

Institution: Swansea University
Unit of Assessment: 3b - Allied Health Professions, Dentistry, Nursing and Pharmacy: Nursing
a. Context

The research of the four groups of the UoA - Medicines' Management, Health Economics, Practice Development and Health Humanities - enhances both processes and outcomes of care, benefitting nurses, midwives, and service users, and impacting on guideline development. All work has contributed to clinical knowledge, while work on health economics of pain management (case 1) and medicines' management on breastfeeding (case 2) has been adopted in clinical guidelines, impacting on outcomes of care. Citation in guidelines indicates the UoA's contribution to evidence-based practice. For example: work on legal aspects of medicines' administration features in guidelines for learning disability care; insights into the complexity of decision-making regarding initiation of end-of-life care pathways underpinned the Neuberger review of the Liverpool Care Pathway (2013, *More Care, Less Pathway*), which led to plans to abolish this Pathway in England; the 2013 NICE guidelines on prevention of breast cancer featured Swansea's health economics group; pain management work features in **NICE** (National Institute for Health and Care Excellence) guidance (case 1); breastfeeding work has been cited by the National Childbirth Trust, UNICEF, the US surgeon general, and other guidelines (case 2).

Medicines' management, one of five essential skills clusters specified by the UK statutory body for the nursing curriculum (NMC 2010), is both the focus of one research group and the unifying theme for the UoA's impact. The UoA reflects the eclectic nature of medicines' management, patient safety and harm reduction, encompassing: health economics (case 1), practical and legal aspects of medicines' administration and monitoring, nurse education, and identification of adverse drug reactions (case 2).

Nurses, midwives, and service users benefit from guidelines, but also from the UoA's close links with the local health boards (**HBs**) through the **Wales Centre for Practice Innovation (WCPI)** (below). For example: adoption of medicines' monitoring ensures that long-term users of mental health medicines have regular dental inspections to minimise harm emanating from xerostomia and bruxism; provision of safety devices and waterproof drapes was augmented in operating theatres; national guidelines for monitoring nutritional status were introduced in local care homes.

b. Approach to impact

1. **Swansea Centre for Health Economics (SCHE)** has developed the reach and significance of its activities since the acquisition of a health economics consultancy in 2011 by the College of Human and Health Science (**CHHS**). Establishing SCHE has generated economic impact: 11.6 researcher posts are externally funded (along with 2 externally funded PhD studentships) to undertake research consultancies and commissions from the public and private sectors on, for example, the costs of medicines, technologies and their management. In addition to case 1, examples of impact include: economic evaluation for manufacturers successfully applying to the All Wales Medicines' Strategy Group for adoption of Cinryze®, within its UK licence; health economic evaluation for NICE to determine the age and carrier probability at which genetic testing should be offered to people with family histories of breast and/or ovarian cancer.

2. **Medicines' management, nursing and midwifery** researchers integrate the clinical applications of their research into research-led teaching to ensure high-quality, safe practitioners locally and internationally *via* standard works (including children's nursing, nursing practice, emergency care, professional ethics, reflection, nursing theory and pharmacology, case 2) and professional journals (readership > 300,000). The links between teaching, research and impact on clinical practice are exemplified by tracing the impact of medication monitoring in a series of local projects undertaken with the clinicians using the research. These illustrated the need for (*J. Adv. Nurs.* (1999) 29; 1068), educational effectiveness (*J. Adv. Nurs.* (1999) 30; 796) and clinical effectiveness of a nurse-led monitoring intervention (*J. Adv. Nurs.* (2002) 38; 437, *Int. Nurs. Rev.* (2004) 51; 221, accessed >100 times/ year). When audited independently, hospitals in Hywel Dda HB (centred on Carmarthen) were above the UK mean in recording blood pressure, obesity, glycaemic index and dyslipidaemia, and higher proportions of inpatient records included structured assessments (Public Observatory for Mental Health 2008). Such links between research and impact on the processes of care are formalised in the WCPI. Other work, also arising from

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teaching, was identified by guideline authors, and formed the basis for change in UK guidelines and outcomes of care (case 2).

3. **Wales Centre for Practice Innovation (WCPI)** (see Environment). Since inception in 2008, the Department of Nursing (1 of 4 departments in CHHS) has pioneered strategies to maximise impact by engaging with practitioners and developing teacher-as-researcher and action-research projects. Projects are developed jointly by the UoA and clinicians to meet clinical need, ensuring local impact. Publication and networking facilitate national and international reach. The WCPI's accredited clinical teams (currently >20) select, plan, implement, evaluate and disseminate practice-related research. Where positively evaluated, clinicians adopt the intervention, and thus change the delivery of care. Recent examples include evaluation of an integrated health and social care centre (funded by Hywel Dda HB). This evaluation indicated the potential for the service to maintain physical well-being, supporting its continuation. The WCPI conferences in November 2011 & 2012 attracted >150 delegates from the 2 local HBs, English HBs, Ireland and Portugal; a further conference is scheduled for 2014.

