Council of Deans of Health

High performing research environments in nursing, midwifery and allied health professions

Analysis of the Research Excellence Framework (REF) 2014 for nursing, midwifery and allied health professions

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Contents

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1.   Executive summary

A vibrant, sustained research culture and environment is central to nurses, midwives and allied health researchers' ability to conduct research that has a positive impact on outcomes for people experiencing health and social care. Drawing primarily upon a detailed analysis of selected environment templates submitted to the Research Excellence Framework (REF) REF2014 as part of the nursing, midwifery and allied health professions' submissions to Unit of Assessment 3, this report outlines key characteristics of high performing research environments (HPRUs) in nursing, midwifery and allied health professions.

Research environment templates rated as world leading (4*) or internationally excellent (3*) at REF 2014, and those higher education institutions (HEIs) whose submissions achieved 100 per cent 4* or 3* ratings were included in the analysis. Nine environment templates were identified, of which five met the selection criterion. These five environment templates were analysed thematically to identify some of the key characteristics of HPRUs.

High performing research units (HPRUs) in nursing, midwifery and allied health professions have robust staffing strategies embraced by all researchers and focussed on recruiting and retaining high-quality staff. They encourage researchers to initiate research collaborations organically, establish a variety of staff training opportunities, invest in a physical infrastructure that enables researchers to undertake multi-facetted research activities, and use Clinical Academic Fellowship programmes to build research capacity. HPRUs also foster/extend partnerships with key stakeholders including clinicians, patients and industry, develop postgraduate research (PGR) students and future research leaders, and build national and international partnerships and collaborative projects. They implement the Concordat to Support the Career Development of Researchers with particular emphasis on supporting women and black and minority ethnic (BAME) researchers, and establish processes that allow researchers to review successful as well as rejected bids for external research grants, for instance through an internal peer review system.

2.   Introduction

Research undertaken by nurses, midwives and allied health professionals (AHPs) has a positive impact on outcomes for people experiencing health and social care. Research submitted towards REF 2014 demonstrated the significant contributions made by researchers in these subjects that have resulted in improved patient outcomes; better awareness of and access to services; as well as economic benefits to the individual, the National Health Service (NHS) and the economy[1].

The development of HPRUs within these professions is therefore vital in maintaining, and growing the academy, enhancing capacity and building on the impact of research within these professions. In this report, we examine the characteristics associated with HPRUs for nursing, midwifery and the allied health professions as demonstrated within the environment templates submitted to REF 2014.

Our aim is to provide an overview of some of the key characteristics within nursing, midwifery and the allied health professions as evidenced at REF 2014. Our intention is to provoke discussion and debate within the professions surrounding the research environment, helping members to prepare for subsequent REF assessments. We intend to build our research within this area with case studies and examples of good practice and invite members to engage with us in this.

In this report, we first outline some of the key achievements of nursing, midwifery and AHP researchers identified in REF 2014. We then provide an overview of the REF process, with an emphasis on the assessment of the research environment. After outlining our methodology, we present our initial findings in relation to the nursing, midwifery and allied health environment templates submitted towards REF 2014.

2.1. Nursing, midwifery and allied health professional research

Research undertaken by nurses, midwives and AHPs benefits the economy and society, for example through preventing ill health, enabling better management of long-term conditions, and helping recovery and return to work following illness. The research of our members has helped to transform care across the life course. It has improved pregnancy outcomes for women with diabetes and had a significant impact on the care of older people, including the measurement and management of pain, and has contributed towards older people falling less. Advancements have also been made in the planning of end-of-life care and the delivery of specialist palliative care services. Research has been instrumental in reducing the number of patients experiencing pressure ulcers following surgery, and helping to improve the lives of those living with chronic wounds. It has resulted in safe access to medication for millions of people provided by specially trained nurses, midwives and physiotherapists.

Important contributions have been made towards recovery and return to employment following cancer, strokes and mental health problems. Research has exposed the issues experienced by cancer survivors and helped to improve their wellbeing. The introduction of stroke-specific self-management programmes has changed practice among stroke practitioners towards more person-centered and self-management approaches.

