Institution: University of Exeter

Unit of Assessment: UoA2 Public Health, Health Services and Primary Care

a. Overview

This submission comes from the Institute of Health Research (IHR) of the University of Exeter Medical School (UEMS). Our equivalent submission in 2008 came from the Institute of Health Services Research of the Peninsula Medical School (PMS). PMS (a partnership between the Universities of Exeter and Plymouth, established in 2000) was one of the most successful of the new medical schools in RAE 2008. This success was built on a vigorous and focussed research strategy. However, the two Universities developed different visions and priorities, and in 2012 a joint decision was made to demerge the partnership, resulting in each University having its own Medical School. Therefore, this submission includes research undertaken by University of Exeter (UoE) staff within PMS prior to the development of UEMS, and within UEMS since the demerger. These changes have enabled the development of a renewed strategic vision by UoE since 2012.

UEMS is one of six Colleges in the University of Exeter; an institution which joined the Russell Group of research intensive Universities in 2012. Exeter's Research Awards have risen from £42 million in 2008-09 to £81 million in 2012-13. It is placed in the top 10 for student satisfaction, was named Sunday Times University of the Year 2012/13 and is ranked amongst the UK's top 10 universities in the Higher Education league tables.

UEMS has two research Institutes – the IHR and the Institute of Biomedical and Clinical Sciences (IBCS), which work closely together. The IHR includes our Primary Care Research Group on the St Luke's campus of the University of Exeter, the European Centre for Environment and Human Health (ECEHH), on the Truro campus (Cornwall), and our Health Services Research and Public Health Groups currently in the Veysey Building in Exeter.

b. Research strategy

In 2008 we submitted our first return to the RAE HSR panel and were rated 13th/24 returns, well above any of the other new medical schools. In that return we outlined ambitious plans to expand our activities in applied health research to become one of the leading medical schools in the sector, and noted our intention to develop a strongly funded centre for research in the environment and human health. We are making extremely good progress with these ambitions:

- Our research income has increased year-on-year from £3.1M in 2008/9 to £7.2M in 2012/13
- We have appointed 10 new Professors and 4 Senior Lecturers since 2008
- We obtained funding for the European Centre for Environment and Human Health
- We have published and disseminated our research widely, and made a difference (REF 3)

Our expansion of activities has been underpinned by our success in hosting International, National and regional research centres, including:

1. The European Centre for Environment and Human Health (ECEHH – leaders Fleming and Depledge): a £14.2M investment (from the European Regional Development Fund and the European Social Fund, plus £5.8M matched funding from the University). This is an interdisciplinary research centre studying the relationships between the environment and human health and wellbeing. ECEHH was set up in 2010, currently has 48 staff and 18 PhD students, and has recently obtained MRC-NERC grant funding in collaboration with the Met Office, the London School of Hygiene and Tropical Medicine, Public Health England and the University of Bristol.
2. The Peninsula Collaboration for Leadership in Applied Health Research and Care (PenCLAHRC) – Leader Logan): one of the first 9 National centres for translational research funded by NIHR. In 2013, with our partners we obtained a further investment of £10M for the next 5 years. Our work was highly commended by the funding panel.
3. Peninsula Technology Assessment Group (PenTAG – Leaders Stein and Hyde): one of the

small number of National Centres for Technology Assessment established with NIHR core funding in 2001 (funding was renewed for 2011-15 with £3.4M).
4. NIHR National School for Public Health Research (NSPHR – leaders Melzer and Abraham): this collaboration between 8 leading academic centres with excellence in applied public health was launched in 2012, with UEMS a core centre, receiving £1.6M.

Our particular strengths are in interdisciplinary methodological work and applied health research: research that reflects the needs of both health service providers and patients. Fundamental to this focus is our deep and long-lasting partnerships with local and regional NHS bodies, evident in numerous joint ventures, as well as excellent established relationships with charities, public bodies, local authorities and businesses. Our strong record of patient and public involvement in research is based on a collaborative, partnership model, rather than 'consultation'. Patients, educators, parents, carers, businesses and 'other publics' contribute to all stages of the research process.

