4; case study 3.2**). **Singh** also developed and evaluated rehabilitation services based on similar disability (COPD and heart failure) rather than on specific diseases (**SS2**) - an insight predating by three years similar recommendations from he Department of Health Cardiovascular Disease Outcomes Strategy.

Wallace collaborated with Professor Belkora (University of California) and Edinburgh Cancer Centre on one of the first RCTs of decision navigation in recent-onset prostate cancer (**LW4**). The decision tool improved service users' confidence in their decision making for treatment and care.

Furze has used co-creation methods to research the development (**GF1,4**), co-delivery (**GF4**) and outcomes (using RCTs) of self-management programmes for people with heart conditions, one of which (**GF1**) was adapted for delivery in Portugal in a study funded by the Portuguese government.

Singh, **Duncan** and **Lycett** (expertise in measurement of physical activity and weight), have joined with **Furze** and **Williams** (expertise in the development and assessment of theoretically-derived interventions), to research interventions to improve physical activity and nutrition. This group has undertaken rigorous research on physical activity in children (**MD1,2,3,4**) and physical activity and weight in adults (**SS1,2,3,4; DL1,2,3,4; GF1,4; SW2,3**). **Duncan** has used the recently developed Lean Body Mass Index in a new context, with a paediatric population (**MD1**). The results showed that this is a better metric for measuring obesity in children than the previously applied Body Mass Index. The Lean Body Mass Index was further validated among Portuguese schoolchildren in collaboration with Professor Mota (University of Porto) (**MD3**).

(B) Studies in Sexual Health

In the RAE 2008, **Wallace** was the only submitted researcher in sexual health. Since then, the research group has been strengthened with the promotion of **Brown** to Reader, in order to lead the group, and employment of **Newby** plus five research assistants. The group's original research focused on several major drivers for public health: reducing unwanted pregnancy; abortion; and

sexually transmitted diseases in adolescents. Their systematic approaches combine psychological theories of change processes (**KB2,3,4; KN1,3)** with end-user and stakeholder engagement (**KN2**).

Achievements: Research has demonstrated positive impact on a range of outcomes (**KB2**) and the interventions are now embedded in practice and public health services. Since 2008, the group has built strong partnerships with public health departments and European and international universities. Achievements are further described in **case study 3.1**.

(C) Biomolecular Therapeutics

Maddock was the only biomolecular scientist submitted to the RAE 2008; since then she has built up a team researching disease diagnosis and prevention.

Achievements: A significant research outcome is a miRNA biomarker to assess the cardiotoxic or cardioprotective effects of new drugs, which has potential benefit for pharmaceutical companies, in preventing or reducing the development of myocardial damage from new drugs. Recently, **Maddock** and **Sandhu** have collaborated with **Furze**, **Coad** and clinicians at Birmingham Children's Hospital in translational research into the clinical use of genomic biomarkers to detect subclinical myocardial injury resulting from treatment for cancer. **Maddock**'s heart contractility research is being patented and is the basis for a new spin-out company, InoCardia.

Hatch (EH1,2) undertook a rigorous study (**EH1**) of the C3aR receptor system in the mechanisms of experimental nephropathy which has significance for identifying potential treatments. **Mee (CM1,2,3,4)** has contributed to the development of new research fields in hepatitis C studies. For example, **CM1** gives the research field the first in vitro model system for analysing the effects of anti-viral compounds on HCV infection in polarized tissues. Also, **Mee** was a member of an international collaboration undertaking experiments of the role of EGFR and EphA2 in hepatitis C infection (**CM4**). The results have high significance for the potential treatment of hepatitis C infection with tyrosine kinase inhibitors. **Sandhu's** research (**SH1**) used an original methodology of organ bath culture of rat cerebral vessels to mimic cerebral ischaemia, which may have potential for the development of new stroke therapies.

