Institution: University of Leicester

Unit of Assessment: UoA2 Public Health, Health Services and Primary Care

a. Context

The Research groups comprising this Unit of Assessment (Department of Health Sciences) are:

- **Biostatistics** which develops and uses methods for meta-analysis and synthesis of evidence, and develops and applies appropriately realistic and (if necessary) complex models in health services research and health technology assessment.
- **Genetic Epidemiology and Bioinformatics** which investigates the genetic and environmental determinants of complex diseases, and develops statistical methodologies for studying the genetic and environmental determinants of complex diseases.
- **TIMMS** (The Infant Mortality & Morbidity Studies) which investigates the causes, consequences, and management of morbidity and mortality of the fetus, infant, and child related to pregnancy, delivery, infancy and childhood in defined populations.
- **Primary Care** which develops the evidence base in primary care and at its interface with secondary care and public health, through research and training.
- **SAPPHIRE** (Social Science APPlied to Healthcare Improvement REsearch) which uses and develops social science theory and methods to explore important questions in the field of health, particularly quality and patient safety.
- **Diabetes** which develops and assesses diabetes education and self-management programmes for people with newly diagnosed type 2 diabetes mellitus.

Over the last decade the groups have evolved so that their research activity links not only to strengths within the University as recognised through its themes but, more importantly, to a range of outside organisations / user groups / beneficiaries. Thus the key audiences for the groups collectively are:

- managers and practitioners in the NHS;
- NICE;
- the Healthcare Quality Improvement Partnership (HQIP);
- Commissioners;
- local and national policymakers such as the Department of Health;
- professional societies, royal colleges, and charities;
- international bodies and non-governmental organisations (NGOs); pharmaceutical companies; schools; and
- the public, both as patients in terms of their care and management and in terms of partners in research.

b. Approach to impact

The groups, which interact and meet collectively on a regular basis, have recognised the importance of establishing scientific credibility by publishing in the relevant world-leading journals as a vehicle to deliver impact. The University's communications team has been instrumental in disseminating key messages via national media where findings have been of relevance to a wide audience. A range of approaches have emerged in terms of converting research findings into clear, practical messages communicated in easily accessible formats suitable for the relevant target audience. The University's Enterprise and Business Development Office (EBDO) has been helpful in establishing business ties and there are strong links between the University and the full range of local health services.

Each of the groups has either developed relationships or occupied influential roles within key organisations relevant to their area of research. The exact approach adopted and range of interactions established has varied depending on who the individual groups have perceived their target audience to be.

At the **individual patient level** the Diabetes group has worked extremely hard at being close to the patient agenda in terms of routine management and self-help. They also have a particular awareness of ethnic issues (type 2 diabetes is particularly common in the South Asian population). The group has close involvement with the relevant national policy forums: **Khunti** chaired the work of the **NICE** group on preventing type 2 diabetes, and was co-opted onto the **NICE** Public Health Advisory Committee on preventing ill health and premature death among adults from black, Asian and other minority ethnic groups in the UK. The Diabetes group's genuinely patient-centred approach has delivered a range of interventions that have been of help to **patients** around the world such as the Walking Away from Diabetes project, implemented across England, Gibraltar, Ireland and Australia. The Diabetes Education and Self-Management for On-going and Newly Diagnosed (DESMOND) programme (**Davies, Khunti**) has been widely introduced across the UK and is seen as a model for education and self-management of diabetes.

However, as would be expected with this UoA, most groups have targeted impact at either **commissioners or policy makers**. Primary Care has had a major role in the Collaboration for Leadership in Applied Health Research and Care for Leicester Northamptonshire and Rutland (CLAHRC-LNR). This is one of nine CLAHRCs set up in 2008 to conduct applied health research, translating research findings into improved outcomes for patients. As a result the group has built extensive interactions with **commissioning teams**, **secondary care providers and general practitioners** in order to implement available evidence regarding best practice and improve care for **patients**. The researchers have developed the concept of Co-ordinators - CLAHRC-funded staff working inside partner **NHS Trusts** - to facilitate knowledge exchange between organisations. One example of the success of the group's translational work is the IMPAKT (Improving Patient care and Awareness of Kidney disease progression Together) tool which has been implemented in over 205 **GP practices** and 19 **PCTs**, both locally and in Birmingham, Bradford, North Yorkshire and Wales. The role of the Diabetes group in CLAHRC-LNR has undoubtedly facilitated the translation of that group's findings into practice by way of **commissioning**.

The work of the SAPPHIRE group focuses heavily on the patient experience, quality and safety. The approach to impact has targeted **policy makers** with various members of the group occupying influential positions on national committees (including **INVOLVE, the National Advisory Group on the Safety of Patients in England** – **Dixon-Woods**, chaired by Don Berwick, and a secondment to the health policy team in the **Cabinet Office** - **Armstrong**) and editorial boards (BMJ Quality and Safety and Family Practice). Its members belong to a range of formal networks (the Health Foundation's Improvement Science Development Group) as well as multiple more informal networks of contacts built up over years of engagement with policy and practice communities. Targeted press releases and engagement with the mass media are used to publicise research findings. Social media, including Twitter and contributions to blogs, further stimulate debate and individually engage the relevant audiences with SAPPHIRE's work.