UEMS Research Strategy and Themes:
UEMS has a documented research strategy for the period 2012-17, which will continue to concentrate on the core themes that PMS successfully pursued, and reflect National priorities:

- Diabetes, cardiovascular risk and aging
- Neurosciences and Mental Health
- The Environment and Human Health
- Health Services Research

Our research will continue to span basic through clinical science to clinical trials and the implementation of change. Our strategy is to make sure that the two research institutes – IHR and IBCS – work together on these core themes, so that we can move "through discovery to personalised care and healthy communities" and conversely from patient and policy issues to the generation of relevant basic research questions.
Collaboration is a core theme within the UEMS research strategy. Our strong track record of successful collaborative work with local service providers is evidenced by the success of our CLAHRC and the leading role played by UEMS researchers in the establishment of our Academic Health Science Network (AHSN). We are also working closely with other groups in the local community and with other university departments (see section e).

Core methodological skills:
In our 2008 RAE return we emphasised the need to invest further to develop our core methodological skills in applied health research. We have done this through the recruitment of new staff (see section e), and we now have strong methodological groups in Medical Statistics (Henley, Taylor, Ukuommune, Shields), Psychology applied to health (Abraham, Greaves, Smith), Health Economics (Green, Anderson, Medina-Lara, Spencer) to add to our previously existing expertise in Sociology and Qualitative methods (leader Britten), Systematic reviews and Meta-analysis (leaders Stein, Hyde), Epidemiology (leader Logan) and Clinical Trials (leader Taylor). We now have critical mass in each of the key methodological areas required in a first class applied health research unit. Methodological research within the IHR has been productive over the last 6 years, with notable outcomes that include: Britten's work on the synthesis of qualitative data and meta-ethnography, Henley's MRC funded work on hidden confounding in epidemiological studies, Taylor's work on surrogate outcome measures in trials, the MRC supported work of Britten and Gibson on methodological developments in PPI, and the work of the complexity group (Wyatt and Durie) on developing methods to enable communities to work with their service providers to reduce health inequalities and improve their social environments.

'Research engagement by Design' and Partnership Building:
IHR's research strategy is based on IHR/PenCLAHRC's 'engagement by design' concept, which involves building partnerships between members of the public, patients, NHS clinicians and managers, policy makers and academics to identify key research and implementation topics. Their views are used to make sure that our research meets the needs of key stakeholders. A particular feature of this strategy is its concentration on implementation as much as on evidence; we

endeavour to make sure that good research is translated into better practice. Examples include:

- Logan's work to implement the use of tranexamic acid by paramedics attending the site of trauma (2010/11 see http://clahrc-peninsula.nihr.ac.uk/project/37-txa-in-trauma/full.php)
- Stein and Monk's work with the local NHS stroke network to improve patient selection for, and the speed of administration of thrombolysis (2010/11, Hospital data available)

This basic philosophy extends into our work with communities and in the environment, where we engage with key stakeholders as partners, rather than in a purely consultative style. This is exemplified by Wyatt's NIHR funded work with schools, where an intervention to reduce obesity was developed in conjunction with children, teachers and parents (e.g. the HeLP trial, see section e). Our successful patient and public partnership group ('PenPIG', developed by Britten) has helped shape research on many topics. This includes our RfPB funded trial of a pre-clinic agenda form for use in diabetes clinics (as suggested by patients), with service users as co-applicants.

IHR Research Groups:
UEMS does not have a traditional departmental structure. The people included in this REF return are part of the UEMS IHR, which has three broad, overlapping sections: HSR, Public Health and Primary Care.
HSR comprises a wide portfolio of research that includes basic methodological work (particularly in medical statistics, economic modelling, ethnographic research and patient/public involvement), as well as applied research concentrated on four main themes that are consistent with UEMS research priorities: mental health, diagnostics and stratified medicine, person centred care and high quality evidence provision.
Public Health is a major part of the work of the ECEHH, as well as being undertaken in PenTAG, and the NSPHR. One of our strengths is our work on screening for and surveillance of disease. Another special feature is our emphasis on environmental issues and health. In addition, we have a major interest in working with schools and disadvantaged communities to improve health and reduce health inequalities. The Exeter part of the NSPHR focuses on: the design and evaluation of health behaviour interventions, innovative approaches to the promotion of healthy lifestyles, understanding the relationship between environment and health (aided by links to the ECEHH), and reducing morbidity and disability in later life.
The ***Primary Care*** group works closely with HSR and Public Health. It undertakes research in three focused areas: 1) access to and quality of primary care, 2) trials of complex interventions in primary care settings, and 3) the assessment of cardiovascular risk and its mitigation. The group has produced excellent outputs in each area during the assessment period, in part through its strong local, National and International collaborations. Examples include work on exercise and health with the Sports and Exercise Department, and work with the DoH, GMC and UK primary care networks on patient access and feedback.