Future Research Strategy

Over the next five years the Unit will:

1. Develop further research in health behaviour change techniques
   - Contribute to the further development and refinement of the taxonomy of health behaviour change techniques and associated competences to provide more robust interventions and to educate health professionals in their use. The aim is to capture all behaviour change techniques such that in future they are specified correctly. This recognises the need for a strong theoretical base in order to develop effective, evidence-based health behaviour change interventions and the accompanying clinician education.
   - Further develop the theoretical model of co-production of clinical consultations to support self-management of long-term conditions, using a behavioural competence model. This work will be undertaken in collaboration with Professor Roter (Johns Hopkins University).
2. Build further capacity for original research
   - Extend cross-Faculty links for translational research to test the value of genomic biomarkers as predictors of subclinical myocardial damage in clinical practice, aiming to achieve significant research funding with NHS partners. We will also build on our current links with pharmaceutical and bioscience industries to exploit the patents filed by the University with **Maddock** that support the new spin-out, InoCardia.
3. Improve patient and public participation in research
   - Build on **Coad's** research to promote the voice of children, particularly those with disabilities or complex care needs, in decision-making for their care. Children and young people will help to set the future research strategy. Support for the growing numbers of children with long-term conditions or complex care needs, and their parents, is an increasing priority for both government and third sector research funders.
4. Build on and develop existing and new international collaborations for research
   - Extend the research with Qiu (Deputy Director of Women's Health at Zheziang University

School of Medicine) to improve practitioner support to extend breastfeeding duration, and further develop the decision navigation research with Professor Belkora (Director of Decision Services, University of California, San Francisco).

- Apply for Horizon 2020 funding for European collaborative research on genomic markers (an identified priority of Horizon 2020) to identify subclinical myocardial injury, working with Professor Imre (University of Medicine and Pharmacy of Targu-Mures) who will visit in 2014 as an International Visiting Professor (see section e).

5. Address international and national priorities for research

There are both international and national policy drivers to i) support the increasing numbers of people living in old age with multiple co-morbidities and ii) improve health among seldom-heard communities[1,2]. To address these we will:

- Develop effective generic programmes to support successful rehabilitation and self-management (c.f. Cardiovascular Disease Outcomes Strategy, DH 2013). We have started this work by developing and testing the HOPE programmes for different long term conditions. The challenge for the future is to assess the efficacy and cost effectiveness of HOPE when delivered as generic services for people with co-morbid long-term conditions (see **case study 3.3**).
- Improve the uptake and reach of self-management and community wellbeing programmes among people who currently do not access these. This will extend our existing research with women and ethnic minorities, including the FGM research, using a community asset-based approach with co-creation and co-delivery, and then assessing these with co-research (see **case study 3.1**). The interdisciplinary approach, working with researchers submitted to UoA21, is important to ensure that services are tailored to meet the needs of the seldom-heard.
- In response to international and UK drivers on the "obesity epidemic", build on our current research around "Health At Every Size" interventions for their potential in addressing wellness, including fitness, in people described as obese.

In order to deliver this future research strategy the Unit will extend a number of existing capacity-building initiatives, including to:

- Further develop our Research Support Volunteer Programme (see **REF3a**), recruiting more people with different experience, and linking with the lay panels supporting research in UoA4. This will enable us to address public concerns about research, and will also support public involvement in the Unit's rapid responses to any new research priorities.
- Build on current numbers of PhD students in the Unit. We will increase these to a steady state of 30 PhDs (10 new PhDs/ year). This will be funded from four sources: NIHR and charity scholarships, industrial sponsorships, research programme grant funding and Faculty-funded PhD bursaries.
- Support staff to develop their research by applying for internal and external funding. For example: support **Newby** and **Maddock** to secure Coventry Applied Research Fellowships (see section e); support **Maddock** to develop an international MRC grant application with the world leading Hatter Institute in Cape Town, investigating the role of STAT3 in drug-induced cardiotoxicity, and support **Newby** to identify funding to collaborate with Leiden University on research into shared determinants of multiple lifestyle interventions.

