



# Review of population health research and health services research in Ireland

VOLUME 2

Mapping Studies and Appendices

Health Research Board

**2011**



# Review of population health research and health services research in Ireland

## VOLUME 2

### MAPPING STUDY AND APPENDICES

Health Research Board

2011



VOLUME 1 OF THIS REPORT, WHICH CONTAINS AN ANALYSIS OF THE OUTCOMES OF THE MAPPING STUDIES ON POPULATION HEALTH RESEARCH AND HEALTH SERVICES RESEARCH IN IRELAND, AND SUGGESTED NEXT STEPS, IS AVAILABLE TO DOWNLOAD FROM THE HEALTH RESEARCH BOARD WEB SITE [WWW.HRB.IE](http://WWW.HRB.IE)

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# Foreword

Since late 2009, with the publication of its' *Strategic Business Plan 2010-2014*, the HRB has been on a journey to develop a coherent clinical research system and capacity for population health research (PHR) and health services research (HSR) in Ireland. This review is an important part of that journey. It provides the evidence and analysis that underpins the HRB's plans to strengthen the capacity of the Irish health research system, both university and health sector based, to undertake high quality, relevant PHR and HSR that have a real impact on the health of Irish people and on the way that health care is delivered to them.



Arising from this review, the HRB has developed a plan for its funding activities in support of PHR and HSR in the coming years. Implementation of this plan has been moving at a pace over the last twelve months. Many current schemes have been reoriented to reflect this changed focus and a number of innovative new initiatives in the PHR and HSR sphere will be rolled out in the coming year.

We are doing this because we believe it is important. It can provide the evidence to help Irish policy makers, health services providers and decision-makers, and health care professionals respond successfully to the significant challenges in health that will demand their attention over the coming years. These challenges include changing the way services are delivered, evaluating the health care needs of the population and measuring the relative effectiveness of interventions. They are driven by factors such as Ireland's growing and ageing population; people's changing expectations about their entitlement to services; and the spiralling costs of advances in health care technology.

These challenges are driven by the strategic ambitions of the Department of Health and the Health Services Executive to create a health service that:

- ✓ puts patient safety and quality of service at the heart of its activities
- ✓ prevents and manages chronic diseases in the Irish population
- ✓ promotes and protects the health and wellbeing of children, older people and those with disabilities or mental health problems, all delivered in primary care and community settings
- ✓ explores the linkages between lifestyle, behaviour and health
- ✓ examines the impact of complex population health interventions on health and health equity
- ✓ investigates innovative models of financing of health care

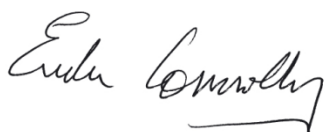
The HSE has also identified the challenge of integrating services across the spectrum from disease prevention through primary and community care to acute hospital care. Addressing these challenges will need a strong evidence base and coherent and integrated strategic planning.

Now, more than ever, we need PHR and HSR evidence to help us address these many challenges. There are strong examples internationally of how PHR and HSR evidence has improved the health of populations and the delivery of their health services. This review examines many of these examples. PHR-driven improvements range from control of infectious diseases resulting from clean water and improved sanitation to recognition of tobacco use as a hazard, from promoting the importance of 'five-a-day' for heart health to community vaccination against annual seasonal influenza. Understanding the effects of these public health initiatives will be increasingly critical as health services are restructured with a focus on cost containment, and as hard decisions are made about where to make investments of public resources.

In the health services, the evidence generated from HSR can help healthcare decision-makers to tackle the challenges they face in a more informed way. Health services researchers conduct studies designed to improve the quality of health care, reduce its cost, evaluate its effectiveness, improve patient safety, decrease medical errors, and broaden access to essential services. Studies range from assessing specific health technologies and approaches to providing care, to evaluating health sector reforms and health care interventions. As health care costs rise and the quest for value for money increases, the role of HSR becomes more and more crucial.

The evidence is clear. Investment in PHR and HSR can deliver real benefits for the well-being of Irish people and the effectiveness, efficiency and equity of the health services on which they depend. The identification of specific strategic goals within the HRB *Strategic Business Plan*, the existence of a working *Action Plan for Health Research*, the on-going reconfiguration of the healthcare and higher education sectors, the government's Innovation Economy strategy, and the planned reform of national scientific research funding, all represent opportunities to raise the profile of PHR and HSR and highlight the critical role that research-informed health policy and practice should play in modern Ireland.

The review that follows describes clearly the challenges we must address in the coming years, with regard to building a strong, high-quality PHR and HSR system in Ireland. It also highlights the strengths and opportunities of which we should take advantage. The HRB will use this review as a roadmap to advance the implementation of our strategic goals and to monitor our own progress in this area over the course of our strategy. We also hope that the findings in the report can inform and provide focus to the *Action Plan for Health Research*, as the Health Research Group works to implement relevant recommendations in the coming years.



**Enda Connolly,**  
**Chief Executive**



# Chapter 1 Mapping study objectives and methodology

## 1.1 Introduction

This review is presented in two volumes. Volume 1 examines the factors that influence the level and quality of population health research (PHR) and health services research (HSR) in Ireland, analyses the findings of the mapping studies and identifies the key steps that will be needed to move Ireland forward to a position of strength in these areas. Volume 2 maps the current PHR and HSR landscape in Ireland and is intended to serve as the evidence base for developing a much stronger PHR/HSR system, in terms of its research outputs (peer-reviewed papers and citations), its national impacts (supporting improved policy and practice), its effective organisation (capacity, funding and infrastructure), and the management of its strategic direction (co-ordination and priorities).

This review identifies deficits and weaknesses that are impeding the emergence of an international-quality national system of PHR and HSR, but also highlights the strengths and opportunities of which we should take advantage. and has set out what steps can be taken to improve the current situation.

Arising from this review, and in line with the objectives stated in its strategy, the HRB is developing an implementation plan setting out its priorities for funding PHR and HSR from now until 2014 and beyond. It is hoped that the evidence provided by this review will also contribute to a wider priority setting exercise for health research in Ireland and will assist other stakeholders with a role to play in developing PHR and HSR (research funding providers, research performers, health care professionals and managers, and policy-makers) in developing specific and collaborative actions to ensure that there is organised and sustained support for PHR and HSR similar to other leaders internationally.

## 1.2 Objectives of mapping studies

The overall aim of the mapping studies described in this volume is to support the strategic objectives of the HRB to create a high quality PHR and HSR system in Ireland, as well as to underpin national objectives in the areas of PHR and HSR by:

- establishing a baseline description of research capacity and activity in PHR and HSR in Ireland
- mapping the current strengths and weaknesses of PHR and HSR in Ireland and identifying deficits in these areas that will require attention over the coming years
- assessing the outputs and impacts of current PHR and HSR in Ireland
- providing underpinning evidence for the development of an action plan for capacity and infrastructure development and for rational research investment in PHR and HSR in the coming years

In order to establish a baseline of research capacity in population health and health services research in Ireland, the mapping study attempted to identify the state-of-the art with regards to both the inputs (people, funding, infrastructure) and outputs (research outputs, policy impacts, networks) through a suite of surveys administered to research performers and funding providers, literature reviews, bibliometric analysis and mining of relevant websites.

## 1.3 Definition of PHR and HSR used for the mapping studies

For the purposes of this review the definitions used by the HRB research classification system have served as a basis for defining the scope of activity in PHR and HSR with modifications informed by the SPHERE (Strengthening Public Health Research in Europe) Project<sup>1</sup>, and the definition of HSR developed by Lohr and Steinwachs (2002)<sup>2</sup> as follows:

### 1.3.1 Population health research

*Population health research (PHR) seeks to improve people's health through a better understanding of the ways in which social, environmental, occupational and economic factors can influence health status and ultimately reduce the numbers seeking acute medical interventions or requiring care for chronic conditions.*

PHR is a relatively new term that is considered to include, but be distinct from, traditional definitions of public health, health promotion and social epidemiology. In general, it can be viewed as a field which analyses health outcomes, patterns of health determinants and policy interventions that link them. The populations involved are often communities or geographic regions but they can also be other groups such as employees, ethnic groups, prisoners or disabled persons. The 'determinants' include medical care, public health interventions, aspects of social environment (income, education, employment, social support, culture) and of physical environment (urban design, clean air and water), genetics and individual behaviour. As these rarely operate independently, PHR is concerned with interactions and patterns.

### 1.3.2 Health services research

*Health Services Research (HSR) is a broad field of research that seeks to improve the efficiency and effectiveness of healthcare systems through changes to practice and policy. Health services research is an interdisciplinary<sup>3</sup> field of scientific investigation that studies how social factors, financial systems, organisational structures and processes, health technologies and personal behaviours affect access to health care, the quality and costs of health care and ultimately health and well-being.*

HSR examines how people get access to health care, how much that care costs and what happens as a result of this care. Its primary goals are to identify the most effective ways to organise, manage, finance and deliver high quality care; to reduce medical errors and to improve patient safety. The roots of HSR lie deeply in the world of applied science somewhere at the intersection of public health, public and health administration, policy analysis, community health, and traditional academic disciplines like economics, sociology and political science. While grounded in theory, HSR must be research that can be applied by health professionals, health managers and all others who make decisions or deliver care. HSR requires many disciplines to deal with pragmatic issues of quality, access, cost, efficacy and efficiency. The research domains for HSR are individuals, families, organisations, institutions, communities and populations. If a researcher is studying something that affects health care or is

<sup>1</sup> SPHERE Project: <http://www.ucl.ac.uk/public-health/sphere/spherehome.htm>

<sup>2</sup> Lohr KN and Steinwachs DM (2002) *Health services research: an evolving definition of the field*. Health Serv. Res. 37(1): 7-9.