The rationale for this grouping relates to professional career paths, training and trainees (the different training programmes for primary care and public health doctors for example), and responsiveness to funding opportunities (such as the National School for Public Health). In practice, staff throughout both IHR and IBCS collaborate closely and work on both methodological and applied issues, while maintaining a focus on the main research priorities of the School. Research outputs in our priority contextual areas, published by IHR staff in the assessment period which achieved International recognition include:

- Campbell's work on inter-arm differences in blood pressure (Lancet 2012)
- Dickens' work on depression, multi-morbidity and cardiovascular risk (Ann Intern Med 2008)
- Richards' work on the management of depression (BMJ 2013)
- Stein's work on screening for diabetic retinopathy (Diabetes Care 2012)
- Taylor's work on salt intake and hypertension (Am J Hypertension 2011)

c. People:

Staffing strategy and staff development:
Our success in developing effective health research within PMS was initially dependent on the recruitment of a small number of International research leaders to Exeter (Britten, Campbell, Logan, Stein and Taylor). Over recent years we have recruited a new, larger group of senior, established HSR/public health/primary care research leaders appointed at professorial level: Abraham (2011), Dickens (2010), Dieppe (2009), Fleming (2010), Hamilton (2010) Hyde (2009), McCabe (2013), Purandare (2010, died 2011), Richards D (2008) and Valderas (2013). These appointments have been made in light of the strategy outlined above, these people adding strength to existing expertise in HSR (Dieppe, Hamilton, McCabe), public health (Hyde, Fleming) or primary care (Valderas), bringing us extra expertise in methodology, (psychology applied to health Abraham), or particular contextual strengths (mental health: Dickens, Purandare, Richards D). New appointments have also been made at lecturer and senior lecturer level to help develop methodological expertise (health economics – Medina-Lara and Spencer, statistics – Ukoumunne, health psychology - Smith). The result has been a huge expansion in academic and research staff numbers within IHR, rising from 43.8 FTEs in 2008 to 122.0 FTEs in 2013.
The IHR has helped develop the careers of a number of rising stars in the discipline, including Anderson, Ford, Gibson, Garside, Green, Greaves, Henley, Llewellyn, Owens, Phoenix, Wheeler, and Wyatt. On the basis of their research achievements Anderson, Ford, Green, Henley and Wyatt have been promoted to professorial level during the assessment period. Gibson has established himself as a National expert in patient and public involvement, Greaves has obtained an NIHR career development fellowship (2013-17) to continue his work on weight loss in diabetes, Wheeler has an ESRC grant to work on healthy environments, Llewellyn has been awarded a Prize from the Alzheimer's association as well as a University of Exeter Bright Futures award for his work on vitamin D and dementia, Owens has done ground-breaking work on suicide (see impact case study), and Garside and Phoenix have been appointed to the ECEHH to enhance research there.
Our ability to recruit and support good research staff, and help their career development, depends in part on the formal processes outlined in the next paragraph. It is also facilitated by the culture of collaboration and partnership that underlies our research strategy (above) and pervades the way in which we work. Another indicator of this success is our very low staff turnover. In spite of the disaggregation of PMS and other major changes, senior staff retention in IHR since 2008 has been excellent (79.6% of IHR teaching and research staff retained during the REF assessment period).
Staff development has progressed significantly since 2008. The University of Exeter's HR group have always worked according to the Concordat in terms of policy and practice for staff recruitment and development, staff have always been allocated a senior line manager to advise them, and there has always been a robust annual staff review process within IHR, which sets targets with staff and outlines what further training or leaning opportunities might help them. Since 2008 we have also introduced compulsory diversity and equality training for all staff (in keeping with the Concordat), and through annual review, made extra efforts to ensure that staff are valued and given the opportunity to gain new generic and specific skills to help career development. This has been facilitated by the training and support programmes at the University of Exeter. We are now starting to initiate a process of 360 degree review, initially for senior professorial staff, in UEMS.
As soon as UEMS was formed (2012) we started work on the Athena Swan initiative. We gained a bronze award in 2013, and the report encouraged us to apply for a silver award. We are now demonstrating our working practices, incorporating an extensive staff consultation process, which should lead to the silver award.
We work closely with NHS employed colleagues many of whom have a strong research record. The primary care research group has worked with many academic GPs locally. Examples are collaborative work with Clarke on blood pressure differentials between arms, and Dalal, showing that cardiac rehabilitation can be successfully carried out at home. Local Authority employed Lang works on public health and has been an important collaborator on many of our projects, including our work on bisphenol-A in the environment (JAMA 2008).
Not all of the IHR staff returned in REF 2014 are in this return. Because of the diversity of our interests and activities, and in particular the environmental emphasis of the ECEHH, in addition to the 25 staff returned here (UoA 2), we are returning staff in UoA 4 (Abraham, Zeman), UoA 7 (Depledge, Gaze, Fleming and Vos), and UoA 25 (Mattick).
Research students:

