

<p>Institution: University of Liverpool</p>
<p>Unit of Assessment: 2 – Public Health, Health Services and Primary Care</p>
<p>a. Context</p> <p>Research in this unit has led to impact across economic, societal, and healthcare arenas. Beneficiaries range from individual patients to international agencies. The strategic focus of our <u>applied</u> public health and health services research is evaluating and developing policies and interventions to improve health outcomes, reduce health inequalities and improve access to effective health care.</p> <p>The longstanding civic engagement between the University of Liverpool and local community grows stronger, especially for multi-disciplinary public health and clinical medicine. Public and patient involvement (PPI) is integral, including leading the PPI component of the Medical Research Council (MRC) North West Methodology Hub to hosting the 60+ strong ‘Social Sciences of Health and Medicine Collaborative’. This PPI focus reinforces our commitment to maintain a strong research portfolio. This includes clinically relevant, large, pragmatic, practice-changing randomised controlled trials (ranging from pregnancy and paediatrics to care of the elderly), extensive research synthesis activities, three influential Cochrane Collaboration groups (including the Pregnancy & Childbirth Group, the world’s first and consistently most productive Cochrane review group), our successful bid to lead the North West Coast Collaborations for Leadership in Applied Health Research and Care (CLAHRC), and two prestigious World Health Organisations (WHO) Collaborating Centres (Research on Social Determinants of Health (2007) and Research Synthesis in Reproductive Health (2012)).</p>
<p>b. Approach to impact</p> <p>Our beneficiaries range from health charities to international agencies and governments and from groups of individuals (e.g. vulnerable adults) to local authorities, healthcare, social and other specialist services. High impact has been achieved through continuous engagement with local communities, and with global public health leaders. Extensive supporting infrastructure now includes our International Development Office, whose role is to identify and develop international collaborations and institution-level partnerships, and the University’s Business Gateway office, whose role is to aid commercialisation of University research, obtain sector specific market analysis, develop and manage projects including development of contracts and negotiating and exploitation of intellectual property. We aim, therefore, to maximise the impact and sustainability of our major research programmes, supported by Faculty and University level strategies.</p> <p>Forming strong partnerships in local, national and international collaborations has been fundamental in helping us achieve further impact. Specific examples of our approach include:</p> <p><u>At the city-region level:</u> The University of Liverpool is distinguished by its long-standing partnership with the local public health community. This is demonstrated by active roles as an academic partner, and since 2008 helping to shape the first and subsequent city health plans; city and regional public health strategies; regional development plans; regional health inequalities task forces; the 2009 city-region <i>Health is Wealth Commission</i>, and <i>Liverpool Health Partners</i> integrating all NHS Trusts and setting up Health and Wellbeing Boards in 2012/13.</p> <p><i>Scott Samuel</i>, supported by the Cheshire and Merseyside Directors of Public Health established <i>The Liverpool Public Health Observatory (LPHO)</i> at the University. This has served as an exemplar for the nationwide network of regional PHOs since 2000. With Department of Health (DH) funding, LPHO has pioneered and led the UK Health Impact Assessment (HIA) Consortium developing methods for impact assessments, equity audits, research and education. Since 2008, we have trained approximately 2000 people in five day courses and web-based programmes (85% UK, 15% overseas).</p> <p>Since 2008, <i>Capewell</i> has coordinated the research programme for <i>Heart of Mersey (HoM)</i>, England’s largest regional cardiovascular health charity, producing evidence to: a) inform successful local interventions to promote healthy food and develop smoke-free legislation and community environments (over 100 play parks locally) and b) widely disseminate key messages through broadcast and print media (more than 100 items). HoM was cited as an exemplar in the NICE guidance: CMG Commissioning services for the prevention of <i>cardiovascular disease</i> CMG45 now used UK-wide. In 2008, a £2m NHS grant established the Liverpool Institute for</p>

Impact template (REF3a)

Health Inequalities Research (LivHIR) at the University to undertake high quality evaluations to support local action to reduce health inequalities. More than 20 local projects have benefited community services and infrastructures, informed commissioning and underpinned our recent successful CLAHRC bid.

At the national and international levels: our approach is to actively encourage and reward research staff to become an integral part of the process of public health policy and strategy formulation, take up invitations to be expert advisors and sit on policy development panels. Our members advising **NICE** and helping develop clinical and public health guidelines and underpinning methodology, include *Alfirevic, Capewell, Dowrick, Gabbay, Gamble, Neilson, Tudur-Smith, Weeks, and Williamson*. These influential and beneficial guidelines now span on a vast array of areas including: cardiovascular prevention; community engagement; sickness certification and incapacity; schizophrenia and bipolar disorder; depression; depression in people with chronic health problems; epilepsy and women's health; as well as **WHO** guidelines on indoor air quality; mental health; induction of labour and postpartum haemorrhage.

Members and their work have informed national and international public health strategies, including briefings to ministers, MPs, select committees, parliamentary fora and UK government policy development on health inequalities; mental health services; return-to-work strategies; public and patient involvement; and end of life care. They have also informed WHO and EU strategies on social determinants of health; food policy; the care of pregnant women; and reducing health inequalities, plus contributions to NGO reports on diet (European Heart Network and MEPs); sugar taxes (Sustain) and transfats (National Heart Forum) .