<sup>3</sup> The term 'interdisciplinary' is used to refer to all three categories of multi-, inter and trans-disciplinary research.

affected by healthcare<sup>4</sup>, then that researcher is doing HSR. This broad definition implies that HSR can be done by those who don't normally consider themselves health services researchers.

### 1.3.3 Rationale for considering PHR and HSR in the same review

This review considers PHR and HSR within the one report. A number of factors were considered in doing this;

- they are both grounded in science
- they share inter-disciplinary approaches; improvements in PHR and HSR require the attention and actions of multiple actors (legislators, policy makers, managers, providers, clinicians, individuals, researchers)
- they need to be linked to policy, practice and decision making and as such both need to pay particular attention to the knowledge transfer and partnerships that exist between all actors in order for positive change to occur
- they both have a need for dynamic adaptation to new problems being placed on their agendas
- those involved in PHR are among the many actors engaging in HSR - this 'blurring' or overlap is particularly evident in a relatively small HSR and PHR research community in Ireland

It is, however, acknowledged that the needs of, and issues tackled by researchers in PHR and HSR are different and where appropriate these are considered separately.

## 1.4 Methodological approach

This review used a number of methods to compile information on the state-of-the-art of research activity, capacity, funding, infrastructure, and outputs in the areas of PHR and HSR.

A number of groups were identified as being of primary interest to this review, namely:

1. Research funding providers who support health research in general and PHR and/or HSR in particular
2. Academic departments/units/centres whose core business is research in PHR and/or HSR, as well as cognate academic units, private research organisations and statutory bodies conducting some research in the area of PHR and HSR, even where this is not their core business
3. Personnel who undertake research in PHR and/or HSR, who may or may not be affiliated with the academic departments and organisations identified above

Survey instruments were developed for each group, which sought information relevant to the activities of that group and which were administered either by email or on-line, as appropriate. The purpose, type and recipients of each survey are described below.

1. Surveys of research funding providers and research performers were conducted to map:
  - the Irish health funding landscape and identify the level and focus of PHR and HSR being supported
  - the capacity, output and types of research being conducted in the Higher Education sector in PHR and HSR in Ireland

<sup>4</sup> In this review **healthcare** refers to the system, while **health care** refers to actions by people who work in the system and by patients, that result in the delivery or consumption of services, respectively.

- the use and impact of research evidence in policy and practice development
2. The outputs of research activity in PHR and HSR were compared with international norms through a bibliometric analysis and a review of the grey literature being produced in the areas of PHR and HSR was conducted.
  3. A SWOT analysis was conducted with the major academic units involved in PHR and HSR, which looked at perceived strengths, opportunities, weaknesses and threats/barriers that exist in PHR and HSR in Ireland. The outcomes of the SWOT are not presented as a discrete section in this review, since the responses looked at departmental and local as well as national strengths, weaknesses, opportunities and threats. However, the results of the SWOT analysis inform a number of chapters in this review.
  4. Finally, the International Steering Group for this review, which had membership from the major national strategic stakeholders (Department of Health [DoH]; formerly the Department of Health and Children [DoHC], Health Services Executive [HSE], Health Information and Quality Authority [HIQA]) as well as national and international experts on various aspects of PHR and HSR, assisted in the design and analysis of the mapping studies and where appropriate, suggested next steps that would be necessary for further progress.

### 1.4.1 Research activities within the scope of the review

The methodology for defining the scope of research activity used by the Swedish Inventory of Public Health (2005)<sup>5</sup> was adapted to an Irish context for these mapping studies. This operational definition divides research activity within the spheres of PHR and HSR into four broad categories of causes (theory/method category), measures (aetiology/incidence category), monitoring (intervention category) and knowledge dissemination in a public health context (policy for health category). The operational definition of scope excluded:

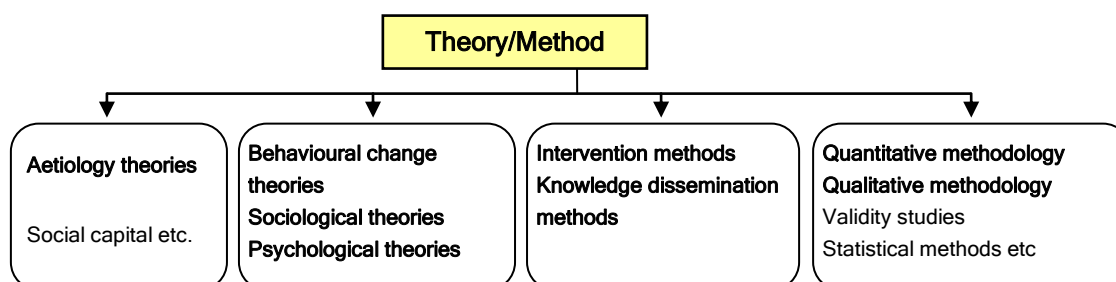
- Purely biomedical, toxicological, microbiological, or general pharmacological research
- Animal experiments
- Physiological, biochemical, pathological, psychological or social processes not linked to prevention or health care
- Purely clinical research activity or treatments focused on mechanisms and hosts
- Clinical trials (other than randomised control trials)
- Research into diagnostics or pathology not linked to prevention
- Pure social welfare research not linked to public health
- Behavioural science research not linked to health or well-being
- Welfare research with no link to prevention

A particularly valuable element of the Swedish model was that, as a guide to researchers and funders when describing the research they perform or support, it provided examples of the types of studies that should be included and also the type of studies that should be excluded. The operational definition of scope was also used to include/exclude publications by researchers identified during the survey of research performers, and to guide the choice of journals included within the bibliometric analysis.

<sup>5</sup> Källestål C and Swanberg I (2005). *Part 2: An inventory of Swedish public health research*. Scandinavian Journal of Public Health. 33(Supp 65), 17-45.



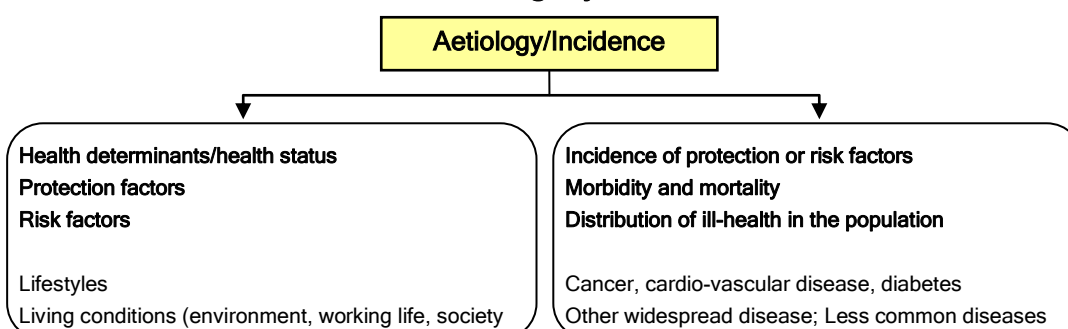
## Category 1



### Examples of studies included:

- 'Evaluation studies'
- Measurement methods (technical, chemical, physical) for exposure surveys
- Qualitative research methods
- Participatory/action research methods
- Evaluation of intervention methods (strategies, structures or processes)
- Methods of disseminating knowledge about health status to decision-makers e.g. in the form of public health reports, medical care needs analysis, health and medical care reports
- Methods of disseminating knowledge to actors about intervention methods and monitoring

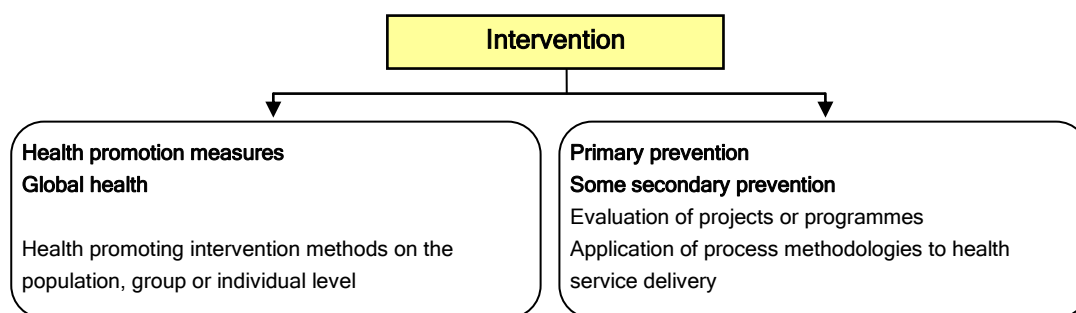
## Category 2



### Examples of studies included:

- Link between risk factor exposure and disease contraction, risk estimates, survey of risk groups, cohort studies, case-control studies
- Risk factors in the population (including genetic risk factors); quality of life in the population
- Survey of protection and risk factors in work environments (including health and medical care)
- Protection and risk factors in lifestyles such as eating habits, physical activity, tobacco, alcohol and/or drug use, risk taking, dental health care and sex and personal relationships
- Evidence-based practice in relation to patient orientated research
- Epidemiological methods in the context of patient care and quality improvement at the individual, group and population level
- Research into the significance of healthcare systems for health
- Screening in health and medical care e.g. mammography, cervical cancer, cholesterol,
- Studies in which hypertension, hypercholesterolaemia or obesity are seen as risk factors
- Antibiotic resistance as a risk factor
- 'Attitude to health'; population's attitude to lifestyle and prevention (not patient's experience of disease)
- Knowledge about health status and health habits in the population