c. People, including:

i. Staffing strategy and staff development

We have focussed on strengthening staffing and broadening our methodological expertise, in order to create a vibrant research culture which in turn increases the sustainability of the Unit's research. This has been achieved through a combination of supporting our own researchers to progress (e.g. **Maddock**, **Williams** and **Duncan** have been promoted during this REF period), and of bringing in experienced researchers (e.g. **Coad, Furze** and **Szczepura**). We have a clear career pathway for research staff, which includes support for new appointments, including early career researcher

[1] World Health Organisation 2011 Global Health and Aging.
[2] Public Health Policy & Strategy Unit/NHS Commissioning Unit 2013 Living Well for Longer

training, provision of permanent contracts where appropriate and a comprehensive principal investigator training programme:

New staff have reduced teaching loads (by approximately 20%) for the first year of their appointment. Additionally, the Unit was the first to adopt the formal University Research Mentorship Scheme that matches new staff, including early career researchers (ECRs), with experienced mentors, external to their immediate research team. The scheme gives new staff a broader perspective on their research development and also provides career support for more experienced researchers, e.g. **Furze** mentors **Turner**. The staff development programme "Supporting Applied Research at Coventry" provides the knowledge and training required by new researchers, with a range of further training and staff development schemes available.

Support for new investigators is strengthened by the Faculty Research Support Office (RSO). All researchers can access RSO support; however it is particularly aimed at new Principal Investigators in order to bridge the gap until a funded research team is in place. The Business Development Group (BDG) works with new staff and ECRs to develop their skills in writing grant applications. ECRs are also encouraged to peer review grant applications, and are included as co-investigators on applications alongside experienced staff, e.g. **Sandhu** and **Maddock**.

Development of early career researchers to become independent researchers is strongly emphasised in this Unit, in order to promote a sustainable and forward looking research culture which includes succession planning. Recruitment of new research staff favours those with either a well-developed research profile and strong publication list, or those who demonstrate their potential to achieve such a profile with support. Recent examples include the recruitment of ECRs **Lycett** and **Mee**, who have strong research trajectories following their recent PhDs and are both being submitted to the REF with four outputs. ECRs are encouraged to present their work at Unit research seminars including shared seminar series with UoA4. "Writing retreats" are held with both experienced and early career researchers to support and develop writing for publication.

Sustainability: In order to ensure a positive culture and stable environment for developing research careers, the Faculty has extended the employment contracts of researchers who are at the end of a fixed-term contract but have demonstrated strong research ability. These contract extensions are built on business cases, and recent beneficiaries include **Newby** and **Williams**.

Protected scholarship time of five weeks per year is provided to all lecturing staff within their contract of employment. In addition, the Unit provides protected research hours which reduce teaching contact hours. Staff can use research project funding to obtain part-time lecturing cover for their teaching, e.g. **Brown** benefitted from this prior to promotion to Reader.

University support for career development: The University is using the Careers in Research Online Survey (CROS) and Principal Investigators and Research Leads Survey (PIRLS) to implement the principles of the **Concordat** to support the career development of researchers. The University was awarded the European HR Excellence in Research Award as a result of its Concordat submission in January 2013. **The Open Promotion Scheme** operates on a set of published criteria linked to our appraisal process, and is entirely based on demonstrating that the researcher has met the criteria; there are no budgetary limits or quotas. Researcher development activities are aligned to research career stages, and include programmes such as Leading Research Groups, Media Skills, and Doctoral Research Supervision, as well as access to generic University staff development offerings of over 100 programmes. External researcher development activities include those provided through the Leadership Foundation for Higher Education, the Midlands Staff Development Partnership and VITAE Hub events. As a member of HEATED (Higher Education and Technicians Education and Development) we also ensure that teams such as **Biomolecular Therapeutics** are supported by skilled technical support staff.

Clinical academics such as **Singh** are integrated within a research centre which offers full research support and accommodation. NHS-employed researchers are encouraged through Comprehensive Local Research Networks (CLRN) funded mentorship schemes (**Furze** has mentored two such researchers), and are integrated through the use of Honorary Research Fellowships (e.g. **Singh** mentors an Honorary Research Fellow from a neighbouring NHS Trust).