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[1] Care Transformed: The impact of nursing, midwifery and allied health professional research (https://councilofdeans.org.uk/wp-content/uploads/2014/12/Care-Transformed-web-version-1.pdf)

Research has contributed towards improving outcomes for children and young people. For instance, advancements in relation to the development of speech and language therapy services for vulnerable young people in contact with the criminal justice services has helped tackle re-offending rates. Research has exposed the long-term consequences relating to early language delays and adult outcomes, leading to the development of well evaluated interventions.

Research from our professions has contributed towards improving the nation's heart health, developing our understanding of dietary cholesterol and the health risks of trans fatty acids. This has had a significant impact on national and international dietary guidelines and public perception of cholesterol control, and influenced policy decisions made by the Food Standards Agency.

It has also had an impact on the outcomes for patients living with long-term conditions such as Chronic Fatigue Syndrome (CFS)/Myalgic Encephalopathy (ME), and influenced National Institute for Health and Clinical Excellence (NICE) guidelines for CFS/ME. Similarly, practice improvements have been developed by researchers examining self-management strategies for people with multiple sclerosis (MS), that have informed National Collaborating Centre for Chronic Conditions guidelines. Researchers in orthotics have made significant contributions towards advancements in the design and manufacturing of ankle-foot and foot orthoses and pioneered new work designed to enhance the walking capability and quality of life of people with gait abnormalities associated with "dropped foot".

Research by our members has also revolutionised the treatment of people with common mental health problems such as depression and anxiety. The revolution in treatment for these people in England – the Improving Access to Psychological Therapies (IAPT) programme – was underpinned by work on low-intensity psychological therapies undertaken by nurse researchers. More recently, new and simpler forms of treatment for depression developed by nursing research teams have been incorporated into NICE guidelines, giving greater choice for patients.

Despite these examples of high-quality research, it is important that we do not become complacent about the challenges around sustaining and growing the research base. There are still too few nurses, midwives and AHPs carrying out rigorous and high-quality research. It is therefore critical that we identify means through which we can grow capacity within our universities and across the NHS to foster a vigorous and sustainable research environment.

2.2. REF 2014 and the assessment of the research environment

REF 2014 applied a single framework of assessment across all academic disciplines to assess the quality of research in HEIs in the United Kingdom (UK).

Discipline-based expert sub-panels assessed the quality of each HEI's submission across 36 units of assessment (UoAs) within four main panels (A-D). In this report, we examine a sub-profile of the environment templates submitted under UoA 3: Allied Health Professions, Dentistry, Nursing and Pharmacy. As UoA 3 contains submissions from dentistry and pharmacy, we have focussed our analysis on those environment templates that relate specifically to nursing, midwifery and the allied health professions. This allows us to report more accurately on the characteristics of HPRUs associated with the

professions represented by the Council's membership, rather than conflating these with those of the wider UoA[2].

Each research unit's submission was assessed in terms of three weighted elements:

- Outputs (65 per cent): including the quality of research outputs in terms of their 'originality, significance and rigor'.
- Impact (20 per cent): including the 'reach and significance' of impact on the economy, society and/or culture that were underpinned by excellent research.
- Environment (15 per cent): focussing on the 'vitality and sustainability' of the research environment, including its contribution to the wider discipline or research base.

Each element of the submission, as well as the overall submission, was awarded a star rating:

- 4 star: world leading
- 3 star: internationally excellent
- 2 star: recognised internationally
- 1 star: recognised nationally

2.3. The environment template

Within REF 2014, environment was defined as, 'the strategy, resources and infrastructure that support research'. Each submission included:

- Statistical data: including research income for each academic year (2008-09 to 2012-13) from different sources, as well as the number of research doctoral degrees awarded in each academic year within the assessment period.
- Environment template: describing the submitted unit's research strategy; its support for research staff and students; its research income, infrastructure and facilities; and its research collaborations and wider contributions to the discipline.

The assessment of the research environment within Main Panel A was on the basis that excellent research could be undertaken in a wide variety of research structures and environments. The main panel held no preformed view with regards to the ideal size or organisational structure of a world-leading or internationally excellent research environment.