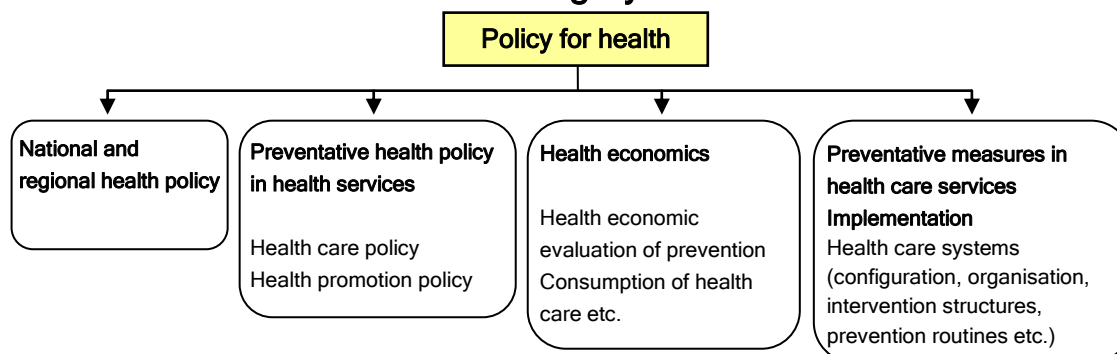
### Category 3



#### Examples of studies included:

- Effects of primary prevention on behaviours, health habits, morbidity etc
- Effects of secondary prevention among individuals or groups
- Rehabilitation and evaluation of treatment effects
- Methods of primary or certain secondary prevention on the population, group or individual level
- Patient experience of care services
- Nursing care research with a population health focus
- Prevention using pharmacological or surgical methods
- Development and evaluation of health care interventions
- Evaluation of complex interventions
- Application of complex adaptive systems, process engineering and workflow analysis to health services delivery
- Work on community health development

### Category 4



#### Examples of studies included:

- Attitudes to national health promotion policies
- Extent and costs: Outpatient and in-patient health care and social insurance consumption in various diagnostic groups
- Resource allocation in the healthcare system
- Health technology assessment
- Implementation, equity and health services governance research
- Preventative structures and measure in healthcare services.
- Evaluation of structures for health-promotion and prevention measures in mainstream municipality e.g. child day-care, schools, elderly care, social services, environment/health
- Evaluation of processes such as health impact assessments, welfare audits, prevention needs analysis, health policy objectives, priorities, management, monitoring of indicators etc.

- Health care needs analysis, accessibility, health care chain, drugs consumption and quality of health care as it relates to prevention
- Service configurations contributions to population health

# Chapter 2 Mapping of Irish PHR and HSR capacity

## 2.1 Introduction

This chapter looks at the current capacity to conduct PHR and HSR in Ireland and at training opportunities for those engaged in, or wishing to be engaged in, PHR or HSR. It should be noted that during the mapping study it was not possible to identify all research units or specialist centres outside the higher education system that conduct some research in these areas and their omission in no way reflects their contribution to the areas of PHR and HSR.

Data was collected through three surveys conducted during this review of (i) research-funding providers, (ii) heads of academic units and (iii) PHR and HSR researchers, as well as through mining of higher education institute web pages. Survey findings are described in full in this chapter, and the survey instruments used to collect data are described in Appendices 4.1 - 4.3.

### Key observations:

- Most PHR and HSR in Ireland is conducted in higher education institutions, teaching hospitals and research centres affiliated with them, although a number of independent research organisations, in particular the Institute of Public Health in Ireland and the Economic and Social Sciences Research Institute, are important contributors of PHR and HSR evidence.
- A wide range of academic units undertake some PHR and HSR, and there is a strong interdisciplinary<sup>6</sup> focus in academic units whose core focus is PHR and/or HSR. However, a significant difficulty is the lack of experienced academic staff to supervise post-graduates, provide the taught elements of Graduate programmes in PHR and HSE and to mentor future generations of researchers.
- Areas in which skills deficits were identified include health economics, biostatistics, epidemiology, qualitative skills, randomised control trials methods, intervention research<sup>7</sup>, and health technology assessment.
- Even where health professionals would like to develop a research profile, there is no clear career structure and strategy for staff development in either the higher education sector or the health services sector, which is being worsened by the current capping of staff recruitment and promotion. Very few health professionals have dedicated time set aside for research.
- It would appear that there is a 'branding' issue with HSR in particular, since many clinicians either have difficulty recognising, or do not acknowledge, that their research has PHR and/or HSR orientation or relevance.

<sup>6</sup> The term 'interdisciplinary' is used to refer to all three categories of multi-, inter and trans-disciplinary research

<sup>7</sup> **Intervention research** is an emerging field of research in the social sciences that integrates approaches to research which seeks to yield results that can be put to practical use by practitioners, administrators and policy makers (see Rothman J and Thomas EJ (1994)). It focuses on the development of knowledge about interventions, the design and adaption of new and existing interventions and packaging and disseminating knowledge about innovative interventions.

## 2.2 Settings for PHR and HSR

PHR and HSR on the island of Ireland take place in many settings. The response of the funding agencies surveyed during this review indicated that the bulk of publicly funded research expenditure is in the higher education sector and in university-affiliated hospitals. This finding is reflected in the distribution of PHR and HSR researchers in these organisations. Of the 604 researchers identified by August 2009, whose research activities fell within the scope of this review, 78 per cent worked primarily in university departments or affiliated research centres while a further 4.8 per cent worked in Institutes of Technology or affiliated research centres. Hospitals (teaching and other) and their affiliated research centres accounted for 5.1 per cent of researchers.

PHR and HSR also take place outside of the higher education sector, although such research is often intended as an evidence-support to policy within those organisations rather than as a core activity. Independent research organisations, in particular the Economic and Social Research Institute (ESRI) and the Institute of Public Health in Ireland (IPH), accounted for 4 per cent of all identified researchers. A further 3.6 per cent of researchers were affiliated with the Royal College of Surgeons in Ireland (RCSI), a private medical school, two national disease registries for cancer and cystic fibrosis and the Irish Council for General Practice. Government departments and statutory agencies (including the HRB and the HSE) accounted for 4.5 per cent of researchers. The number of researchers identified in many of these organisations is likely to be a gross underestimation of the actual numbers engaged in some level of research. However, identifying staff with significant research activity, especially within the HSE, was not possible.

### 2.2.1 Academic disciplines supporting PHR and HSR

Section 2.4 presents a summary of the activities of higher education organisations and a fuller narrative description of their remit and activities. From the work undertaken to identify PHR and HSR research activity in the higher education sector in Ireland a number of observations could be made:

- Six of the ten universities on the island of Ireland (NUI Galway, Trinity College Dublin [TCD], University College Dublin [UCD], University College Cork [UCC], RCSI, and Queens University Belfast [QUB]) have dedicated academic departments/schools whose specific research focus is in HSR and/or PHR or disciplines within this broad field.
- Outside the core PHR/HSR departments, many individuals or groups of academics within a diverse range of departments have focused their research on health services/health systems research or a discipline within PHR. These include business and economics, psychology, sociology, geography, mathematics and statistics, physiotherapy, pharmacology, agriculture and so on.
- Centres of excellence have emerged in a number of universities in disciplines of particular relevance to PHR and HSR including health economics, health policy, global health, biostatistics, health systems/management, health geography, health psychology, oral health, and food and health.
- Five medical schools in the Republic of Ireland were contacted during this review. With the exception of their Departments of General Practice, only one of them (RCSI) indicated that it considered its research activities to be particularly PHR- or HSR-focused. This perception conflicts with an examination of the HRB funding portfolio from 2000 to 2009, which identified that in addition to awards made to departments of General Practice, a further 34 awards were made to academic medical departments in the Republic of Ireland for research that the HRB would define as PHR- and/or HSR-focused. This suggests that many medical disciplines either

do not recognise or do not acknowledge that their research can have a PHR and/or HSR orientation.

## 2.2.2 Non-higher education research centres and organisations involved in performing PHR and HSR

While most research activity in PHR and HSR takes place within the higher education sector, there are a number of organisations outside of this sector that play a key role in providing high quality PHR and HSR evidence to government, the health services and civil society. Section 2.5 presents a summary of the activities of these organisations and a fuller narrative description of their remit and activities.