Engagement with **policy makers and commissioners** has also been central to the approach to impact taken by the TIMMS group. This has involved interaction with a wide variety of organisations and groups for whom their research outputs are relevant including: the **Department of Health, Parliamentary Committees, HQIP, national and local commissioners, clinical networks, individual Trusts, patient groups and charities** (in particular **Sands**, the stillbirth & neonatal death charity**,** and **Bliss**, the charity for premature and special-care babies). Engagement has varied but has included providing evidence (**House of Commons**), contract research (**HQIP and Commissioners**), advice on care quality reports (**networks and Trusts**) and developing research (**patient groups and charities**). The group has also been involved in local and national research delivery networks (Medicines for Children Research Network, relevant theme leads for the Comprehensive Local Research Network) and clinical studies groups (Medicines for Children Research Network and the College of Obstetrics and Gynaecology - preterm birth).

NICE clearly has a major impact in terms of **NHS policy** and Biostatistics has established a long-term relationship based on the work of the group in providing the key elements of the information synthesis methodology used in **NICE's** assessment of treatments. In addition **Abrams** is a member **of NICE's appraisals committee**. This on-going relationship has led to a variety of contracts with major **pharmaceutical companies** (GSK, Janssen, Johnson & Johnson, Novartis, Pfizer and Roche). As well as contract research the Biostatistics group has also been involved in specialist training of a variety of **pharmaceutical companies and research organisations** regarding the analytical methodologies its researchers have developed, including mixed treatment comparisons / network meta-analysis (Pfizer & ABPI), treatment switching (Roche), as well as to other government agencies both nationally (**NICE**), and internationally (**AHRQ in the US and Ministry of Health in Brazil**).

Interaction with **pharmaceutical companies** has been a major part of the strategy employed by Genetic Epidemiology and Bioinformatics. This has involved collaboration with major pharmaceutical companies in several major research consortia (BIOSTAT, AirProm, COPMAP MRC/ABPI consortium).

A number of the groups have also sought wider involvement. For example, a member of TIMMS is involved in projects in Africa via the **University's link with Gondar in Ethiopia** and one researcher from SAPPHIRE is advising **WHO'**s African Partnerships for Patient Safety on better implementation of the Surgical Safety Checklist. The latter group also hosts international Fellows and other visitors. Both Genetic Epidemiology and TIMMS run **school** outreach programmes addressing influences on health and disease and awareness of science.

c. Strategy and plans

Although the groups have well-established approaches to impact, all have plans to enhance these whilst acknowledging that their target audiences are likely to remain broadly the same.

The Unit as a whole plans to build on collaborations with central and local health Commissioners and providers so that there can be a direct link between evidence and commissioning. This will take various forms e.g. setting up an Improvement Science Unit with a local teaching hospital (SAPPHIRE) and, more generally, providing an evidence base for safety and quality improvement that will influence national education and training agendas as determined by regulatory agencies and the royal colleges. Similarly TIMMS has recently taken on the contract for HQIP's Maternal Newborn and Infant Clinical Outcome Review Programme (monitoring national early-life mortality rates) involving engagement with all aspects of quality in relation to UK maternity care. This work has led to wider involvement with relevant national charities such as the Multiple Birth Foundation who now wish to develop a joint research strategy. The Primary Care team was recently successful in bidding for further CLAHRC funding and plan to extend their concept of 'co-ordinators' by placing increased numbers of academic staff in GP practices to act as 'knowledge brokers' as well building similar links in collaboration with the Clinical Commissioning Groups (CCGs).

The University has recently developed an enterprise strategy and this will be of particular help to those teams (Biostatistics and Genetic Epidemiology and Bioinformatics) who wish to continue to build industry links. Innovative developments in that regard include newly awarded EU-EFPIA (European Federation of Pharmaceutical Industries and Associations) funding with the overall aim of helping pharmaceutical R&D and healthcare decision-makers to better understand how real-world data and analytical techniques can be used to improve the relevance of knowledge generated during drug development.

The Diabetes group already has a wide range of patient-centred strategies to ensure implementation and impact of their work and will build on these. For example, the successful dissemination of the Leicester Diabetes Self-Assessment risk tool which was promoted in Tesco and Boots in collaboration with Diabetes UK has led to further collaboration with Boots, and there are now plans to roll out a Diabetes Bundle for GPs.

d. Relationship to case studies

The three case studies presented for this unit of assessment map directly to the strategies outlined above. The case from Biostatistics is a direct consequence of the group's on-going relationship with NICE. The case from the Diabetes team reflects work resulting from the group's engagement with NHS priorities in terms of the major workload challenges, and the agenda of patients themselves (Diabetes UK), that is, the need to detect diabetes early in order to prevent the development of complications. The ECMO case from TIMMS relates to work started in the 1990s. As one of the earliest examples of direct engagement between Commissioners and academics in order to assess a new technology prior to 'creep' into practice, it provided a template for that group's approach to engagement in subsequent years.