Sub-panels examining the environment templates assessed the 'vitality and sustainability' of each submitting unit. Submissions within the environment element of REF could pertain to departments/research groups or units which may or may not be cognate, providing an opportunity for HEIs to demonstrate how enhanced multi- and/or interdisciplinary research is encouraged. Therefore, submissions could refer to a single group which may or may not relate to a single coherent organisational unit.

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[2] In the Research Assessment Exercise RAE (2008), 'Nursing and Midwifery', 'Allied Health Professions', 'Dentistry', and 'Pharmacy' were each submitted under separate units of assessment (UoA 10, 11, 12 and 13).

The environment template is broken down into four main sections:

Overview: Submitting units were requested to provide a description of the organisation and structure of the unit, including the research groups or units covered in the submission and how the research is structured.

Research strategy: Submitting units were requested to provide evidence of the achievement of the strategic aims of research during the assessment period, as well as details of future strategic aims and goals for research.

Submitting units were also encouraged to provide a range of evidence and indicators including: any significant changes to the research environment; strong research plans including capacity building, the involvement of service users and the development of infrastructure to facilitate research; responsiveness to national and international priorities and initiatives; and mechanisms for promoting research and sustaining and developing an active research culture.

People: This section of the environment template was further broken down into two sections: staffing strategy and staff development; and research students.

Within the staffing strategy and staff development section, submitting units could provide a range of evidence, including: the ways in which the staffing strategy was linked to the research unit's strategy, the integration of clinical academics and NHS-employed active researchers; support for early career researchers (ECRs) and the research career development of both non-clinical and clinical researchers.

With regards to research students, submitting units were encouraged to provide evidence of the training and supervision of PGR students including: evidence of effective and sustainable doctoral training; evidence of a strong and integrated research student culture; and evidence of Council for Advancement and Support of Education (CASE) awards and the application of technology generated by research students.

Income, infrastructure and facilities: Submitting units were encouraged to provide information about research income, infrastructure and facilities including: any significant equipment and research facilities, cross-HEI or shared collaborative use of research infrastructure; and policy and practice in relation to research governance.

Collaboration and contribution to the discipline: Submitting units were requested to provide evidence of their contribution towards the wider research base, including their work with other researchers outside the submitted unit and the support for research collaboration. Examples of evidence and indicators that could be submitted included: participation in the peer-review process; fellowships; journal editorships; academic collaboration; and collaboration or integration with external bodies including NHS Research and Development.

2.4. Assessing the research environment

In 2015, researchers from King's College London conducted an analysis of the features associated with HPRUs[3]. Conducted across all disciplines, this research used the results of the REF 2014 as a proxy for high performance, focussing on the top 1.5 per cent of submissions. Using quantitative data analysis of the REF results alongside interviews and workshops with individuals working within the research units, the research identified key characteristics of HPRUs.

Characteristics that were deemed essential to the performance of research units included the people employed or working within those environments, as well as the research culture and underlying values and leadership of each research unit. For instance, HPRUs had a greater volume of PhD-educated staff with international experience and externally funded salaries. Staffing strategies were focussed on recruiting and retaining high quality staff. This meant not only recruiting those with strong research profiles, but also identifying rising stars and the research leaders of the future.

The research also identified several enabling factors characteristic of HPRUs. For instance, the research strategies of HPRUs were described as 'real, lived and owned', with leaders that have earned accountability within their universities. HPRUs encouraged their researchers to initiate collaborations organically, as opposed to using a top-down approach, and received more income per researcher than the average research unit. Other enabling characteristics included mentorship programmes, seen as being crucial to generate new research ideas; staff training, including grant application training; and strong performance rewards or incentives.

3.   Methodology

Desktop research was undertaken to identify environment templates that referred specifically to research undertaken within nursing, midwifery and the allied health professions. As the research sought to identify the factors associated with research environments that were rated as world leading (4*) or internationally excellent (3*) at REF 2014, only those HEIs whose submissions achieved 100 per cent 4* or 3* ratings were included in the analysis.

A total of nine environment templates referring specifically to nursing, midwifery and the allied health professions were identified, of which five met the selection criterion. These five remaining environment templates were analysed thematically to identify some of the key characteristics of HPRUs.