From the work undertaken in this review to identify PHR and HSR research activity outside the higher education sector in Ireland a number of observations could be made:

- The ESRI and the IPH emerged as the two independent research organisations with the most significant activity in PHR and HSR. The ESRI plays an important role in providing evidence and analysis for policy in the PHR and HSR. The IPH promotes cooperation for public health on the island of Ireland through three key programmes in public health intelligence, building public health capacity and policy and programme development and evaluation. Both of these organisations receive funding support from the DoH, and in the case of the IPH from the Northern Ireland Department of Health.
- A number of smaller organisations (e.g. the Institute for a Tobacco-free Society, the National Cancer Registry) also conduct some research in the areas of PHR and/or HSR and their research outputs contribute to the formation of national health promotion policy.
- A number of statutory agencies (including the HRB), the Health Information and Quality Authority, the DoH and other government departments and voluntary organisations support research either through in-house activity or through commissioning of research from the higher education sector and others.
- Within the HSE there is PHR and HSR capacity through the consultants in public health, the Health Promotion Units and other health professionals with training in this area, The HSE Health Intelligence Unit collects national data to assist in policy and planning of service need and provision. The HSE also supports a centre based at James Connolly Memorial Hospital (National Centre for Pharmacoeconomics) to provide it with Health Technology Assessment (HTA) evidence.

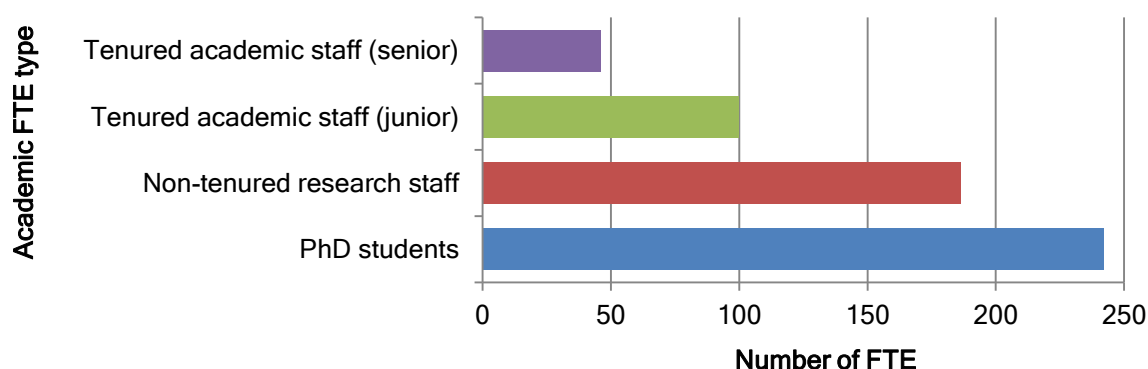
## 2.3 Distribution of researcher FTE in the higher education sector

In the higher education sector, research is conducted by the full spectrum of academic positions - PhD students, fixed-term contract researchers at all levels from research assistant to senior research fellow, tenured academic staff, and clinicians with an academic element to their post. Outside the higher education sector, the spectrum of people involved in research is more limited. In these non-higher education organisations research is conducted by health professionals within the health services, principal officers in government departments and professional researchers in organisations such as the ESRI and IPH.

At first glance, the number of active academic staff in the higher education sector identified by the review might suggest that Ireland's research needs in these areas are being served adequately.

However, research represents only one component of the workload of academic staff, with teaching and administration accounting for much of their time. To obtain a more realistic picture of the relevant research capacity in the higher education sector, Figure 2.1 examines the distribution of research capacity based on research full time equivalent (FTE), as per the methodology employed by Forfás in *The Higher Education R&D Survey 2006*<sup>8</sup>.

This approach to measuring research capacity acknowledges that tenured academic staff and staff employed in administrative and technical positions should be assigned less than one research FTE, while staff employed on research contracts can be counted as one research FTE. NUI Galway consolidated data for 2008 would suggest that 0.34 research FTE is an appropriate averaged allocation of time spent on research by academic staff<sup>9</sup>, which takes into account variation both by discipline and individual staff member. In many instances, where departments have small numbers of academic staff to deliver large teaching loads, or where clinical duties compete with academic ones, this allocation will be an overestimation of available research time.



**Figure 2.1** Distribution of research full time equivalents (FTEs) across career stages of personnel involved in PHR and HSR in the higher education sector

The distribution of researcher FTEs would suggest that there is an imbalance between experienced and inexperienced researchers and between those holding tenured and non-tenured positions, with too few experienced and senior academic researchers in the system at present. This imbalance may impede the capacity of senior academics to mentor the next generation of PHR and HSR researchers. This issue was, in fact, identified as a significant weakness by all of the core academic departments that completed a SWOT analysis for this review.

Unfortunately it was not possible to conduct a similar detailed analysis in the non-higher education sector, so this review can make no comment on whether a similar capacity issue exists outside the universities.

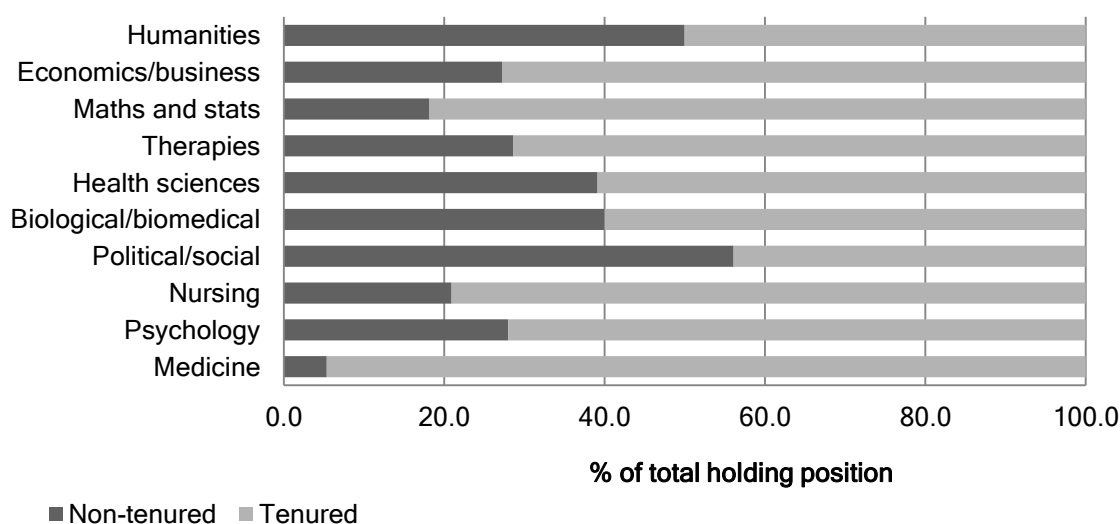
<sup>8</sup> Forfás (2006) *The higher education R&D survey*. [http://www.forfas.ie/media/forfas080314\\_detailed\\_herd\\_2006.pdf](http://www.forfas.ie/media/forfas080314_detailed_herd_2006.pdf)

<sup>9</sup> See [http://www.nuigalway.ie/management\\_accounting/full\\_economic\\_costing.html](http://www.nuigalway.ie/management_accounting/full_economic_costing.html)

### 2.3.1 Implications of the current economic climate for capacity in the higher education sector

In the present economic climate in Ireland, research funding to support non-tenured research staff (those below lecturer level) and to train PhD students will become increasingly difficult to secure. The proliferation of short-term contracts for research staff is also a concern. Lack of reasonable duration salary support for early career researchers limits their ability to consolidate research skills and develop a publication profile. While a flexible contract-based labour market for researchers does provide opportunities for newly emerging researchers, it limits the possibility of retaining and enhancing research experience in the system.

An analysis of the distribution of career stages across the system confirmed that the present ratio of non-tenured to tenured academic staff in many disciplines is high. A cross-tabulation of primary degree held against career stage shows that the balance of tenured to non-tenured staff varies considerably across disciplines (Figure 2.2.).



**Figure 2.2** Cross-tabulation of tenure status against academic discipline of primary degree

Researchers with a social sciences or humanities background who subsequently chose a research career in PHR or HSR appear particularly vulnerable in this regard: over 50 per cent of those surveyed indicated that they currently hold non-tenured positions. Likewise, almost 40 per cent of researchers with a health sciences and biological or biomedical background who progressed to a research career in PHR or HSR indicated that they hold non-tenured positions. Therefore, research capacity in these professions may be subject to shrinkage in the coming years, as research funding decreases. The opportunities for already stretched academic staff to sustain their research activity and maintain publication output could deteriorate significantly.

At the other end of the scale, the vast majority of medical graduates currently hold tenured academic positions or hospital clinical posts. However, it should be born in mind that the research FTE of many of these posts will be low, in particular clinical posts in a hospital setting.

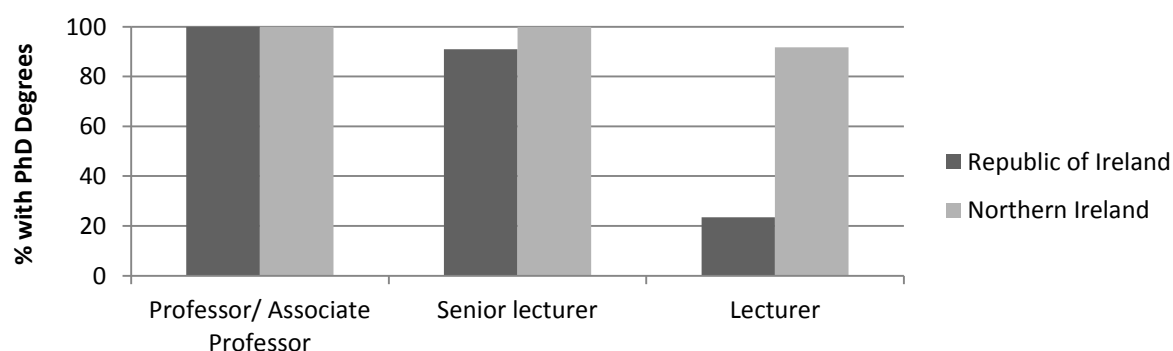


### 2.3.2 Research capacity in Schools of Nursing and Midwifery

Nurses and midwives together constitute the largest professional group of health care providers in Ireland<sup>10</sup> and may, in the future, become a key group in terms of PHR and HSR provision and implementation. Nursing and midwifery research is primarily coordinated through the Schools of Nursing and Midwifery on the Island of Ireland, of which there are seven in the Republic of Ireland (ROI) and two in Northern Ireland (NI).