PhD students are critical to the vibrancy and success of a strong research community, and we are putting increasing emphasis on the recruitment, education, support and development of our PhD students. Overall, UEMS graduated 54 PhD students in the assessment period, a 48% increase on the figures quoted in our 2008 return. The PMS Graduate School developed an outstanding record in the training of doctoral students, with successful completion rates consistently above 70% at 4 years. UEMS is committed to maintaining this success and to increasing the numbers of PhD students in IHR. However, the demerger of PMS in 2012 led to many of our jointly supervised PhD students being returned by Plymouth, making recent figures look inappropriately low.
Our major core-funded research groups (PenCLAHRC, PenTAG and ECEHH) are now all supporting a large number of PhD students, and others are funded by NIHR, MRC or medical charities. In addition UEMS has just appointed a further 6 new PhD studentships in 2013, of which 3 were awarded to PIs in IHR and 3 to IBCS. Currently we have 44 registered PhD students. Subjects that they are studying range from methodological issues such as the economic assessment of quality of life, to unusual applied topics such as the value of therapeutic knitting; a range which is indicative of the breadth of our research interests and activities.
Prospective PhD projects and candidates are rigorously reviewed by our Graduate Degrees Committee, which also ensures good student supervision through regular reporting mechanisms, the use of a structured log book to monitor their supervision, and a formal mid-term upgrade presentation and viva. We have an annual residential research event. This is free of charge to students, who give a 10 minute presentation and discuss their projects with a large group of senior members of staff. PhD students and junior research staff are encouraged to attend training courses, as well as seminars within the IHR and elsewhere in the region. Generic skills training is facilitated by the University of Exeter, which is recognised as having a good support system (see: http://as.exeter.ac.uk/support/development/researchstudents/).
We have an annual away-day for all IHR staff and research students and regular seminars which research students are encouraged to attend. There are several journal clubs, study groups and training days run for research students by staff members with a particular interest in a specific methodological approach or contextual area of expertise. An example is a recent programme of training on realist reviews and methodologies run by Anderson and Pearson. The wellbeing of PhD students is further enhanced by the open plan coffee areas available in the Veysey Building in Exeter and the Knowledge Spa in Truro (ECEHH) which encourages informal discussions and mixing of students and staff.
Students who obtained their PhDs in the assessment period, and are now successful within our locality include: Clarke, a leader of primary care research, Denford, an RA in our health psychology team, Garside, a senior lecturer in ECEHH; Goodwin, working in our CLAHRC, Lloyd, running one of our trials (HeLP), and Wingham, a co-applicant on a successful NIHR programme grant.