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[3] Manville, C., Hinrichs, S., Parks, S., Kamenetzky, A., Gunashekar, S., Wilkinson, B., and Grant, J. (2015) Characteristics of high-performing research environments A preliminary analysis. London: Higher Education Funding Council for England.

4.   Findings

4.1. Strategy

The research strategies of HPRUs reflected the overall HEI strategy or corporate plan, although there was significant variation in terms of the structure and content of the strategies of HPRUs. The strategic aims and objectives of HPRUs often highlighted the interrelationship between the academy, health care policy and health care practice.

HPRUs emphasised their increased research grant funding and spend, interdisciplinary research and impact through wider collaborations and the ways in which these reinforced both the research unit and the HEI's strategic objectives. These issues are explored further in sections 3.3 and 3.4.

HPRUs reported that their research was grouped around thematic clusters. Research-active staff were typically assigned to clusters reflecting their academic and research profiles. Broadly summarised, some of the overarching objectives of research units submitted within nursing, midwifery and the allied health professions included:

- Improving the lives of patients, making a positive impact on the health and wellbeing of individuals and populations.
- Improving the effectiveness of health services, including service users' experience of healthcare.
- Providing world-leading and innovative education and research, contributing towards practice and helping to inform health care policies.
- Demonstrating a dynamic culture and environment, helping to generate impact from the dissemination of research and developing the next generation of researchers.

Examples of general strategic areas evidenced by HPRUs include:

- Capacity building via Clinical Academic Fellowship programmes.
- Developing partnerships with key stakeholders including clinicians and patients to strengthen research, and extend engagement with industry to address clinical problems.
- Increasing grant funding and research spend.
- Developing PGR students and future research leaders.
- Innovation in education, training and engagement and being at the centre of research and development.
- Building local Collaborations for Leadership in Applied Health Research and Care (CLAHRCs).
- Building national and international partnerships and collaborative projects, as well as international recognition in knowledge generation, translation and implementation.

4.2. People

HPRUs had staffing strategies that recognised the importance of building capacity through staff recruitment and retention as well as developing future research leaders. The staffing strategies of HPRUs centered around the recruitment of senior academics with strong research profiles, whilst many also reported schemes to allow existing staff to develop into more senior roles. Staff were provided with individual development plans incorporating challenging but achievable goals, and received appraisals at least once a year. HPRUs cited the use of workload allocation models to balance the demands of

teaching, research and administration. With regards to ECRs and contract research staff, HPRUs stated their commitment to the implementation of the Concordat to Support the Career Development of Researchers and the European Council HR Excellence Research Awards as evidence of support structures for staff and students.

In the following sections, we explore in more detail the ways in which HPRUs evidence their recruitment activities and provided support and training for staff, ECRs, contract researchers and PGR students.

4.2.1. Staff recruitment and retention

HPRUs' staffing strategies placed emphasis on their evidence of recruitment at senior levels (e.g. professorial) as well as development of existing staff into those roles. Within the environment templates, HPRUs highlighted the number of external appointments made to professor, reader and senior lecturer positions, with internationally acknowledged professors referenced by name. Internal promotions which recognised excellence in research, teaching and university academic service were also cited, particularly where staff had progressed to reader or chair positions. Recruitment and promotion were therefore seen as an important means through which HPRUs could achieve critical mass within thematic research groups, as well as enhance interdisciplinarity.

HPRUs also recognised the importance of rising stars and there was evidence of direct recruitment of graduates who were close to completing their doctoral research as contract research staff. Existing staff were actively encouraged to engage in mentoring schemes intended to help contract research staff develop into ECRs.

HPRUs provided evidence of induction programmes to support new appointees which operated at two distinct levels. HPRUs ensured that core provision was provided at a university level however, local inductions specific to the individual's role were also run.

4.2.2. Staff training and career development

There was an array of different mechanisms evidenced by HPRUs in relation to the professional development of staff including structured support to assist promotions, mentoring schemes and other training opportunities.