In contrast to the situation in the UK and Northern Ireland, formation of Schools of Nursing and Midwifery within Republic of Ireland universities and the development of denominated degree courses for nursing and midwifery, and a range of Master's courses in nursing specialisms, is a recent development. As a result, staff in these schools have devoted much effort to curriculum development and the professionalisation of nursing and midwifery.

Therefore, it is unsurprising that compared to their NI colleagues, a relatively small number of staff in ROI Schools of Nursing and Midwifery conduct significant amounts of high-quality research. A lack of research capacity was identified for these schools, with considerably fewer staff in the ROI holding PhD degrees than in NI, in particular at the level of lecturer and, to a lesser extent, senior lecturer, resulting in a shortage of skilled supervisors for PhD students, and a potential weakness in research methodology skills (Figure 2.3). Many lecturers did, however, indicate that they were undertaking a PhD degree, often with international co-supervision, to counter a lack of supervisory capacity locally, which should have an impact on research capacity in this discipline in the future.



**Figure 2.3** Comparison of number of research active staff (PHR and HSR) in 2009 holding PhD degrees in Republic of Ireland and Northern Ireland Schools of Nursing and Midwifery

<sup>10</sup> Department of Health and Children (2000) *National Health Promotion Strategy 2000-2005*. The Stationery Office, Dublin.

## 2.4 Inventory of relevant academic units in higher education institutions

Information on relevant PHR and HSR activity within the higher education sector was collected through a survey of Heads of Unit (see Appendix 4.2 for survey instrument and list of recipients), follow-up with individual HOUs and mining of institution websites for relevant research information.

The following universities provided a response to the survey: Dublin City University (DCU), NUI Galway, NUI Maynooth, Queens University Belfast (QUB), Trinity College Dublin (TCD), University College Cork (UCC), University College Dublin (UCD), University of Limerick (UL) and University of Ulster (UU). In addition, responses were received from a number of Institutes of Technology and relevant research activity for these institutions, where known, is summarised here. The level of detail available is somewhat inconsistent, with some departments providing more detailed information than others on numbers of staff and post-graduate students, funding sources, dates of establishments, departmental structures and educational programmes. Nonetheless, all efforts were made to capture the types of PHR and HSR-relevant activities in train in different departments/units.

In academic units whose primary focus is PHR and/or HSR, it was observed that there was a coherent approach to research, with strands of activity within the unit being channelled and developed through smaller centres or clusters. In academic units in which PHR and/or HSR is not a primary focus, activities in these areas are often driven by individual researchers and may not be integrated into a broader research strategy within the unit or school.

The wide range of researchers from different disciplines involved in PHR and HSR throughout the country is also striking and demonstrates the breadth of disciplines that can contribute to PHR and HSR. However, there is also fragmentation across the higher education system, with few networks linking these researchers to a common purpose. The Joint Epidemiology Departments of Ireland (JEDI) network is a rare example of such linkage, although the level of activity in this network is currently low. The issue of networks is dealt with in more detail in Chapter 8.

### 2.4.1 Dublin City University

The primary setting for PHR and HSR relevant research at Dublin City University (DCU) is the School of Nursing and Midwifery. In addition there is some relevant research taking place within the School of Health and Human Performance and DCU Business School.

**Table 2.4** Summary description of DCU academic units engaged in PHR and HSR

Unit name	Research Themes/Focus in PHR and HSR	National/International engagement/collaboration
School of Nursing & Midwifery	<ul style="list-style-type: none"> <li>• Suicidology &amp; self-harm</li> <li>• Psychosocial impacts &amp; management of illness, disability &amp; loss</li> <li>• Health service organisation &amp; delivery</li> <li>• Psycho-oncology</li> </ul>	<ul style="list-style-type: none"> <li>• International Collaborative of Interdisciplinary Suicide Research</li> <li>• Irish &amp; International Psycho-oncology Groups</li> <li>• National &amp; international research partners</li> </ul>
School of Health & Human Performance	<ul style="list-style-type: none"> <li>• Physiological, behavioural &amp; pharmacological interventions for chronic disease</li> <li>• Implementation of community based prevention programmes</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> </ul>

Unit name	Research Themes/Focus in PHR and HSR	National/International engagement/collaboration
	<ul style="list-style-type: none"> <li>Impact of exercise on the prevention, pathophysiology &amp; treatment of chronic diseases</li> </ul>	
DCU Business School	<ul style="list-style-type: none"> <li>Health service organisation, delivery &amp; improvement in the acute, primary &amp; community care domains</li> <li>Challenges for human resources management in health services provision</li> </ul>	<ul style="list-style-type: none"> <li>National &amp; international research partners</li> <li>Irish policy-makers &amp; practitioners</li> </ul>

### DCU School of Nursing

The DCU School of Nursing, established in 1995, organises its research activity into six over-arching clusters, each with a number of embedded research programmes supported by national funding agencies, government departments and voluntary organisations. Within *Psycho-Social Health*, research on suicidology and psychosocial impacts of illness, disability and loss have a population health focus. Current projects include building a mental health knowledge community, evaluation of interventions for teens who frequently self-harm/attempt suicide, providing meaningful care: learning from the experiences of suicidal men to inform local level health care, optimising the use of upper and lower limb prostheses, exploring lymphoedema service provision in Ireland, meaningful methods of measuring distress in patients with advanced cancer and evaluating a counselling service for bereaved children. This strand links to the international suicide prevention community through the International Collaborative of Interdisciplinary Suicide Research (ICISR) and links into such organisations such as the Irish Psycho-oncology Group and the International Psycho-oncology Society.

The *Health Systems* cluster conducts research on the design, organisation and delivery of care in a health services setting. Current projects include development of a resource allocation model for the Irish Health Services, the cost of colorectal cancer in Ireland and Traveller Health Study. The *Care and Presence* cluster conducts research on what constitutes evidence of caring and presence within nursing and health care practice. Current projects include a study of parents' and professionals' experiences of childhood interventions within a Marte Meo framework, advancement of global health - toward growing a research initiative with Ethiopia, and the lived experiences of lesbian women of Irish health care. There are currently five postgraduate research students/projects registered in the School of Nursing, which also offers a Diploma/MSc in Psycho-oncology.

### School of Health and Human Performance

The health promotion benefits of physical activity are an underpinning theme in a number of the multidisciplinary research areas within the School of Health and Human Performance at DCU. The School aims to have a significant and positive effect on national goals of improving health and quality of life. The *Centre for Preventative Medicine*, has identified (i) development of effective physiological, behavioural and pharmacological interventions for common clinical conditions and (ii) implementation of community based prevention programmes for chronic diseases as two of its four core research strands. The primary aim of the *Exercise Medicine Research Group* is to determine the impact of exercise on the prevention, pathophysiology and treatment of metabolic, cardiovascular and respiratory diseases. The group comprises sports and exercise medicine clinicians, hospital consultants (in the fields of general surgery, orthopaedic surgery and diagnostic imaging), physiotherapists and a performance psychologist to create a multidisciplinary research environment.

## Business School

Within the DCU Business School, the *Learning, Innovation and Knowledge Research Centre* (LiNK) has, as one of its three key domains, a *Health Services Management Cluster*. This group of researchers undertakes policy relevant research on health service organisation, delivery and improvement in the acute, primary and community care domains. Current research projects within the cluster focus on a number of aspects of human resources in health services provision as it relates to clinical directorate structure, key HR practices in Irish hospitals and the challenges for HR systems within a changing health service. The group has strong international collaborations.

## 2.4.2 NUI Galway

Research in PHR and HSR at NUI Galway is primarily carried out by the Departments of Health Promotion and General Practice, who collaborate together on many projects and training initiatives. Within the School of Business and Economics the Irish Centre for Social Gerontology provides a strong PHR and HSR focus, and capacity in HTA and other areas of health economics is being built up in this School. In addition, the School of Psychology has a small but active health psychology group, and some PHR and HSR is conducted in the School of Nursing and Midwifery. A number of clinicians within the School of Medicine have orientated their research towards HSR. The Centre for Biostatistics and Bioinformatics within the Department of Mathematics provides statistical support to a number of these researchers.

