

<p>Institution: University of Southampton</p> <p>Unit of Assessment: 03 Allied Health Professions, Dentistry, Nursing, Midwifery & Pharmacy</p> <p>a. Context</p> <p>Our Nursing and Allied Health research aims to transform healthcare by delivering innovative solutions to major health challenges. We have achieved global reach and our work impacts on health care policy and practice. Our research spans theoretical, applied and clinical research to ensure world-wide and significant impact.</p> <ul style="list-style-type: none"> • Policy: We have influenced major policy with direct impact on healthcare e.g. Australian prescribing policy and cancer strategy, European organ donation policy, UK NICE guidance, Department of Health Outcomes Strategy for Cancer, and Department of Health End of Life Care Strategy (e.g. VOICES-SF in NHS England National Bereavement Survey developed by Addington-Hall now the basis for an indicator for the NHS Outcomes Framework on end of life care). Our research directly addresses pressing global clinical and service delivery problems (e.g. whether patients can use self-care - EU-WISE project; what is the optimum size and composition of the nursing workforce - RN4CAST European collaboration across 11 countries). • Practitioners: Our research changes practice: for example, our non-medical prescribing work led to changes in legislation for over 21,000 nurses and pharmacists in the UK who now independently prescribe medicines to patients, improving care and reducing costs. The reach of our research extends from the national (training physiotherapists to use rehabilitative ultrasound for elite sports including Premiership Football and GB Olympic teams) to international practice (advising and training US Army physiotherapists). • Industry: We have successfully commercialised our research in collaborations with major international pharmaceutical and healthcare corporations e.g. functional electrical stimulation devices - Odstock Medical Services: 16,000 sales, Vicon Ltd (UK), Ion Medical Solutions (USA), SCA (Sweden), Luxfer (USA), Ottobock (Germany). • Charities We work closely with Non-Governmental and Third Sector organisations to inform their strategy and practice (e.g. United Nations, Macmillan Cancer Support, International Continence Society, Arthritis UK). • Patients: Our ground-breaking models of user-led research have been adopted internationally (e.g. Cancer Australia's consumer involvement framework). We have built a vibrant community of patients and service users, whom we engage in targeted public and patient engagement. Partnership working with patients through the Wessex Academic Health Science Network (AHSN) and the NIHR Collaboration for Leadership in Applied Health Research and Care Wessex (CLAHRC), to inform our research and increase its impact. <p>b. Approach to impact</p> <p>Partnerships: We have maximised the reach of our research through continuously building strong national and international partnerships. These have embedded our research in major policy and system level change initiatives from the outset (e.g. collaborating with Department of Health England and Macmillan Cancer Support see: 03-04 <i>Transforming care for cancer survivors</i>).</p> <p>We work with carefully chosen industry partners to deliver patient-focused solutions (e.g. developing Luxfer portable oxygen cylinder: Bruton). Staff are actively supported to work with industry through funded doctoral studentships (e.g. Ion Medical Solutions, DePuy/Johnson & Johnson). These have enabled the commercial development of pioneering technologies (Hand and Wrist Kinematics: Metcalf; ActiGait stimulator for stroke rehabilitation: Burrige; SCA AB Continence Product Assessment Tool: Fader).</p> <p>Agility: We have responded to international requests for research-led advice (e.g. maternity services advice to United Nations in South Sudan) and exploited our expertise to deliver bespoke curriculum development in Norway, Australia, Singapore, and the UK. May's Normalisation Theory Toolkit (www.normalizationprocess.org) is now used to inform practice improvement in the UK, Canada, Australia and the USA.</p> <p>Infrastructure: We have prioritised strategic investment in infrastructure, support mechanisms and</p>

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organisational structures that deliver far reaching and sustained benefits. This has enabled the rapid conversion of our research findings into new technologies, and supported work with international companies (motion capture technology, Vicon; medical gas canister, AirLiquide).

Multidisciplinary collaboration is the foundation of all of our work, both within the University and beyond. This is supported by University Strategy and infrastructure investments designed to ensure the widest reach and influence of our research. Our staff are supported by specialist Research & Innovation Services with a dedicated staff of 60, centrally and embedded in Faculties to support all aspects of research, from contract and intellectual property management, to knowledge transfer, dissemination and business engagement. This support is provided for researchers at all stages of their careers. For example, it has directly supported achievement of patent PCT/GB2011/050457 for Hand and Wrist Kinematics (HAWK) developed by ECR Metcalf; www.southampton.ac.uk/promotion/hawk_02.shtml)

Investment: We have used the University Strategic Investment Fund, in collaboration with the new Institute for Life Sciences (ILFS; £55 million investment), to support knowledge mobilisation fellowships to bring researchers from different disciplines to work with our nurses and allied health researchers to develop commercial health technologies. This has enabled projects on preventing biofilm blockage in catheters (nursing and IFLS), biomarker sensors for detecting pressure ulcers (bioengineering and biophysics) and muscle measurement (physiotherapy and medical imaging). Already these are producing healthcare solutions with high commercial potential e.g. MyotonPRO a new portable device for measuring muscle mechanical properties (with Myoton Ltd). Since 2010 the Faculty has invested £1.7 million in vibrant work spaces to support clinical and applied research. This includes a suite of molecular and biochemical laboratories equipped with state-of-the-art facilities for translational research, specialist cell culture and clinical gait laboratories which support foundational and applied Nursing and Allied Health research. Our new Clinical Academic Facilities across multiple sites provide dedicated environments for research; their location in the heart of local NHS services fortifies our link to NHS investment in fellowships to deliver research with direct impact on patient care. Our facilities have won national awards (*Health Services Journal* 2012 for Most Progressive Research Environment; *Patient Safety Award* 2013 for infection control with University Hospital Southampton NHS Foundation Trust, Prieto).