Equality and diversity is monitored through regular Equal Pay Audits. At our most recent Audit (2010), the Gender Pay Gap for Academic Staff at Coventry was 2.81% compared with 13.5% for the Higher Education Sector (Source ECU 2010). Coventry is a member of the Athena Swan

Charter. Unit members played a key role in the successful submission for the Bronze Award at University level, and are now leading the team working towards a Bronze Department award. Coventry is also a Stonewall diversity champion.

ii. Research students

Staff in this submission currently have 28 doctoral students registered for PhD, and have had 17 successful PhD completions since 2008. The Unit has increased the number of fully funded PhD studentships available each year on a competitive basis, and currently funds seven students.

The development of **effective and sustainable doctoral research training** has been a strong focus, and since 2008 we have revised the **Research Degree Framework**, to provide greater support for students, to improve the student experience and to increase completions. All research students undertake modules which instil key research skills and undergo an annual Progress Review Panel, chaired by an independent academic, with independent assessment of written work and review of supervisory experience. The Research Assistant Registrar monitors progress using the Student Record System. Overall research degree cohort performance is overseen by the Research Committee and Faculties are required to address any issues identified. In this Unit each PhD student has a **supervisory team** of three people who meet with the student regularly. This wider team ensures a breadth of subject specific and methodological support. This strong support is demonstrated by the acceptance of the Cochrane Heart Group for a Cochrane systematic review to be undertaken by a PhD student jointly supervised by **Furze, Lycett** and **Turner**.

In addition to mandatory research modules, the **Skills Development Programme** offers essential skills workshops throughout the year which focus on developing professional and career skills. Research students are also supported by the **Statistics Advisory Service** (provided by Sigma, the award winning Mathematic Support Centre); the **Centre for Academic Writing** (in individual, group or online activities) and can access the **Epigeum** on-line training research modules. The **Careers, Employability and Enterprise Programme** is organised throughout the year to help research students understand relevant employment markets. The Faculty hosts a monthly support group / workshop for research students and supervisors, which is well attended by this Unit.

We have **developed a strong and integrated research culture** for research students using a multi-faceted strategy. For example, in order to increase integration the **Faculty Research Student Symposium** has been incorporated into the **Faculty Research Conference,** so bringing student research to a larger audience of staff and external visitors. The best submissions from the Faculty Research Student Symposium are included in the University Student Research Competition, also attended by staff. The research groups hold **programmes of seminars** for staff and students, delivered on occasion by leading external academics, e.g. Professor Michie on the taxonomy of behaviour change techniques. Additionally, supervisors arrange for students to work with world leading researchers in their area, e.g. **Duncan's** PhD student worked with Professor Seebacher (University of Sydney). Research students are funded to present their research at external conferences, e.g. students within this Unit regularly present their work at the Midlands Health Psychology Network meetings.

Independent advocacy and advice for research students is provided by the Faculty Postgraduate Research Tutor, who works with the Faculty Research Degrees Lead (an Associate Dean) to oversee the research student pathway and develop action plans to meet needs identified in the annual survey of research student experience. Additionally they meet regularly with student representatives ensuring that student concerns are addressed rapidly.

d. Income, infrastructure and facilities

A strong infrastructure and support for income generation is required to ensure that current and future research strategy delivers a vibrant and sustainable culture.

Infrastructure: Researchers are housed in their own suite of offices with a staffed reception area, which also includes meeting rooms and offices for research students. The work of the Unit in the development of web-based interventions, e-health apps and other e-resources for both patients and practitioners is supported by experts in the Serious Games Institute and the Health Design and Technology Institute (both co-located on the adjacent University Technology Park with industrial partners). The building which houses the **Biomolecular Therapeutics** group contains both their offices and laboratories, which have full technical support. The University has obtained planning permission for a £60 million new laboratory building to be open in 2016. This will support all lab-

based research within the University, and include facilities for the **Biomolecular Therapeutics** team for research, in addition to a well-equipped clinical simulation unit and physiological measurement facilities for health research. In accordance with national and international policies, the **Biomolecular Therapeutics** group reciprocally share outstanding research laboratory facilities with University Hospital Coventry and Warwickshire and University College London, and has shared research samples with Birmingham Children's Hospital. Additionally, the group will have contractual access to specialist laboratories at the University of Warwick.