All six research groups have international impact. For instance, the WHO Collaborating Centres for Policy Research on Social Determinants of Health, and Research and Research Synthesis in Reproductive Health magnify these international impacts by hosting meetings, research collaborations and high impact reports. We have particularly strong links with the Cochrane Collaboration. We host three Cochrane Review groups (Epilepsy, Cystic Fibrosis and Genetic Disorders, and Pregnancy and Childbirth). The latter includes WHO staff as editors, creating a seamless flow from the University's clinical trial outputs, through research synthesis to WHO policies; UN Millennium Development Goal is 5A – to reduce the maternal mortality ratio by $\frac{3}{4}$ - remains a key strategic focus of the group (eg *Weeks* and *Alfirevic's* 'Release Trial', completed in 2008 and published in 2010, with results used to inform WHO guidelines on postpartum haemorrhage 2009, and the updated Cochrane review (2011).

Our strategy also includes secondment of research leaders to leading policy development organisations and field work in low resource settings e.g., Bruce's secondment to WHO Geneva since 2011 has supported the development of the influential WHO strategy on physical environment, notably the new WHO Guidelines on indoor air quality, and Dowrick is now advising WHO on global primary care implementation of its mental health gap programme 2013-2020. Both are now being rolled out in more than 50 low and middle-income countries. Weeks has been supported with internal pump-priming funds to set up Sanyu Africa Research Institute in Mbale, Uganda. This unit led the research into safe community distribution of misoprostol for prevention of postpartum haemorrhage – the results are being used by WHO and the Ugandan government to change guidelines both in Uganda and internationally.

All our research groups have close working relationship with the University's Corporate Communications team, which gives us the opportunity to maximise our research profile through engagement with the media and wider public. This is illustrated by the vast coverage given to Watkins and Jacoby's 2008 'rural idyll' study, and Barr's economic recession and suicides paper (BMJ 2012). The 2012 BBC2 documentaries featuring Capewell's work on obesity, the activities of the food industry and government food policy, generated six additional press, radio and television interviews. Public awareness has increased year on year.

Joining forces in a more comprehensive public health research effort has helped to achieve wider impact of our work. Examples include membership of the DoH Public Health Research Consortium (2005-2016), funded by the DoH to inform national policy directly, and membership of the NIHR School of Public Health Research (£25m, 2012-2017) to carry out applied evaluative research of immediate relevance to national and local public health practitioners. This led to new public-facing programmes including the £5m Health e-Research Centre (HeRC) and £20m NW Coast CLAHRC (with strands explicitly addressing inequalities, and public and patient involvement).

c. Strategy and plans

Emphasis on impact progress and success has increased significantly since 2008 and is carefully monitored and formally celebrated in departmental and Institute settings. Impact is also routinely considered in individual annual reviews (PDRs) which focus on personal development, as well as use of secondment and is considered in assessments for staff progression at all levels. Our **dissemination strategy** explicitly aims to maximise impact focus, by reinforcing and extending our strong infrastructure and policies to engage public health policy and practice communities at all levels from local to global. **We will** invest in and expand the R&D units that successfully support our impact approach, including LPHO, IMPACT, LivHIR and now CLAHRC (described above). Furthermore, the Clinical Research Unit (CRU) in Liverpool has become the first NHS facility in England to be granted MHRA Accreditation for early clinical trials of some of the newest prototype treatments. Building on earlier success and experience, in 2014, **we plan** to obtain our third WHO Collaborating Centre, one supporting food policy work. This would facilitate the direct transfer of our innovative research evidence directly into WHO policy advice to 53 European countries. We will also encourage additional direct engagement with the public health policy-making world through service on policy and strategy formulation bodies. Our MRC North West Hub for Trials Methodology Research **will continue** to link with our Cochrane Review groups and provide a world-class environment for conducting methodological research, further promoting The COMET (Core Outcome Measures in Effectiveness Trials) Initiative with its world-wide benefits and impacts on WHO, NICE Guidelines and the NIHR HTA funding application process.

Maximising the sustainability of our major research programmes represents an important aspect of our approach to impact. Sustainability means prioritising further expansion of our successful portfolio of NIHR/MRC/EU-funded programmes, through support and empowerment of research team leaders. Key themes include cardiovascular prevention; mental health; urban health indicators, international maternal and children's health, epilepsy trials methodology research and methodologies for evaluating natural policy experiments for their impact on the social determinants of inequalities in health. Our strategy aligns powerfully to the Faculty and University approaches to maximise synergies with both local and multinational businesses. Pump-priming funding for business links includes a University 'KE voucher' scheme with recent awards going to two of our research fellows, spreading impact activity beyond academic staff to a broader research community.

d. Relationship to case studies

The selection of the case studies demonstrates the commitment by the University to contribute to impact that reflects the full range of public health and health services research activities: impact on clinical care and health care services; on national policy and NICE guidelines; on WHO policy, and on health in low and middle income countries. All four case studies owed their origins to insights from research carried out before 2008. The University's approach has enhanced impact over the past five years by supporting activities including: funding allocation, study leave, workload allowances and in highlighting the reach and significance of the resulting impacts.

The selected case studies have benefited from targeted University support in a number of ways. Weeks has received a professorial funding package to set up staff research units in Liverpool (The Sanyu Unit) and Uganda (Sanyu Africa Research Institute) to facilitate on-going collaborative research and dissemination. The funds have been used to rent property, employ international and local staff to administer the units, run scoping studies, and travel locally and internationally. Capewell was given six months research leave to build international collaborations around the IMPACT Model. Bruce was granted a two year secondment to WHO to maximise evidence-policy integration and facilitate development of indoor air pollution guidelines.

The case studies have also powerfully informed our future approach to impact. The process from research insights to significant impact can take many years. It thus represents a substantial investment of time and energy for those individuals and groups involved, which requires recognition, support, reward and evaluation. Success includes influencing other outstanding researchers to commit time on creating impact, and seeing this investment as integral to our overall impact strategy, one that aims to benefit individuals, communities and entire populations.