**Table 2.5 Summary description of NUI Galway academic units engaged in PHR and HSR**

Unit name	Research Themes/Focus in PHR and HSR	National/International engagement/collaboration
Health Promotion	<ul style="list-style-type: none"> <li>Health promotion initiatives</li> <li>Population health</li> <li>Program design &amp; evaluation</li> <li>HSR</li> <li>Health policy research</li> </ul>	<ul style="list-style-type: none"> <li>Irish policy-makers &amp; practitioners</li> <li>WHO Collaborating Centre</li> <li>Int. Union for Health Promotion</li> <li>National &amp; international research partners; JEDI</li> <li>SLÁN survey partner</li> <li>HBSC survey partner</li> </ul>
General Practice	<ul style="list-style-type: none"> <li>Clinical HSR</li> <li>Primary care (RCTs, observational studies etc)</li> <li>Economic analysis of care</li> </ul>	<ul style="list-style-type: none"> <li>HSE</li> <li>SPHERE study</li> <li>Brisbane Initiative</li> <li>National &amp; international research partners</li> </ul>
Irish Centre for Social Gerontology	<ul style="list-style-type: none"> <li>Rural gerontology &amp; access to services</li> <li>Economics of ageing &amp; resource allocation</li> <li>Technology &amp; ageing - costs &amp; consequences of utilization</li> </ul>	<ul style="list-style-type: none"> <li>TRIL Principle Investigator</li> <li>HSE</li> <li>TILDA Steering Committee</li> <li>National &amp; international research partners</li> </ul>
School of Business & Economics	<ul style="list-style-type: none"> <li>Health technology assessment</li> <li>Health service utilisation</li> <li>Economics of prevention, health promotion &amp; screening</li> <li>Health economics &amp; policy</li> </ul>	<ul style="list-style-type: none"> <li>NIHR HTA Programme</li> <li>Private sector partners</li> <li>Health Economics Association of Ireland</li> <li>National &amp; international research partners</li> </ul>
School of Psychology	<ul style="list-style-type: none"> <li>Epidemiology, risk &amp; management of chronic pain</li> <li>Role of social policy in pain &amp; stress management</li> <li>Child &amp; youth mental health evaluation</li> </ul>	<ul style="list-style-type: none"> <li>University centres (CROLS, CPR)</li> <li>National &amp; international research partners</li> </ul>

Unit name	Research Themes/Focus in PHR and HSR	National/International engagement/collaboration
School of Nursing & Midwifery	<ul style="list-style-type: none"> <li>Chronic disease management</li> <li>Health promotion &amp; public health</li> <li>Health services provision</li> </ul>	<ul style="list-style-type: none"> <li>HSE</li> <li>Patient organisations</li> <li>National &amp; international research partners</li> </ul>
School of Medicine	<ul style="list-style-type: none"> <li>Management of diabetes in the community</li> <li>Economic burdens of cancer</li> <li>Health services research</li> </ul>	<ul style="list-style-type: none"> <li>National &amp; international research partners</li> <li>HSE</li> </ul>
Centre for Biostatistics & Bioinformatics	<ul style="list-style-type: none"> <li>Methodological research into novel statistical methods &amp; models</li> <li>Applied research on health, medical, epidemiological &amp; biological data</li> </ul>	<ul style="list-style-type: none"> <li>University of Limerick (SFI-funded Bio-SI project)</li> <li>National &amp; international research partners</li> </ul>

### Department of Health Promotion/ Health Promotion Research Centre

The Department of Health Promotion at NUI Galway was established in 1990 with the support of the Department of Health as part of a revised National Structure for Health Promotion. The academic department and its associated research centre (Health Promotion Research Centre (HPRA)) were set up to provide training, education and research in health promotion in support of national developments. The aim of the HPRC is to build health promotion capacity through the generation and application of health promotion research into practice and policy. The centre works in close collaboration with policymakers, practitioners and international partners to document the changing population health needs and develop and evaluate health promotion policies and strategies in line with best international practice. International collaborative studies are undertaken with the World Health Organization (the HPRC is a designated WHO Collaborating Centre), the International Union for Health Promotion and Education, and a range of research partners and agencies in Ireland and internationally. Research themes are formed around the key health promotion settings, topics and population groups and include population health, programme development and evaluation, HSR and policy research. The Centre is involved in a major national epidemiological study, SLÁN '07: a National Health and Lifestyle Survey (with RCSI, ESRI and UCD), and is a survey partner in the European-wide HBSC Survey of child and teen health behaviours.

The department hosts a range of annual meetings, conferences and seminars. Staff of the department contribute to educational programmes in Health Promotion through a range of taught and postgraduate research programmes. The flagship programme is the Higher Diploma/Masters in Health Promotion which is offered full time in Galway and part-time in both Dublin and Galway. A Higher Diploma/Masters in Health Services Research is also offered. Health Promotion partners with the Faculty of Law and the Disciplines of Physics and Industrial Engineering to offer the MSc in Occupational Health and Safety and Ergonomics, and the Higher Diploma in Occupational Health and Safety and Hygiene. A range of other courses are provided on an outreach basis; the Certificate, Diploma and BA Degree in Social Care, and a number of Specialist Certificates in designated areas of health promotion e.g. oral health, youth health and sexual health promotion. Departmental staff also contribute to the undergraduate medical programme in the areas of Understanding Health and Illness in Society and the teaching of Health Promotion and Public Health. Health Promotion is also relevant to a range of other programmes across the University and service teaching includes teaching on Masters Programmes in Family Support, Social Work, Health Psychology, Primary Care, the BSc in Health and Safety Systems and the BA Connect programme in Childhood Studies.

## Department of General Practice

The Department of General Practice at NUI Galway was established in 1997 with the appointment of the Foundation Chair of General Practice. The HSE provides funding support to the department through a ten year agreement initiated in 2003 and through co-funding of Ireland's first Chair in Primary Care with the HEA. The department aims to conduct high quality research of practical benefit to the care of patients and thereby contribute to both the national and international evidence base. Research of relevant to this review includes a focus on management of chronic disease in the community. The department works closely with the HSE to identify local needs and responds with regional development initiatives. The multidisciplinary Centre for Clinical Health Services Research and Development, with significant contributions from the department, was established at NUI Galway in 2006 to draw together the expertise spread across a number of disciplines in the university that can contribute to the development and enhancement of clinical health services both regionally and nationally.

The department combines both original clinical research and HSR, with research staff drawn from many different disciplinary and methodological backgrounds. Work at the department includes randomised controlled trials, observational studies, qualitative research methods and economic analysis. In 2001, the department was the first department of general practice in Ireland to receive a Health Research Board programme grant to support the SPHERE study, which is the largest non-pharmaceutical randomised community trial ever to be performed on the island of Ireland. The department leads one of the six pillars of the HRB Clinical Research Facility. In terms of postgraduate research training the Department offers Ireland's only Internship in General Practice and is the only Irish department participating in the Brisbane Initiative, an international collaboration of universities which aims to foster and develop future leaders in primary care research. The department also provides a number of clinical modules for primary care practitioners that can be accessed on a stand-alone basis building, if desired, to a formal university degree.

## Irish Centre for Social Gerontology

The Irish Centre for Social Gerontology (ICSG) at NUI Galway is a multidisciplinary research centre established in 2007 with the support of the Atlantic Philanthropies. Research is focused in three areas, namely rural gerontology, the economics of ageing and on technology and ageing. Research in rural gerontology raises many issues of importance for older people, incorporating practical issues such as access to shops and services. In terms of the economics of ageing, resource allocation issues for older people dominate the research agenda, incorporating research on information, efficiency, effectiveness and outcomes in care of the elderly. Finally, the technology and ageing strand examines the costs and consequences of various information and communication technologies (ICT) for older people in Ireland and internationally with a view to realising the potential of ICT as an integrated, proactive, health-enhancing intervention in the care of older people in different care situations and settings. This strand is supported through the Technology Research for Independent Living (TRIL) Centre<sup>11</sup>, the largest research efforts of this type in the world.

## School of Business and Economics

The School of Business and Economics at NUI Galway hosts the first Chair of Health Technology Assessment in Ireland and has a small but growing group of researchers in the fields of health economics and health technology assessment on a variety of subjects including prevention, health promotion and screening across a range of illnesses and infectious disease, health service utilisation, cost of illness studies and health policy. The School offers an MSc (Health Economics) to introduce

<sup>11</sup> See <http://www.trilcentre.org/> for more information

students to the principles underlying the economic analysis of healthcare decision making within an evolving context of technological development, population aging and changing patient expectations.

### **School of Psychology**

The NUI Galway School of Psychology has a strong focus on health psychology. The *Psychology and Health* Cluster within the School conducts psychological and interdisciplinary research on health, well-being and health care provision. Researchers in the School are also involved in two university research centres, the *Centre for Research on Occupational and Life Stress*es to which School staff contribute research on stress, health, and well-being and social inequality and life stress, and the *Centre for Pain Research (CPR)*. The CPR supports interdisciplinary research across the university, the HSE and related health service agencies, with the aim of advancing our understanding and management of pain. Staff in the School contribute to all clusters within this centre, but of particular relevant to this review is their research into the epidemiology and population level risks for chronic pain and the role of social policy in the management of pain. The department offers an MSc in Health Psychology and has recently launched a cross-institutional structured PhD programme in Child and Youth Research, in collaboration with TCD. This programme supports policy and practice-relevant research and programme evaluation with children and young people.

### **School of Nursing and Midwifery**

The NUI Galway School of Nursing and Midwifery was established in 1993 to develop and promote appropriate education and research in the fields of nursing and midwifery. Research undertaken by the School is focused primarily on nursing and midwifery practice in the areas of older people, living well with chronic diseases, maternity care and women's health, and teaching and learning and the community. The School does conduct some PHR and HSR, primarily in collaboration with academics from other disciplines within NUI Galway and with external national and international partners, with health service providers and related agencies and with nursing and patient representative organisations. Four undergraduate programmes are offered in general nursing, psychiatric nursing and midwifery. Together with the HSE and the Nursing and Midwifery Planning and Development Unit (NMPDU) in Galway, the School has developed postgraduate clinically-focused programmes in response to service needs, including a Postgraduate Diploma in Public Health Nursing.