The future:
UEMS is committed to further major expansions of senior research staff and research students. Funding has been set aside for the appointment of more professors and other academic staff, including posts to support the expansion of our clinical trials work (see section e), and others to continue capacity development in underpinning methodology, as well as contextual priorities.

d. Income, infrastructure and facilities

The new research income resulting from the establishment of the ECEHH and National School of Public health Research (in 2010 and 2012 respectively), and the PenTAG and PenCLAHRC renewals (in 2010 and 2013 respectively) have been pivotal to our growth and success.
In addition our overall grant-related research income has risen dramatically during the assessment period, from a total of £3.1M in 2008/9 to £7.2M in the 2012/3 financial year, and the sources of our grant funding have diversified (see REF4). NIHR provides the largest amount, but we have also obtained significant amounts of money from MRC, ESRC, the EU and medical charities.
As part of our staff review process, targets for income and discussions about grant applications and submissions are prominent. The writing and submission of grants are regularly discussed at our annual away day, facilitated by the many senior IHR staff who sit on National research boards. As a result of these discussions we are developing a 'buddying' system to allow the more junior researchers to gain help and advice about their grant submissions from senior professors. This complements the formal pre-submission grant review system run at group and Institute level and is

helping us to realise UEMS's ambition of continuing to increase grant income.
Our research strategy recognises that in order to remain a leading UK research medical school UEMS needs to increase its capacity and facilities to accommodate the new staff and grants. This is supported by the University of Exeter, which has made significant investment in its infrastructure over the last few years (with an investment in new buildings of over £250M), including major development programmes to support health related research.
A new extension to the Knowledge spa in Truro provided purpose built office and clinical facilities for the ECEHH in 2010, and a major refurbishment of the Veysey building in Exeter was completed in 2011 to house the expanding IHSR of PMS (now IHR of UEMS). The new Wellcome Wolfson Medical Research Centre built on the Royal Devon and Exeter Hospital site, at a cost of £27.5M will open in Dec 2013 and house genetics and epigenetics teams as well as those undertaking experimental medicine. This new build includes more seminar rooms, staff offices and a Postgraduate Centre for use by research staff of IHR as well as IBCS, and will facilitate their collaboration. The nearby University of Exeter St Luke's site is being extensively refurbished (with a commitment of £12.6M from the University) so that all those working in the IHR can be accommodated on the same site (already being used by most primary care and some HSR staff). From 2015 this site will also be the main administrative hub for UEMS.
On the University's Streatham campus new animal research facilities have been built: the Hatherly laboratories will accommodate basic neuroscience and systems medicine. Systems medicine will be incorporated into a new Living Systems building, a £50M investment due to be completed in 2016.
We continue to work closely with colleagues in Plymouth, providing an overarching framework for collaboration between the region's academic institutions and health service providers. While academics are typically concentrated into academic establishments, clinicians and patients are generally dispersed more widely. There is thus a need for networks to bring geographically remote groups and individuals together to facilitate research on particular conditions. The Peninsula region has hosted research networks in each of the disease and treatment areas established by NIHR – diabetes, medicines for children, dementias and neurodegenerative diseases, stroke, mental health and cancer. It also organises the South West Primary Care Research Network, one of eight such networks in England and Wales, which is led by our Primary Care Group (Campbell, Evans et al), providing an infrastructure for clinical research in primary care.
The Wonford (Royal Devon and Exeter) Hospital houses the Peninsula NIHR clinical research facility. This opened in 2007, and funding was renewed in 2012 with an award of a further £5.4M. One of the centres' major projects is a campaign to recruit 10,000 people from the Exeter area ('EXTEND') to provide information about healthy lifestyles, diet and exercise, and provide volunteers for projects on population health. Recruitment has gone well, we expect to complete recruitment of the full 10,000 soon, and will be able to use the cohort for genotyping in the future. The cohort is currently being used by staff of IHR, such as Britten and Dieppe's project on the modern implementation of the healthy lifestyle advice given by the Greek physician Galen.

e. Collaboration or contribution to the discipline or research base

Our research portfolio is broader than that of many HSR, public health and primary care research groups. In addition to extensive contributions to trials, evidence synthesis, meta-analysis and economic modelling, to inform health purchasers and providers, we work very closely with a variety of different organisations. These include government agencies, schools, charities, businesses and communities. The model is one of partnership building rather than consultation, and of recognising the complexity inherent in such organisations. Our work extends beyond health care contexts to communities, general health and wellbeing and the importance of the environment. We are committed to facilitating the improvement of the health of all groups we work with, and to investigating the importance and preservation of their environments. This requires the support of a wide range of methodological approaches and we are committed to building strength in implementation science, operational research modelling and the use of realist approaches, as well as the more traditional methodologies. Our approach also means that the range and diversity of our collaborations and interactions are unusually large and diverse.

