

<p>Institution: University of Sheffield</p>
<p>Unit of Assessment: 2 - Public Health, Health Services and Primary Care</p>
<p>a. Context</p> <p>The School of Health and Related Research (SchARR) at the University of Sheffield (UoS) has a focus on applied health services and public health research (HSPHR). It is collaborative and interdisciplinary and contains the core disciplines of HSPHR along with clinical expertise in public health, emergency medicine, and rehabilitation. We have particular strengths in conducting economic evaluation for national policy makers such as the National Institute for Health and Care Excellence (NICE) and the Department of Health (DH). Our research aims to address the needs of policy makers, practitioners, industry and end users of health and social care services from the UK and around the world.</p> <p>Key stakeholders and beneficiaries</p> <p>SchARR has a diverse set of research users and beneficiaries, the main examples being:</p> <ul style="list-style-type: none"> • International, national and local policy makers and implementers, providing robust evidence to inform both decision making (e.g. NICE and DH) and clinical guidelines • Health practitioners and commissioners, who require access to the best evidence to ensure rapid and effective translation into practice • Patients, carers and the public, who contribute at all stages of the research process including dissemination, and who benefit from the use of the findings • Industry, in particular pharmaceutical and medical device companies, which need evaluation (including economic evaluation) and implementation of their products <p>Types of impact</p> <ol style="list-style-type: none"> 1) <i>Improving efficiency</i> by undertaking evaluations of the effectiveness and cost-effectiveness of a broad range of health services and public health interventions. Our work has led either to the adoption of new interventions which are found to be a cost-effective use of resources or, equally important, to the decision not to adopt an intervention if it is found to be cost-ineffective (e.g. 60 Technology Appraisals, 22 Public Health Evaluations and 16 other reports for NICE between 2008-13). 2) <i>Improving clinical practice</i> through major clinical trials, and the incorporation of our findings into Clinical Guidelines. Our HTA reports, for example, have been cited in at least 31 national or local clinical guidelines or prescribing policies (e.g. case study: the implementation of primary angioplasty in patients with acute myocardial infarction). 3) <i>Informing health policy and debate</i> (e.g. case study: the Impact of the Sheffield Alcohol Model on Alcohol Policy). 4) <i>Promoting the development, testing and evaluation of technologies in health and social care service systems</i> such as the EPSRC-funded SMART consortium on self-management technologies and a TSB funded project to determine how Telehealth technologies might be mainstreamed in practice. 5) <i>Engagement with industry</i> that has enabled many i4i medical devices, assistive technologies (e.g. through the Devices for Dignity programme) and pharmaceuticals to be robustly evaluated between 2008-13 using cost-effectiveness models and, where appropriate, brought to market for the benefit of end users. 6) <i>Improving the relevance and usefulness of research for users</i>, for example, projects on the primary measure of benefit used by NICE, the Quality Adjusted Life Year (QALY), the impact of the end of life on decision modelling for NICE, and the use of conceptual modelling in economic evaluation to facilitate the involvement of stakeholders.
<p>b. Approach to impact</p> <p>Working directly with research users</p> <p>Research conducted in SchARR is a process of co-production with end users. At the outset, research users are involved in identifying topics for research, scoping the study and designing it to ensure that the research meets their needs. Mechanisms for on-going stakeholder engagement</p>

Impact template (REF3a)

include having end users (clinicians, patients, industry partners, policy makers) on project steering groups, participation as co-investigators, and dissemination of our research through presentations, workshops and provision of lay summaries.

For a large part of SchHARR's research, including the work for NICE and DH (which accounts for £14.7m or 27% of research awards between January 2008 to July 2013), there is a direct relationship between policy makers and researchers. In the case of NICE Technology Appraisals and Public Health Evaluations the scope of the research question is agreed in advance with the policy maker, the progress of the project is regularly reported and the final report is presented to the policy making committee with key researchers in attendance to answer questions and undertake further analyses, as required. This is a process determined by NICE, but enthusiastically supported by staff at SchHARR in their work and through membership of various NICE committees: Technology Appraisal Committee (n=6), Public Health Interventions Advisory Group (n=2), other Advisory Groups (n=11), and Methods Working Parties (n=4). Two Policy Research Units have been funded by the DH Policy Research Programme to undertake research directly for DH policy makers. This is facilitated via specific liaison officers at DH and regular meetings with policy makers.