### **School of Medicine**

The primary research focus of the School of Medicine at NUI Galway is in the basic and applied biomedical and clinical domains. There is some relevant PHR and HSR, primarily through the research interests of individual clinicians in areas such as the management of diabetes in outpatient and community settings, and the economic burden of cancer. HSR has also been identified as one of the five research pillars of the newly established HRB Clinical Research Facility.

### **Centre for Biostatistics and Bioinformatics**

The Centre for Biostatistics and Informatics within the School of Mathematics at NUI Galway aims to combine its statistical expertise with that of University of Limerick, to create a Centre of Excellence. The centre conducts research on statistical modelling of relevance to biological and health data and provides statistical advice and support to groups and units throughout the university who conduct research in the areas of PHR and HSR.



### 2.4.3 NUI Maynooth

There is no single academic unit at NUI Maynooth whose core focus is PHR or HSR. However, there are a number of Centres and academic units in which PHR and HSR research takes place to a greater or lesser extent, in particular the National Institute for Regional and Spatial Analysis and the National Centre for Geocomputation.

**Table 2.6** Summary description of NUI Maynooth academic units engaged in PHR and HSR

Unit name	Research Themes/Focus in PHR and /or HSR	National/International engagement/collaboration
National Institute for Regional & Spatial Analysis	<ul style="list-style-type: none"> <li>• Accessibility of Services &amp; Infrastructure</li> <li>• Urban Health indicators across the EU</li> <li>• Social capital &amp; quality of life</li> <li>• Evaluating opiate use &amp; treatment</li> <li>• Spaces of health &amp; welfare</li> </ul>	<ul style="list-style-type: none"> <li>• Irish Social Sciences Platform (ISSP)</li> <li>• International Centre for Local and Regional Development (ICLRD)</li> <li>• National &amp; international research partners</li> <li>• Industry partnerships</li> </ul>
National Centre for Geocomputation	<ul style="list-style-type: none"> <li>• Population-based location of health facilities</li> <li>• Demographic analysis of disease patterns</li> <li>• Investigating unhealthy environments</li> <li>• Resource allocation in health services</li> <li>• Modelling health determinants in the population</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> <li>• Industry partnerships</li> <li>• Network of geocomputation centres worldwide</li> </ul>
Other Academic Units	<ul style="list-style-type: none"> <li>• Health Geography</li> <li>• Health &amp; social care planning</li> <li>• Medical Anthropology</li> <li>• Health economics</li> <li>• Community development &amp; sustainability</li> <li>• Biostatistics</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> <li>• Industry partnerships</li> </ul>

#### National Institute for Regional and Spatial Analysis

At NUI Maynooth, some PHR and HSR activity is conducted in the National Institute for Regional and Spatial Analysis (NIRSA), established in 2001 with a remit to undertake fundamental, applied and comparative research on spatial processes and their effects on social and economic development in Ireland. NIRSA is a collaboration with scholars from Mary Immaculate College, Limerick, the Institute of Technology, Sligo and Queen's University, Belfast. NIRSA's Associates and Fellows create clusters of expertise across the Departments of Anthropology, Adult Education, Applied Social Sciences, Geography and Sociology. Research relevant to this review is carried out primarily within the Sustaining Communities Cluster, and in particular in the *Social Exclusion, Quality of Life, Health and Welfare Research Group* which looks at the impacts of the rapid transformation of Ireland's social, economic and spatial landscape, alongside continuing issues around poverty and health. The research projects undertaken aim to develop insights into forces that define, measure and promote healthy communities.

#### National Centre for Geocomputation

The National Centre for Geocomputation (NCG) at NUI Maynooth was set up in 2004 to conduct research on the many forms of spatial information used by both business and government. In terms of health the *Centre for Health Geoinformatics* within the NCG conducts research on locating health facilities, analysing disease patterns, investigating unhealthy environments, resource allocation in



health service provision, modelling health determinants and tackling health inequalities. This research can inform decision-making in terms of engaging in environmental protection, prognoses and planning, and supporting health services. NCG staff collaborate closely with NIRSA, providing strong integration between the science and social science dimensions of spatial technologies and their applications. The NCG offers a Masters/Diploma programme in geocomputation.

### Other academic units

Individuals and small groups of scholars from a number of humanities and social science disciplines at NUI Maynooth undertake research relevant to PHR and HSR. These include Anthropology (medical anthropology, sustaining communities); Applies Social Studies (child welfare, poverty and social exclusion), Community Development (local nation and developing country), Economics (labour and inequality), Geography (medical geography, geographies of health, health and social care planning), Sociology (social exclusion, quality of life, health and welfare) and Mathematics (Biostatistics).

## 2.4.4 Queens University Belfast

PHR and HSR research at Queens University Belfast (QUB) is conducted primarily in the Centre for Public Health and the Nursing and Midwifery Research Unit, although there is also some relevant activity in the Department of Pharmacy, the Centre for Data Digitisation and Analysis, the Social Issues Research Group and the Centre for Family Policy and Child Welfare.

**Table 2.7 Summary description of QUB academic units engaged in PHR and HSR**

Unit name	Research Themes/Focus in PHR and HSR	National/International engagement/collaboration
Centre for Public Health	<ul style="list-style-type: none"> <li>Genetics of complex diseases</li> <li>Dietary intervention studies</li> <li>Biomarker design &amp; assessment</li> <li>Neurodegenerative diseases</li> </ul>	<ul style="list-style-type: none"> <li>NI Public Health Centre of Excellence</li> <li>NI Cancer Registry</li> <li>NI Dept. of Health</li> <li>National &amp; international research partners; JEDI</li> </ul>
Nursing & Midwifery Research Unit	<ul style="list-style-type: none"> <li>Monitoring &amp; surveillance of high risk populations</li> <li>Health &amp; quality of life</li> <li>Evaluation of complex interventions</li> <li>Maternal &amp; child health</li> </ul>	<ul style="list-style-type: none"> <li>Department of Health &amp; Social Care</li> <li>Patient Organisations</li> <li>National &amp; international research partners</li> </ul>
School of Pharmacy	<ul style="list-style-type: none"> <li>Patient care in residential/nursing homes</li> <li>Pharmaceutical care of chronic diseases</li> <li>Integrated medicines management (IMM)</li> <li>Improving the evidence base for medicine use in children</li> <li>Impact of health care policy on practice.</li> </ul>	<ul style="list-style-type: none"> <li>Clinical links with hospital &amp; primary care practice nationally &amp; internationally</li> <li>Local, national &amp; international research partners</li> </ul>
Other academic units	<ul style="list-style-type: none"> <li>Health psychology</li> <li>Health related behaviour</li> <li>Family policy &amp; child welfare</li> <li>GIS in the Social sciences</li> </ul>	<ul style="list-style-type: none"> <li>National &amp; international research partners</li> <li>Food Safety Promotion Board</li> </ul>

### Centre for Public Health

The Centre for Public Health (formerly the Centre for Population and Clinical sciences) in QUB is located in the School of Medicine, Dentistry and Biomedical Sciences, and houses a group of multidisciplinary researchers with interests in epidemiology (including genetics), nutrition and

metabolism, and ageing. The Centre for Public Health hosts the Northern Ireland Cancer Registry which was re-established in May 1994 under an agreement between the Department of Health and Social Services, Northern Ireland and QUB. The Registry has collaborative working links with the National Cancer Registry of Ireland, all other UK Registries, European Cancer Registries and the National Cancer Institute USA.

The research focus of the Centre for Public Health is on health and common chronic diseases, with the aim of generating scientific knowledge that can be translated into improvements in the health of the population, patient care and public policy. Nutrition and metabolism research is focused on how diet and lifestyle factors may affect chronic disease risk, with the ultimate aim of translating findings into improvements in both patient care and health care policy. A number of research approaches are used, including population-, clinical- and laboratory-based, with particular emphasis on biomarker development and assessment, and dietary intervention studies. The multidisciplinary programme on ageing research studies genetic and molecular aspects of neurodegenerative disorders, including dementia, Parkinson's disease and schizophrenia. The Centre also has a strong interest in genetics of complex diseases, such as diabetes and its renal complications, and disorders affecting the heart and vascular system. Staff members are associated with the *Public Health Centre of Excellence* for Northern Ireland, which is one of five Public Health Research Centres of Excellence in the UK, bringing together leading experts from a range of disciplines working in partnership with practitioners, policy-makers and wider stakeholders, to build research capacity and tackle the major national public health issues.

Education of future clinical and scientific research leaders is also a core objective and the centre offers a number of PhD places each year. The Centre offers an MSc in Public Health in collaboration with the Institute of Public Health in Ireland to encourage multidisciplinary working and increase capacity to address complex population-level health issues.