Interdisciplinarity and local collaborations
Our strong links to local healthcare commissioners and providers, the development of our AHSN,

and the critical role of PenCLAHRC to our work have been mentioned. Many of our other local collaborations reflect the extent to which we work in a genuinely interdisciplinary way. Within the University of Exeter we have particularly strong research collaborations with the Mood Disorders Centre (Kuyken, Watkins), the Sports and Exercise Group (Hillsden, Taylor), the Business School and Economics Department (Medina-Lara and Spencer are involved in a bid for a £4M ESRC funded research centre for research on risk and ambiguity), the Medical History Unit (Dieppe and others collaborate with Jackson, a Wellcome Trust Senior Investigator), Drama (Goldingay works with the complexity group and on health and wellbeing), The Graduate School of Education (Ford's trials of teacher-focussed, school-based mental health interventions), Maths, Geography and Biology on modelling complex interventions (Wyatt) and Classics (Britten and Dieppe's work on Galenic principles of health and wellbeing). Local academic collaborations have been facilitated by several of the Exeter Science Exchange 'Bridging the Gaps' awards, funded by EPSRC and administered by the University of Exeter (awards made to Britten, Dieppe, Wyatt and several of the ECEHH staff). More recently collaborations have been developed with the University of Exeter's Humanities and Social Sciences Research strategy (http://www.exeter.ac.uk/research/inspiring/keythemes/hass/) which includes themes on Medical Humanities and Social and Lifestyle Shifts.
Many of our trials are carried out in conjunction with local organisations such as schools or communities (e.g. HeLP and STARS, see below) In addition, our complexity group works with wider communities to reduce health inequalities and improve public health, for example the Redruth North Partnership and the Townstall Community Partnership were both developed and supported by the Health Complexity Group (Wyatt and Durie). The work of these partnerships has been recognised locally and nationally.

Working with charities and businesses:
UEMS has a strategic partnership with 'Quintiles Inc', one of the world's leading contract research organisations, and we recently became the second UK Quintiles prime site. We have been working with other local businesses, such as Ginsters, to understand how they developed their Active Workplace programme, in order to develop a healthy workplace programme within local NHS Trusts. We have strong links to several medical charities, including AgeUK (Lang), Arthritis Research UK (Dieppe), Cancer Research UK and Macmillan (Hamilton), and Charities focusing on childhood disability: Cerebra, Downs Syndrome Association and Face-to-Face (Logan, Morris). In addition we work with local dance and sports groups (such as the Exeter Chiefs) to support children adopting healthy lifestyles, and we have strong links with the Eden project, who were part of our successful 'Catalyst' funding bid.

Contributions to UK government and health organisations:
Our primary care group has worked closely with the *GMC* on the development of means of assessment of doctors, providing the evidence base for the methods being used in revalidation. Several of our staff have worked closely with the *Department of Health* on a number of projects, including Campbell's work on patient feedback in primary care, Hamilton's work on early diagnosis of cancer, Dieppe's work on joint replacement, and Logan who Chairs the HQIP (Healthcare quality improvement partnership) Independent Advisory board (Childhood). Richards D was an advisor to the DoH on psychological therapies 2008-11. We have particularly strong links with the *NIHR*: PenTAG works closely with HS&DR and HTA with several of us serving on NIHR committees or boards: Logan has chaired the Southwest RfPB board and was a member of the HTA Commissioning Board, Dieppe chaired one of the sub-committees of the Programme Grant stream (2008-12), Stein chairs the editorial board of the HTA, Campbell is a member of the HS&DR Board, Thornton chaired the speciality group for maternity and reproductive health, Taylor works for several of the National NIHR research boards, and Britten, Garside, Green Dickens and Taylor are all members of the local RfPB board. PenTAG, in particular, does a lot of work with *NICE*: Stein is Vice-Chair of the NICE Appraisal Committee, Hamilton is clinical lead on the NICE guidance for investigation of possible cancers, Logan sits on the Evidence Accreditation Board and Hyde on the Diagnostic Technology Committee. Thornton sat on the *MRC* PSMB board, and chaired the clinical

study group for preterm birth.