Income: This Unit has considerably increased its research income to £8.15 million in the current REF period, equating to £92,700 per person per year, which is more than double the comparable RAE 2008 benchmark figure of £39,000 per person in this Unit. This increase in income is a result of, and supports, increased research capacity and methodological expertise. Funders include UK Government (e.g. Department of Health on Improving the care of children requiring ventilation, **Coad** £200k), EU (e.g. Research on female genital mutilation, **Brown** and Barrett £579k), Charities (e.g. MacMillan Cancer Support to develop a support service for breast and prostate cancer, **Wallace** £200k) and the Private Sector (e.g. Jaguar LandRover on the assessment of physiological parameters of drivers £70k).

Research funding portfolio development is supported by the Faculty Business Development Group (BDG), who have extensive public and private sector experience including in healthcare, design, pharmaceuticals, and IT companies. The Faculty BDG team works with individual researchers and groups to identify research, consultancy and knowledge transfer opportunities, and accompanies researchers to European networking events where needed; for example, **Brown** benefited from this support in preparing her funding bid for research in female genital mutilation.

Intellectual property (IP) support for researchers or research students seeking to commercialise their research is provided by BDG. The BDG work to protect the IP, identify commercialisation opportunities, apply for internal and external funding including applying to the University's Equity Committee or external venture capital sources, e.g. **Maddock** was supported to develop a patent application and to apply for early stage venture capital funding from Mercia Fund Management, through two of their funds: 'Mercia Fund 1' and 'Mercia Growth Fund – SEIS'.

Ethics and research governance is led by **Coad**, an experienced member of NHS Research Ethics Committees and of the Royal College of Paediatrics & Child Health Steering Group for research in infants, children and young people. Ethics applications are mandatory for all projects, using an online system which includes access to the Integrated Research Application System (IRAS) for those requiring NHS approvals. Additionally, all researchers in this Unit attend NIHR accredited training on research governance, to maintain the highest ethical standards.

e. Collaboration or contribution to the discipline or research base

Indicators of wider influence and contribution to the discipline or research base:

Staff influence the discipline base by undertaking roles within professional organisations. For example, **Singh** is the Chair of the European Respiratory Society / American Thoracic Society Taskforce on Pulmonary Rehabilitation. As a result she has bought her research on the incremental shuttle walking test to the attention of the Society and it is now cited in international guidelines (American Thoracic Society and European Thoracic Society Statement for Pulmonary Rehabilitation and the British Thoracic Society Guidelines on pulmonary rehabilitation). Similarly, **Furze**'s research is cited in British guidance for the delivery of cardiac rehabilitation. In her role with the British Association for Cardiovascular Prevention and Rehabilitation, **Furze** co-authored publication of this guidance in Heart. **Williams**' research, developing the taxonomy of behaviour change techniques, has had wider influence in the discipline and has been included in the House of Lords Science and Technology Select Committee inquiry into behaviour change.

Membership of research grants panels or other external bodies

The Unit's researchers participate in peer-review of research grant proposals and are members of funding panels and health organisations. Examples include: **Coad**: WellChild Research Grants Panel, Steering Group committee member (2012-17); **Furze**: NIHR Research for Patient Benefit Funding Panel Member (2011-); **Szczepura**: Member BMA Board of Sciences Award Grants Panel (2007-), Member NIHR Fellowships Panels (Post-doctoral, Career Development & Senior Research Fellowships) (2007-); **Wallace**: DH SDO Panel Health Services Research (2009-11), invited member of the NIHR Health Services and Research Development panel (2011-).

Journal editors and editorial boards

All staff are encouraged to undertake editorial roles for academic and professional journals, for example: **Coad**: Editorial Board of Nursing Children and Young People Journal (2002-13), Editorial Board of Arts & Health International Journal (2008-); **Furze** Editorial Board of British Journal of Cardiology (2011-); **Maddock**: Editor of British Society for Cardiovascular Research Journal Bulletin (2000-10); **Newby**: Sub-editor of Health Psychology Update (2011-); **Singh**: Editor of Chronic Respiratory Disease (2008-), Associate Editor of Physiotherapy (2008-).