Research units provided evidence of their activities to enhance professional career development. This involved generic and bespoke training opportunities including:

- Generic research methods training including data analysis.
- Journal Clubs and schemes to help develop transferable and research specific skills such as writing for publication, research governance and conduct and conference presentation skills, aimed at increasing the confidence of researchers.
- Training to support successful research grant applications, including pre-award and post-award support.
- Workshops, seminars and evidence updates including debates around recent advances and feedback on protocols.
- Protected writing weeks.
- Seed-corn funding for pilot work.

- Career professional development (CPD) courses in career management, leadership and management, personal effectiveness, specialist research skills and techniques, doctoral student supervision and public engagement.
- Individual coaching with experienced researchers.
- Access to sabbaticals to advance research programmes, outputs and impact.
- Participation in university-wide committees relevant to research; key roles within committees rotated on 3-4-year cycles to allow more staff to gain leadership and administrative experience.

4.2.3. Mentoring schemes and peer support

The use of mentoring schemes was common to several of the HPRUs examined in this research and seen as critical in helping to build capacity. Below we provide some examples of the mentoring and peer support scheme evidenced.

- Staff were automatically assigned research mentors or 'buddies' to aid their career development. These schemes had the potential to build staff confidence and could have a positive effect on academic outputs such as journal articles.
- One research unit provided evidence of a professional development programme that included a mentorship element. Within this scheme senior academics supported staff seeking to apply for promotion to more senior levels. Evidence of promotions following involvement in the scheme were highlighted within the template and the research unit cited the programme as an important retention tool which, in turn, had enhanced the sustainability of the research environment.
- HPRUs developed links with high level mentorship programmes, including the Health Education England (HEE) and NIHR Integrated Clinical Academic Mentorship and Outreach Programme, designed to support those following a clinical academic career pathway.
- Support was also available to junior level staff. In one example, they were provided with mentors to help them apply for various fellowship schemes. In another, staff were supported to help them complete their doctoral studies.

4.2.4. Early career researchers and contract research staff

HPRUs provided evidence of their commitment to the implementation of the Concordat for Career Development of Researchers. University level frameworks had been developed to support the implementation of the Concordat, including the development of strategic roles to support this. Fellowship opportunities, bespoke ECR training and mentorship programmes were offered as further examples of work in this area.

Research units recognised the importance of supporting ECRs on their journey to become independent researchers and the positive effect this could have on the research environment. ECRs could apply for internally funded fellowships, whilst support was also available to help these individuals towards their applications for other fellowship opportunities and research project grants.

At a more general level, there was evidence of the efforts of research units to ensure the workloads of ECRs were balanced between research, teaching and administration. Research teams were comprised of established researchers who worked collaboratively with research fellows and research assistants. HPRUs provided ECRs with research mentors and made coaching available from individuals with research experience.

Dedicated training in specialist and transferable skills, including research methods was made available to ECRs, including centralised cross-disciplinary training to aid development. HPRUs recognised the importance of interdisciplinary training including the potential to learn research methodologies from other fields. Like independent research staff, ECRs were encouraged to actively participate in national and international networks and could access funding to attend lectures, seminars and workshops.

4.2.5. Postgraduate research students

HPRUs recognised the importance of developing the next generation of applied doctoral researchers and had strategies in place to support their development. Where relevant, HPRUs participated in Doctoral Training Centres (DTCs), provided access to training and development opportunities and put in place structured programmes and interventions to further enhance the PGR experience. HPRUs recognised the importance of generating a more inclusive environment and where possible sought to minimise any physical isolation between PGR students and other academic staff. Below we explore some of the general activities of HPRUs in relation to PGRs.

HPRUs sought to identify and recruit future talent from master programmes (e.g. NIHR-funded master's programmes) Support and guidance could then be put in place to help these individuals prepare for PhD fellowships and studentships.

New PGR students attended compulsory induction sessions and completed research methods training courses designed to develop key and transferable skills. HPRUs reported that PGR students joined departments or schools, or were assigned to research clusters relevant to their field of study, as full staff members. This provided them with equal access to all forms of academic staff development opportunities. Furthermore, assigning PGR students to research clusters helped to ensure exposure to research-active staff and could also foster peer mentoring.