Much of SchHARR's research comes from working with research users in responding to calls, shaping the research agenda and developing innovative research ideas. Research users are involved in the choice of topic, design, conduct and dissemination to maximise the impact and usefulness of the research. Several groups within SchHARR have been concerned with maintaining the end user at the heart of activity at all stages of the research process. These include:

- Leadership of the NIHR Research Design Service for Yorkshire and Humber (RDSYH) that has developed a range of supports for fully incorporating PPI into research; and a SchHARR PPI lead who provides support to staff on appropriate PPI input into research proposals.
- Leadership of the South Yorkshire Collaboration for Leadership in Applied Health Research and Care (CLAHRC), a five year partnership between academia and health and social care providers and commissioners (recently renewed as part of the Yorkshire and Humber bid).
- Leadership of an EPSRC knowledge transfer (KT) consortium (KT-EQUAL) to translate the outcomes of the EQUAL programme of research (extending quality life of older and disabled people) experimenting with different forms of knowledge transfer activities over the last 4½ years (www.equal.ac.uk).

The experience gained from these initiatives has enabled SchHARR to promote impact through cascading relevant expertise, policies and procedures.

Promoting research impact

SchHARR researchers are encouraged to use a range of mechanisms to promote impact amongst a diverse audience of policy makers, clinicians and members of the public and patients. Traditional academic outlets are supplemented by a working paper series downloadable by the public. SchHARR funds online versions of published papers (in addition to those arising from RCUK projects) to improve access and uses the White Rose Repository to ensure open access to all peer reviewed papers. Staff present at non-academic conferences and meetings in the UK and abroad to disseminate their findings to research users and organise workshops for stakeholders, with SchHARR's travel fund covering costs not met by research funders. Increasing use is also being made of blogs and Twitter to engage a wider audience. KT-EQUAL has produced lay monograph summaries out of the majority of workshops, with metrics demonstrating frequent downloading. Case summaries of successful KT from research are available through KT-EQUAL, as are podcasts advising how to achieve impact.

An Impact Strategy Group (chaired by the Director of Research - Brazier) was established in July 2012 to promote the impact of SchHARR's research, along with the appointment of an Impact coordinator (see below). Impact related activities are formally allocated time in SchHARR's workload allocation model. The University recognises KT as a promotion criterion alongside the conventional criteria of research, teaching and administration. The annual staff review process includes KT and research impact.

Knowledge transfer and commercial activities

The creation of impact through KT is one of the 3 pillars of SchHARR's work alongside Research

Impact template (REF3a)

and Teaching. Consultancy and collaborative research with industry is a major activity within SchARR that generated an average annual income for KT during the REF period of £940k pa (>10% of research awards). On average, we carry out 57 consultancy projects a year, and have worked with 120 companies and 18 NHS organisations over the last 5 years.

A Director of Innovation and Knowledge Transfer was appointed in 2009 with a committee to oversee all KT activities, provide advice and support and be responsible for implementing a strategy. More recently, a new post was established to develop further relationships with pharmaceutical companies and the NHS locally. A consultancy group set up to support the new post meets monthly and has administrative support (0.5 WTE) to provide guidance, training and mentoring on the production of consultancy proposals. They ensure that good use is made of University of Sheffield funds. In addition, there are now 2 Faculty Knowledge Exchange Champions to encourage staff to do more KT, transfer skills, create links and share learning.

The Centre for Assistive Technology and Digital Health care (CATCH), established and supported by the University in 2012 with £3m investment, is led by SchARR and involves other departments within the University. One of CATCH's goals is to work closely with manufacturers of medical devices to help bring them to market.

SchARR makes full use of available University funding for KT activities. This has included working with industry to develop and evaluate new medical devices and assistive technology through the University's EPSRC KT Account and other University KT initiatives (£145,600 in total). An important resource for promoting KT and commercial research is the University's Health Care Gateway where SchARR presented at the last 2 industry innovation and partnership conferences, with the second hosting 150 medtech companies.

Marketable IP goes through the UoS commercialisation partner Fusion IP which has, for example, sold more than 460 licenses for the SF-6D to commercial users in the USA and around the world (see case study).

c. Strategy and plans

The primary purpose is to maximise the impact of our research to benefit people's health and wellbeing. To achieve this, we shall continue to work collaboratively with key stakeholders to form productive partnerships and to stimulate public engagement around the key issues related to our research. Our multidisciplinary research aims to respond to, and help inform, the changing health and social care landscape.