c. Strategy and plans

Our strategy is to build on our proven research strengths, informed by historical impact (for example, in cancer survivorship) and to extend the reach and significance of our research. Over the next 5 years we plan to:

- *Build new partnerships to increase the reach and impact of our research*
We will support targeted collaborations with major national and international policy agencies, leading researchers and centres of excellence. Our aim is to secure global presence and we have ring-fenced resources to enable our staff to do this, and delivered training opportunities to improve our performance.
- *Strengthen our networks to drive rapid adoption of beneficial healthcare practices*
The Wessex Academic Health Sciences Network (AHSN), Wessex Health Education and Innovation Cluster £2.15 million (HIEC) and £19 million Wessex Collaboration for Leadership in Applied Health Research and Care (NIHR CLAHRC Wessex, Corner; Director) are central to our long term strategy for ensuring maximum impact for our research. They will support networking with industry partners for evidence sharing, proof of concept work and moving our research into practice. Our work with the Wessex AHSN and CLAHRC will provide internationally transportable models for improvements in practice. We will use the unique HIEC/AHSN Wessex Innovation Resources ([WIRES](#)) site for health and care professionals, as a platform to share knowledge and information across Wessex CLAHRC partners and the wider health community.
- *Focus on knowledge mobilisation*
Building on our successful models of Clinical Academic (£2.2 million) and Knowledge Mobilisation Fellowships (£80k) funded by the Faculty and our NHS partners, we will ensure that knowledge transfer is part of every research project we do. We will utilise the Higher Education Innovation Fund (£50k) to invest in enterprise initiatives to commercialise our research

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discoveries. We will intensively focus on outreach and public engagement and use University mechanisms to support this (including the University's Express Roadshow run by our Public Engagement with Research Unit, and Massive Open Online Courses delivered through FutureLearn). We will use the dedicated public engagement and media communication team based in the Faculty to extend the reach of our science to public audiences (e.g. the [short film](#) about the ColoRECTal Wellbeing study). We will use our applied clinical research to engage with health care professionals and providers to deliver evidence-based care and service improvements to influence healthcare practice in this and other countries (e.g. www.continenceproductadvisor.org - the only independent, not for profit, internationally focused and evidence-based website for continence products). We will continue to support senior staff to influence health policy internationally by engaging with government and non-governmental agencies and policy makers to guide and shape implementation and innovation.

- *Grow our talent to drive impact*

Historically, nurses and allied health professionals have developed research careers in later life and this has limited impact by reducing the quantity and duration of their research endeavours. Recognising this we will use our pioneering clinical academic programmes and 'high flyer and talent spotting' events to focus on the earlier identification and development of clinical and applied researchers who can deliver significant and sustained impact. Our successful strategy to date, with £1.09 million secured from the Wessex Health Community and £1.1 million from NIHR in national fellowships, has enabled us to expand our research capacity to support impact. We have nurtured clinical and non-clinical Research Fellows whose work directly influences policy and practice and developed key staff to professorial level. This has been consolidated by recent appointments of world-leading academics with a track record in profoundly shaping policy and practice in key areas. We will harness this talent to maximise impact.

d. Relationship to case studies

Our case studies reflect our agile approach to impact, our effective knowledge mobilisation and demonstrate our strong partnerships and strategic investment to facilitate and deliver sustained benefits.

03-01 *Influencing policy and practice in non-medical prescribing (NMP)* and 03-04 *Transforming care for cancer survivors* highlight our significant impact on direct patient care and service delivery. We have worked closely with policy makers, practitioners, patients and charities to change practice and maximise impact within and beyond the UK. We have supported individuals (e.g. Latter developing international influence on prescribing) and worked closely with partners, providing data and measures of patient outcomes and quality of care for whole patient populations (e.g. PROMS for Cancer). As a result of our research, over 19,000 nurses and 2,000 pharmacists now independently prescribe medicines directly to patients across the most comprehensive range of medicines in the world.

Our 11 year programme of translational research on 03-05 *Organ and Tissue Donation: supporting the decision-makers* has helped transform public awareness and professional practice and is now embedded in UK policy and is being taken up globally to save lives. Our research on bereaved family members' decision making about organ and tissue donation has led to a change in both the approach and service provided post donation for approximately 5,700 bereaved family members. We have supported and developed Long-Sutehall so that she now leads this programme of work.

Our investment in support and facilities (e.g. laboratories) has led to successful commercialisation of 03-07 *Innovative Technologies for Stroke Rehabilitation* ensuring translation into clinical practice and home use, and our methodological expertise in these areas delivers measures and tools which are immediately deployed in health settings (e.g. Southampton Hand Assessment Procedure used by commercial manufacturers of prosthetic devices, in University research, practitioner education, hospitals and rehabilitation centres in the UK, USA, Canada, Europe and Japan). We have demonstrated successful adoption of technologies in practice (the main UK commercial provider reports 16,000 sales of functional electrical stimulation devices), and we have published evidence for their continued use.