Contributions to evidence and the International Evidence-Based Medicine movement:
Since 2008 we have made major contributions to the International EBM movement through primary trials, as well as large numbers of evidence reviews, meta-analysis and economic analyses carried out in IHR. In addition, Logan, Anderson, Dieppe and others have taught aspects of EBM in many countries including India, Australia, the Netherlands and South Africa. We have also made methodological contributions, on issues such as surrogate outcomes in trials, modelling and economic analysis.
Over 50% of the publications submitted in REF2 contribute directly to Evidence Based Healthcare. The 89 publications reported include: 15 HTA Monographs, 14 randomised controlled trials, 8 systematic reviews and meta-analyses, and 7 Cochrane reviews. 21 of our returned publications are published in one of the highest impact general journals (Lancet, BMJ, JAMA, Ann Intern Med). Papers submitted by Anderson, Ukoumunne and Campbell have been awarded prizes.

As part of our on-going primary research in the area, we lead on several on-going large multi-centre trials, that involve extensive collaborations, including:

- 'ESTEEM' A cluster randomised trial of telephone triage of patients requesting same-day consultations in general practice (Campbell, Green, Warren, Taylor, Richards D and Richards S, NIHR funding £2.2M)
- 'REACH HF' NIHR programme grant on developing and evaluating home based rehabilitation manual for health failure (Taylor, Dalal, Campbell et al £1.9M)
- 'COBRA': An HTA funded trial comparing behavioural activation with cognitive behavioural therapy for depression (Richards, Abraham, Britten, Greaves and Green in collaboration with the Exeter Mood Disorders Centre and others £1.9M)
- 'STARS': 'Supporting Teachers and Children in Schools, an RCT designed to see if a particular teacher training programme can help with disruptive behaviour of pupils in schools (Ford et al, funded from £1.7M)
- 'HeLP': An NIHR funded cluster randomised trial using a drama based intervention to reduce obesity amongst school children (Wyatt, Taylor et al £1.4M)
- CADENCE: An NIHR HTA funded feasibility study and pilot RCT in cardiac rehabilitation services (Campbell, Taylor et al, £515K)

Other markers of National and International research excellence:
Two of our new professorial recruits have obtained NIHR senior investigator awards since coming to Exeter (Dieppe 2009, renewed 2012, Richards D 2012), and Hamilton's work on cancer diagnostics was shortlisted for the 2012 NHS innovation prize.
As expected in a leading medical research institution many of our senior staff are recognised leaders in their fields and have been invited to give plenary lectures on their subjects at National and International Meetings during the assessment period, including: Anderson (economic evaluation), Britten (drug use and ethnographic methods), Campbell (assessment of doctors and patient feedback), Dickens (depression and multi-morbidity), Dieppe (osteoarthritis, joint replacement and complex interventions), Hamilton (cancer diagnostics) Hyde (diagnostic technologies), Logan (trials of complex interventions in children), Richards D (depression management) and Valderas (HSR in primary care). Dieppe was given the lifetime achievement award of the Osteoarthritis Research Society International (2010) and made a Fellow of the American College of Rheumatology (2011)
All returned staff undertake reviews for journals and research boards, and many of us serve on editorial boards. Logan is editor of the journal Child Care Health and Development, Ford is lead editor of Child and Adolescent Mental Health and Stein is associate editor of the Journal for Technology Assessment in Health Care.

Conclusion:
PMS was formed in 2000 and UEMS in 2012. Since our first return to the panel in RAE 2008 we have grown enormously. We are on a strong upward trajectory that can take us to a deserved position amongst the top units in the UK.