Plans for meeting the stated priority goal

An Impact Strategy Group was appointed in July 2012 to develop, implement and monitor the School's impact strategy. A key recommendation from the group was to appoint an Impact Coordinator in SchARR. The Coordinator is now working with the Research and Innovation and KT committees to coordinate implementation of our Impact strategy over the next 5 years.

The Strategy builds on recent experience of what works, including the use of innovative approaches to promote the impact of research which have been implemented through programmes such as the EPSRC KT-EQUAL project and CLAHRC YH. The main dimensions of our strategy are as follows:

- **Facilitating dialogue and interaction with key stakeholders**, for example, being involved in a wider range of clinical networks, a greater number of posts working jointly in SchARR and the NHS (e.g. currently 18 across the UoA) and linking into PPI networks, such as those identified by the NIHR RDSYH, the CLAHRC YH and the national School for Public Health Research.
- **Stimulating public engagement with research**, for example, through co-ordinating and promoting workshops, research seminars, small conferences and other impact events. This will include the production of guidance and support for staff.
- **Improving the accessibility of our research**, for example, making research outputs more accessible to the public, policy makers and implementers, industry, professional bodies and practitioners. We shall do this through reworking key research outputs into a range of accessible and interactive formats (including a new 'bite sized format'), using a range of media, re-launching our website to promote impact and making full use of the White Rose Repository.

Impact template (REF3a)

- **Building our research impact infrastructure**, for example, to develop a guide on promoting the impact of research for staff to use and provide a system of mentors with experience in achieving impact to support them. In addition, to raise the profile of impact within ScHARR we have introduced a measure to evaluate impact into the annual staff review process. Staff are expected to include an impact section in their CV.
- **Investing in training and development**, for example, through encouraging staff to attend more user-focused conferences and other events to present their work. We recently made a conference travel fund available for this purpose where project grants do not provide sufficient support. We shall also assist academics in ScHARR to communicate their findings – including training in how to publicise their work in a variety of accessible formats to reach the widest possible audience. Better use will be made of the University's training and media office.
- **Developing systems to support and co-ordinate research impact**, for example, to document the causal pathway of the impact of ScHARR research and related evidence and monitor impact on an on-going basis including the development and implementation of metrics by which our impacts can be measured.
- **Fostering the international impact of our research**, through a newly appointed internationalisation committee.

Commercial activities

ScHARR's consultancy lead has been reviewing our links with industry and introduced a number of developments including establishing long-term strategic Master Services Agreements with global industry partners. Currently there are 13 UK and Global Master Service Agreements in place running over several years and continuous communication with key clients.

d. Relationship to case studies

The case studies typify the ways we have promoted the impact of our research for a range of audiences.

Four have arisen from work directly undertaken for national policy makers: the use of statins, osteoporosis drugs, and the diagnosis of deep vein thrombosis (DVT) for NICE, and the changes to the colorectal screening programme implemented by the National Cancer Screening Committee. In these cases the projects were scoped and agreed with policy makers in advance. The work directly informed the development of guidance provided by these agencies to the NHS and influential around the world. The DVT work was also taken up by the American College of Chest Physicians following a visit by ScHARR researchers.

The research undertaken to develop a new measure to identify failing hospitals was won in open competition and reflects the relevance of the skills and expertise of ScHARR researchers to meeting the needs of policy makers.

The research into improving treatment for heart attacks was undertaken for DH and informed a new national strategy on using primary angioplasty (the National Service Framework for Coronary Heart Disease). In addition to publications in clinical journals, we produced an overview of the findings for ambulance paramedics and engaged directly with clinicians through presenting our findings at clinical conferences, such as the College of Emergency Medicine Annual Scientific Meeting.

The impact on public health policy is represented by the Sheffield Alcohol Policy Model. Here ScHARR was again commissioned to undertake the work by the UK and Scottish Governments to examine minimum pricing of alcohol. This has arguably been the most difficult to follow through since it is highly politicised, but the impact was helped by a willingness of the researchers to communicate their findings to policy makers (including a Select Committee) and to explain and defend their findings to the national media.

Lastly, there is the new SF-6D measure for deriving Quality Adjusted Life Years that has been used by policy makers around the world to help inform resource allocation decisions and has resulted in over 460 licenses being sold to commercial users (mainly in Europe and the USA) and 521 licenses being given at no cost to non-commercial users around the world.