PGR students were provided with access to university graduate schools which provided support around studies including induction sessions, the training sessions designed to enhance the development of transferable skills, advice on PhD completion and onwards career planning.

PGR students received PhD supervision from academics with suitable methodological and field experience. This supervision included bi-monthly or monthly meetings and bi-annual progress reports, including an upgrade viva. Supervisors were provided with appropriate training and support, including refresher training at regular intervals.

A range of different training methods that were offered to PGR students were evidenced within the environment templates of HPRUs. These included:

- Individualised staff learning programmes, building upon the input already received through graduate schools.
- Completion of learning needs assessments.
- Generic training informed by RCUK guidelines.
- Mandatory communication and presentation workshops.
- Discipline specific and interdisciplinary research training focussed on the development of transferable skills, research methodologies, as well as training programmes with professional accreditation.

Examples of other measures put in place to support PGR students included:

- Partnerships with NHS Trusts funding PhD studentships with clinical placements to promote exposure to the clinical environment.
- Higher degree coordinators to help PGRs access statistical and methodological expertise
- Student-led monthly meetings to exchange experiences, skills, challenges and solutions with peers.
- Doctoral student lunchtime meetings.
- Doctoral studies panels comprised of experienced researchers and external stakeholders providing continuity of review and assessment to PGR students.
- Support for students to attend conferences and other training programmes.
- Annual research conferences, including postgraduate specific conferences, in which PGR students are encouraged to present papers and posters, and the requirement of PGR students to present at assessed seminars to facilitate structured feedback
- Journal clubs, protocol planning meetings and research saturdays.
- Summer schools including time to help develop academic writing and cohort-based residential programmes.

4.2.6. Equality and diversity

HPRUs made reference to their equality and diversity programmes, having infrastructure and programmes in place to support women and BAME researchers in order to promote equality of opportunity and achievement. Examples of the types of programmes implemented by HPRUs included:

- Mandatory equality and diversity training during induction.
- BAME mentor schemes.
- Schemes to support researchers following a career break.
- Family friendly policies including flexible working.
- Leadership programmes focussed on supporting women at senior levels.

The implementation of the Athena SWAN (Scientific Women's Academic Network) Charter was cited as a priority and HPRUs made references to their awards. Those that had achieved a silver award cited previous bronze awards, whilst those who had bronze awards stated their intention to achieve silver.

4.2.7. Research grant funding and spend

Supporting the notion that HPRUs have higher levels of research funding (e.g. Manville et al. 2015), the HPRUs assessed in this review provided evidence of increased grant funding and spend over the REF period, as well as evidence of collaborations with academics outside of UoA3. Evidence was also presented of research grant funding that had fallen outside the REF cycle.

HPRUs presented evidence of their research income across different professions (e.g. nursing, midwifery and allied health professions) and sources including UK Research Councils (e.g. EPSRC, NIHR, ESRC, MRC) UK Government, European Commission (EC), US Government, national and international charities, foundations and industries. Evidence was also presented of research grant funding involving collaborations with a diverse range of academics outside UoA3 including pharmacy, public health, clinical medicine, psychology, biological sciences, economics, business, law, social policy, engineering and English.

The importance of research grant funding was evidenced by efforts to help build capacity within HPRUs and increase the number of successful grant applications. For instance, HPRUs presented evidence of internal peer review systems as well as initiatives geared toward supporting researchers in identifying, writing and submitting research grant applications. In one such example, research staff with track records in securing research grants would peer review applications prior to submission, providing Principal Investigators with constructive critical feedback. In another, the research unit presented evidence of university-wide committees focussed around improving the quality of research proposals. For example, processes were put in place for reviewing not only successful grant applications, but also those which has been rejected. Staff were encouraged to lead on grants within their specialisms and to participate in consortium grants with colleagues.

HPRUs also made support available to staff at both the pre-award and post-award stages to provide more general support around research grants. HPRUs cited the importance of ensuring that relevant legislation and regulation was adhered to and were also eager to ensure that best practice was shared within the HEI.