4. All research groups engage with **service users**. Health Humanities has reached out to the general public to enhance understanding of the importance of medicines' management. This long view on medicines' management is contextualised by the history of thalidomide, in the "Thalidomide Life Stories" exhibition currently touring the UK, associated BBC television programmes (May 2013) and invited seminars at the Wellcome Trust and Department for Education.

c. Strategy and plans

Commitment to high impact research is integral to Swansea's ambition to join the top 30 UK research-intensive HEIs. The University holds an EPSRC Impact Acceleration Account and will be using some of this funding to instigate an institution-wide impact award scheme in 2014 to recognise and celebrate research impact. The UoA's plans to ensure that research continues to enhance the process and outcomes of care include:

1. Internal strategy for achieving and evaluating impact:

- Focusing UoA resources for publication fees, studentships, scholarships and research sabbaticals on areas of impact, such as **medicines' management**. For example, collaboration between HBs and CHHS will jointly fund post-doctoral research.
- Strengthening links between the UoA and HBs by expanding the WCPI and developing the HBs' nursing research action plans and strategies.
- Mandating UoA Impact Leads to place impact on the agendas of Research Committees and Management Boards.
- Ensuring future grant applications have impact plans and resources to assess impact, for example to survey beneficiaries of research.
- Raising impact in all professional development reviews, and promotions. The University's award-winning *Performance Enabling Scheme* and *Career Pathways* model for staff promotion specifically supports and rewards innovation and engagement / impact activity.
- Ensuring marketing and commercialisation staff continue to promote research.
- Releasing staff for all available guideline development opportunities (Environment, section E).
- Engaging with Welsh Government Ministers, Nursing Officers and officials to promote adoption of our work at policy level. For example, we anticipate that our review of 'orphan drugs' will expedite their introduction and improve access to these medicines, with significant impact on patients with rare diseases across Wales.

Investment beyond 2014 includes: WCPI (time of a professor and nurse lecturers); SCHE (time of a professor and a reader) plus external funding for a major role in the Welsh Health Economics' Support Service and economic analysis in 8 major Health Technology Assessment projects and 3 projects for small and medium-sized enterprises (**SMEs**); **QUEST**'s (Qualitative Enquiry Supporting Trials) comparison of medicines for people with bowel disorders (health humanities and NISCHR [National Institute for Social Care and Health Research] funded); **EUROmediCAT** (medicines' management, European FP7 funded), examining prescribing in pregnancy, a problem identified by

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NICE (CG 45 2007 p.38); trials of nurse-led medication monitoring (medicines' management, NISCHR funded).

2. Continued collaboration with the College of Medicine (CoM) to take advantage of recently developed **infrastructure** for multicentre projects:

a) **The Clinical Trials Support Unit, based in CoM** facilitates clinical trials of nurse-led interventions and SME products (Medicines' group). It provides methodological expertise, including qualitative research, QUEST, inaugurated in 2012 by Rapport, and health economics *via* SCHE. For example, trials of **nurse-led medication monitoring** rely on the Support Unit for standard operating procedures, randomisation and health economics support. On completion, we will engage with clinicians and policy makers to introduce medication monitoring in targeted clinical areas.

b) The *Secure Anonymised Information Linkage system* for health informatics research is funded by MRC, ESRC, NISCHR and Welsh Government. This component of the national e-health records research infrastructure for Wales supports pharmacovigilance projects, such as EUROmediCAT. The findings of this study will influence prescribing.

3. **Service user involvement** in nurse-teaching programmes and health services' research, for example by engaging with service users in curriculum development, research development groups and funding applications.

4. **Link with SMEs.** CHHS' commercialisation manager facilitates commercial opportunities and provides legal/Intellectual Property advice. For example, CHHS' investment in the development of wound-care products (including 2 PhD studentships, and internally funded research), has been commercialised in a new company, *Lucilia Pharma Ltd.*, generating employment. Antibiotics are being developed from molecules identified from larvae, and product trials are planned. We also work with: care homes (medicines' management), *Cultech Ltd.* (probiotics), *DTR Medical* (surgical instruments), and *BioMonde* and *Fusion* (wound-healing products).

d. Relationship to case studies
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Medicines' management has been changed through: practice development initiatives (WCPI), service users' awareness of the historical links with disability (Health Humanities), investigation of doses (medicines' management) and economic evaluations (SCHE). We present two aspects of our work which matured, impacted on guidelines and resulted in practice changes and clinical gain before the infrastructure noted above was in place. Case studies were selected from the wider context of our work in harm reduction, based on their uptake in national guidelines, clinical gain, and engagement with All-Wales initiatives for patient safety (SCHE). Importantly, these research outputs are disseminated in student textbooks, ensuring reach across the health care community, in English and in translation. These cases exemplify our approaches to impact:

1. Sustained investment in **health economics** by CHHS facilitated national and international collaborations, attracted external research funding (sections 4b, 4c), fostered an international reputation for expertise in the area and opportunities to work on major projects, including evaluations of NSAIDs (case 1). For example: until recently, Phillips was released by the college to sit on the All Wales Medicines' Strategy Group, determining the medicines' management strategy for Wales and NICE Programme Development Groups for Public Health. This facilitated the adoption of this research at policy level.

2. Research emanating from teaching and scholarship. Academics teaching professional courses are encouraged to write for professional audiences, not only to disseminate their research, but also to develop research ideas. The breastfeeding case study exemplifies **the teaching-research-impact** links developed in **medicines' management**. Teaching nurses and midwives attracted invitations to publish textbooks. The research, which developed from the book, was independently selected by guideline authors, and formed the basis for change in UK guidelines. It features in new editions of the standard midwifery pharmacology textbook, adopted by most UK midwifery departments (case 2). Information from textbooks and guidelines influenced practitioners to modify practice by minimising doses.

CHHS's future investment will focus on medicines' management and health economics to develop Swansea University work in these key niche areas of health services' research.