Academic and industrial collaboration

The Unit collaborates with **international academic partners** in validating tools and extending interventions. Examples include: **Australia** (**Brown**: Curtin University, Perth and Sydney), **Belgium** (**Duncan**: KU Leuven), **China** (**Wallace**: Zhejiang University), **Denmark** (**Rollason**: University of Southern Denmark), **Finland** (**Szczepura**: VIT Technical Research Centre), **Greece** (**Szczepura**: National Centre for Scientific Research, Athens, University of Thesaloniki), **Germany** (**Szczepura**: University of Bremen), The **Netherlands** (**Mee**: University of Groningen), **Norway** (**Furze**: University of Stavanger), **Portugal** (**Duncan**: University of Porto; **Furze**: Instituto Piaget, Lisbon), **South Africa** (**Maddock**: Hatter Institute, Cape Town), **Sweden** (**Sandhu**: Lund University), **United States of America** (**Coad**: Texas Christian University; **Wallace**: University of California). We collaborate with **international industrial partners** to commercialise our innovations, examples include: Jaguar Land Rover and Covance (**Maddock**), Proctor and Gamble (**Hatch**) and Bayer Healthcare (**Brown**).

Our UK research collaborations with **UK University partners** include: **Birmingham** (**Maddock, Mee, Rollason, Sandhu, Singh, Wallace**); **Bristol** (**Coad, Szczepura**); **Dundee** (**Furze, Wallace**); **Edinburgh** (**Wallace**), **Leicester** (**Singh, Szczepura**); **Manchester** (**Mee, Newby, Szczepura, Wallace, Williams**); **Warwick** (**Coad, Furze, Maddock, Turner, Wallace**); **York** (**Furze, Wallace**).

NHS collaborations include University Hospitals Coventry and Warwickshire, where the Unit had significant input into their strategy for research into nursing and allied health professional practice research. Additional research collaborations include University Hospital South Manchester, Birmingham Children's Hospital, University Hospitals Leicester, and Edinburgh Cancer Centre.

Response to international and national priorities

The main focus of our research is in response to overarching priorities around older people and seldom-heard communities. For example, the Unit is developing its research on diabetes in South Asian communities, responding to the UK Government's 2013 policy on reducing obesity and improving diet. It is developing its self-management interventions to help cancer survivors to live more comfortably (UK Government policy 2013) and is targeting the UK Government's policy on giving all children a healthy start in life (2013), specifically targeting the aims of reducing childhood obesity by promoting healthy eating and physical activity and encouraging mothers to breastfeed.

Effective mechanisms to support international collaboration

The **Applied Research Fellowship** (ARF) funds research staff to spend 6-8 weeks/year at an internationally-ranked University or with an industrial partner. The funding is competitively awarded and supports the Unit's international research strategy by encouraging long-term research collaboration. Researchers in this Unit who have benefitted include **Duncan** (Mota– see **MD3**).

Research Sabbatical Fellowships (RSFs) of up to 12 weeks every year are available by open competition. This scheme is unusual in that there is no qualifying period. Decisions are made solely on the merit of the research proposal and funding releases the researcher from lecturing duties to undertake research. The ARF and RSF can be run consecutively. **Maddock** was supported by an RSF to undertake work on genomic biomarkers, and then benefitted from ARF funding to visit Imre in Romania to further develop the research.

International Visiting Professor Scheme is a centrally funded award bringing international researchers to Coventry to develop long-term relationships and collaborative funding bids. For example, Professor McGillion (Heart and Stroke Foundation / Michael De Groote Chair in Cardiovascular Nursing, McMaster University) will visit as an International Visiting Professor in 2014 to collaborate on research to improve self-management support.

In conclusion, the environment for research within this Unit has supported a vibrant culture which has helped the staff to increase and improve on their successes in the last RAE.