4.2.8. Investment in research infrastructure, equipment and facilities

Evidence of a range of different investment activities designed to support research activity was presented within the environment templates. This included investments designed to enhance the physical working environment, bringing established academics, ECRs and PGR students into closer proximity as well as investments to enhance the capacity and capabilities of research units. Some examples of the investments of HPRUs include:

- Development of physical infrastructure to support academic staff, ensuring the co-location of ECRs and PGR students across all disciplines, increasing the exchange of ideas and networking opportunities.
- Investment in work spaces to support, including purpose-built office space, allocated desk space, and individual computing facilities.
- Custom built research suits, laboratories and environmentally controlled rooms.
- Dedicated Clinical Trials Units and Clinical Research Facilities funded in partnership with local NHS organisations.
- Meeting rooms for telephone conferences enabling staff to conduct confidential interviews with research participants.
- Clinical academics provided with access to multiple sites providing dedicated environments for research.
- PGR students have access to the facilities and equipment necessary to conduct their research. Reducing the sense of isolation felt by PGR students was important and HPRUs made efforts to integrate PGRs with other staff including allocated desks for first and final years.
- Support for researchers at all stages of the grant application process. For instance, local research coordinators providing post-award support as well as guidance in relation to the management of research contracts. Further institutional support was also made available in relation to grant costing, application and administration and research ethics.
- 'Second reader system' in which experienced researchers share their knowledge and expertise on the requirements of a strong grant application.

4.3. Collaborations

HPRUs provided evidence of interdisciplinary collaborations at the local, national and international level, across academic disciplines, with the NHS, industry and government agencies. Interdisciplinary research could be supported by university-level strategic research groups linking health faculties with other schools. The importance of NIHR funded CLAHRCs was stated in terms of infrastructure investment and the facilitation of collaborations with other UoAs.

Evidence of international collaborations with HEIs was presented, particularly where this resulted in jointly authored outputs, grant applications and implementation of research outcomes. However, evidence of academic collaborations extended beyond the academy. For instance, collaborations between academics in national research networks and large-scale collaborative grants with funding bodies such as the NIHR and the European Union (EU) were also evidenced.

HPRUs also evidenced their engagement activities outside the university sector, including collaborative partnerships with local NHS Trusts that included a range of different initiatives. For instance, academic staff held joint positions with local NHS Trusts. Researchers at HPRUs developed internships for non-medical professions and there was evidence of mentorship schemes geared towards supporting health professionals undertaking internships. Staff were supported to work with industry through funded doctoral students, whilst further evidence of NHS collaboration was provided through the development of the Clinical Academic Fellows Programme and involvement in the activities of the CLAHRCs. HPRUs also cited their involvement in policy committees with partners including the Higher Education Funding Council for England (HEFCE), the World Health Organisation (WHO), other international governments, NICE and the Department of Health. These collaborations were viewed by HPRUs as important programmes through which the research unit could develop links with practice, as well as to encourage clinicians to become more involved with research.

HPRUs provided evidence of a range of other activities signifying their wider influence with higher healthcare education. For instance:

- Academic healthcare staff played an important role in developing and influencing the UK and international research environment through editorial positions, conference and symposia, keynote and plenary addresses and grant giving bodies.
- HPRUs highlighted their efforts made around public communication of research, including knowledge exchange days open to local clinical teams, services and patient groups.
- HPRUs evidenced the recognition of their staff including any relevant honors, awards or fellowships.

5.   Ten tips for becoming a High Performing Research Unit

1.   Ensure that your staffing strategy is embraced by all researchers and is focussed on recruiting and retaining high-quality staff, including both recruiting senior academics with strong research profiles, and developing existing staff into more senior roles.

2.   Encourage researchers to initiate research collaborations organically and to take the initiative to apply for collaborative research grants.

3.   Establish a variety of staff training opportunities, including mentorship programmes (internal as well as external such as the HEE and NIHR Integrated Clinical Academic Mentorship and Outreach Programmes), grant application training, and performance management tied to performance rewards and incentives.

4.   Invest in a physical infrastructure that enables researchers to undertake multi-facetted research activities.

5.   Use Clinical Academic Fellowship programmes to build research capacity.

6.   Develop/extend partnerships with key stakeholders including clinicians, patients and industry to strengthen research and address clinical problems, and engage in local Collaborations for Leadership in Applied Health Research and Care (CLAHRCs).

7.   Develop PGRs and future research leaders through:

- Equal access to all forms of academic staff development opportunities
- Research methods training, discipline-specific and cross-disciplinary training, informed by RCUK guidelines
- Participation in doctoral Doctoral Training Centres (DTCs)
- Journal clubs
- Training to support successful research applications, including pre-award and post-award support
- Workshops, seminars and evidence updates including debates around recent advances and feedback on protocols
- Protected writing weeks
- Seed-corn funding for pilot work
- CPD courses in career management, leadership and management, personal effectiveness, specialist research skills and techniques, doctoral student supervisions and public engagement
- Individual coaching with experienced researchers
- Sabbaticals to advance research programmes, outputs and impact
- Participation in university-wide committees relevant to research
- An inclusive environment where PGRs and other academic staff are co-located
- Individualised staff learning programmes built on learning needs assessments
- Partnerships with NHS trusts funding PhD studentships with clinical placements to promote exposure to the clinical environment
- Annual research conferences where PGRs are encouraged to present papers and posters

- Summer schools where PGRs have time to develop academic writing

8. Build national and international partnerships and collaborative projects as well as international recognition in knowledge generation, translation and implementation.

9. Implement the Concordat to Support the Career Development of Researchers with particular emphasis in supporting women and BAME researchers, including mandatory equality and diversity training, BAME mentor schemes, schemes to support researchers following a career break, flexible working, and leadership programmes focussed on supporting women at senior levels.

10. Establish processes that allow researchers to review successful as well as rejected bids for external research grants, for instance through an internal peer review system.

6. Conclusion

This report provides an outline of characteristics of HPRUs within nursing, midwifery and the allied health disciplines which were identified within the environment templates submitted to REF 2014. HPRUs provided evidence of increased research grant income facilitated by investments into institutional support around funding applications. HPRUs made significant infrastructure investments over the REF period including enhancements to workspaces and purpose-built laboratories and research labs that benefited staff, ECRs and PGR students. Evidence of local, national and international collaborations was provided, through research projects, committees, editorial positions, key note addresses and conference presentations.

In relation to people, HPRUs had recruitment strategies focussed on employing high-level staff with established research profiles. However, HPRUs also recognised the importance of retention through staff development, with evidence presented of programmes designed to support researchers' development into more senior roles. HPRUs offered a range of different training opportunities, including the development of generic and transferable skills and advanced methodological skills. HPRUs also developed or participated in mentorship schemes for both senior and more junior staff to support promotions, fellowship applications and ensure the completion of doctoral studies.

These was considerable focus on the development of both ECRs and PGR students. HPRUs recognised the importance of supporting ECRs towards becoming independent researchers and the positive impact this could have on the research environment. In addition to dedicated training opportunities, HPRUs were also mindful not to over burden ECRs, using workload management systems to balance teaching, research and other administrative duties. Talent spotting during master's courses was cited as a means through which PGR students could be identified and supported towards PhD and fellowship applications. Once registered, PGR students joined departments as full members of staff providing them with access to training and development opportunities and were also linked to relevant research clusters.

The Evidence submitted to REF 2014 within the environment demonstrates a vast array of activity towards developing strong research environments. In this report, we have identified some of the key themes associated with HPRUs and sought to provide general examples of these activities. As we help healthcare faculties prepare for future REF exercises, our intention is to develop rich and detailed case studies outlining some of the specific programmes, initiatives and support mechanisms put in place by our membership to support the research environment. We encourage members to engage with us on this and would welcome nominations from the membership to help us build these case studies. Expressions of interest to participate in one of our case studies should be sent to Dorothea Baltruks (dorothea.baltruks@cod-health.ac.uk).

7. References

Manville, C., Hinrichs, S., Parks, S., Kamenetzky, A., Gunashekar, S., Wilkinson, B., and Grant, J. (2015) Characteristics of high-performing research environments A preliminary analysis. London: Higher Education Funding Council for England.