### **Nursing and Midwifery Research Unit**

The Nursing and Midwifery Research Unit (NMRU) within the School of Nursing at QUB was recently established as a focus of strategic, inter-professional research activity in the School. Research activity is organised into two thematic clusters, Maternal and Child Health and Evaluation of Complex Health care Interventions, both of which are relevant to this review. Research activity within the *Maternal and Child Health* theme focuses predominately on 'high risk' groups in pregnancy, childbirth, infancy and childhood. The research programme comprises three subthemes, namely monitoring and surveillance of high risk childhood populations, investigating access to effective health care and investigating health and quality of life. Within the *Evaluation of Complex Health Care Interventions* theme research is focused on evaluation of both outcomes and the processes of care leading to those outcomes within the health services. Two of the three key areas within the research programme of this theme are relevant to the review, namely developing methods for evaluating complex health care interventions and conducting intervention studies.

The School delivers a range of undergraduate and postgraduate programs in the disciplines of nursing and midwifery. In terms of taught courses, the School concentrates its efforts on offering programs that integrate theory and clinical practice. There are no postgraduate degrees currently on offer specific to Public Health, Population Health or Health Services Research. PhD training is anchored in the fields of maternal and child health and evaluation of complex interventions.

## School of Pharmacy

Within the School of Pharmacy at QUB relevant research is conducted by the *Clinical and Professional Practice Research Group* through two programmes, the Hospital Programme and the Outpatient and Primary Care Programme. These programmes are underpinned by predictive risk modelling on poor compliance, on development of disease complications and on hospital readmission rates. The central hypothesis of the research is that pharmaceutical care provision, within a multidisciplinary team, will improve patient health outcomes in a cost-effective manner. The Outpatient and Primary Care Programme focuses on developing models of health care delivery at the general practice-pharmacy interface, which use the expertise of the pharmacist. Areas of particular interest to the group include: patient care in residential/nursing homes; pharmaceutical care of congestive heart failure, cancer, and diabetic patients; management of hospital acquired infection; medicines management; discharge planning; supplementary prescribing; pharmaceutical care/integrated medicines management; improving the evidence base for medicine use in children and the impact of health care policy on care provision and practice.

## Other academic units

Individuals and small groups of scholars from a number of other academic units at QUB conduct research relevant to PHR and HSR. The *Centre for Data Digitisation and Analysis* carries out research on the use of GIS in the social sciences in collaboration with colleagues in NUI Maynooth, and offers an MRes in this area. In the School of Psychology, the *Social Issues Research Group* focuses on a number of health-relevant issues including quality of life and health, illness perceptions, stress and health, health related behaviour, sport and exercise, and communicating food risk and safety information to adolescents. Within the School of Sociology, Social Policy and Social Work the *Centre for Family Policy and Child Welfare* focuses its research on social policy research relating to children and their families in Ireland and covering children's lives, their development and well-being, and how best to secure positive outcomes for those in vulnerable groups. In collaboration with colleagues across the campus the centre has developed an interdisciplinary research initiative entitled Improving Children's Lives.

## 2.4.5 Royal College of Surgeons in Ireland

In the Royal College of Surgeons in Ireland (RCSI), the Division of Population Health Research was established in 2006, bringing together the Departments of Epidemiology and Public Health Medicine, Psychology and Health Services Research, and General Practice and creating a critical mass of researchers with a focus on both Irish and global health priorities. Over 40 staff, approximately half of whom are grant-funded, now work in a single customised site completed in 2008. In terms of research, the three parent departments represent a diverse mix of themes. Some relevant activity in PHR and HSR also takes place within the Faculty of Nursing and Midwifery and the Departments of Pharmacy and Chemical Medicine, Physiotherapy and Department of Physiology and Medical Physics.

In terms of postgraduate research training, RCSI provides three structured postgraduate programmes: the Masters in Ethics, Health Care, and Law and two multicentre-taught PhD Scholars Programmes. The HRB PhD Scholars Programme in Health Services Research and the Irish Aid/HEA Connecting Health Research in Africa and Ireland Consortium Programme. In 2007 a consortium led by RCSI with partners from TCD and QUB was awarded the HRB Centre for Primary Care Research (2008-2012) to examine the quality of care provided to vulnerable patient groups. Clinical trials of information technologies are planned regarding safer medicines management, alongside a register of clinical prediction rules and systematic reviews of diagnostic accuracy to be disseminated through the Cochrane Primary Health Care Field.

**Table 2.8 Summary description of RCSI academic units engaged in PHR and HSR**

Unit name	Research Themes/Focus in PHR and HSR	National/International engagement/collaboration
Epidemiology & Public Health Medicine	<ul style="list-style-type: none"> <li>• CVD risk assessment</li> <li>• Global health</li> <li>• Health policy</li> </ul>	<ul style="list-style-type: none"> <li>• Global health systems network</li> <li>• EU SCORE risk assessment</li> <li>• Various strategy initiatives</li> <li>• National &amp; international research partners; JEDI</li> </ul>
General Practice	<ul style="list-style-type: none"> <li>• Medicines management</li> <li>• Evidence based health</li> <li>• ICT for health</li> </ul>	<ul style="list-style-type: none"> <li>• HRB Centre for Primary Care</li> <li>• National &amp; international research partners</li> </ul>
Health Services Research Centre	<ul style="list-style-type: none"> <li>• HSR</li> <li>• Health policy evidence base</li> </ul>	<ul style="list-style-type: none"> <li>• Several national reviews</li> <li>• SLÁN survey partner</li> <li>• National &amp; international research partners</li> </ul>
Faculty of Nursing & Midwifery	<ul style="list-style-type: none"> <li>• Epidemiology of chronic disease</li> <li>• Mental Health/Men's health</li> <li>• Bioethics in health care</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> <li>• HSE</li> </ul>
Other academic units	<ul style="list-style-type: none"> <li>• Pharmaceutical care &amp; prescribing practices</li> <li>• Obesity &amp; health</li> <li>• Therapeutic exercise for chronic conditions</li> <li>• Disinfection of drinking water</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> <li>• Irish Aid</li> </ul>

### Department of Epidemiology and Public Health Medicine

The RCSI Department of Epidemiology and Public Health Medicine has a research focus on cardiovascular disease risk assessment and on global health issues. Staff co-coordinate a 15-country network on the effects of Global HIV/AIDS Initiatives on health systems (2006-10), funded by the departments of Foreign Affairs of Ireland, Denmark and the European Union. The department has pioneered research and Irish policy developments in cardiovascular disease risk assessment (e.g. the SCORE risk assessment for European countries and the first Irish National Cardiovascular Health Strategy.) Other research focuses on strengthening HSR capacity in six African countries, migrant health care workers in Ireland and a Chlamydia pilot screening programme for Ireland, in collaboration with colleagues at NUI Galway.

### Department of General Practice

The research program in the RCSI Department of General Practice focuses on medicines management in vulnerable groups of patients (elderly, pregnant women, children and drug users), evidence-based health with a particular focus on systematic reviews of randomized controlled trials and/or diagnostic accuracy studies and implementation strategies, in particular computer-based clinical decision support systems (CDSSs). The Head of Department is the principal investigator for the national HRB Centre for Primary Care Research, alongside collaborating institutions Trinity College Dublin and Queen's University Belfast. Academic activity in the HRB Centre is leading towards the development and dissemination of a register of Clinical Prediction Rules (CPRs). At the time of survey (2009) there were six postdoctoral researchers in the department with backgrounds in epidemiology, health psychology, information and communication technology as well as clinical general practice.

## Department of Psychology

The Department of Psychology research focus on quality of life and quality of care assessment is being delivered through the *Health Services Research Centre*, established in 1997 as an early focus for HSR in Ireland. The aim of this centre is to deliver studies to inform policy and practice development. Several sensitive health-related national projects, including national reviews on services provided to those infected with hepatitis C through State-provided blood products; national studies on sexual health - the first study of the lifetime prevalence of sexual abuse in Ireland (SAVI) and, in association with the ESRI, the first national sexual health study (Irish Study of Sexual Health and Relationships (ISSHR)) have been completed. Research on ageing and cardiovascular disease (cardiac rehabilitation, heart failure and stroke) has formed much of the recent focus of the research. Included in this is the first national stroke audit (Irish National Audit of Stroke Care (INASC)(2008) and the major national epidemiological study, SLÁN '07: a National Health and Lifestyle Survey (with UCD, ESRI and NUI Galway.)

The Department is a partner in the HRB PhD Scholars Programme in Health Services Research, a joint initiative of senior academic staff from RCSI, TCD and UCC, which has over 40 registered PhD students carrying out Health Services Research projects. They constitute a grouping called the Health Services Research Institute. The Programme theme is '*Integrated health care: from research to policy and practice*'.

## Faculty of Nursing and Midwifery

The RCSI Faculty of Nursing and Midwifery has been long established as a provider of postgraduate education for nurses from a range of clinical specialities. The faculty has an active research agenda, and has established a Research Centre that engages in a range of local, national and international research projects. While research is focused primarily on wound care and healing, one research project is of particular relevant to this review. The ELI Study - *Epidemiology of Lymphoedema in Ireland* addresses the current lack of epidemiological data on the chronic disease lymphoedema and hopes to input to decisions on policy, service provision and resource allocation in the management of this condition. In terms of teaching, the Faculty introduced a four-year pre-registration Bachelor of Science in Nursing (Hons) Programme in 2008. Of note are the postgraduate programmes in Nurse Prescribing, for which a legislative framework was introduced in 2007, and the Certificate in Clinical Research Nursing Course, which aims to provide participants with the knowledge, attitudes and skills necessary to manage and coordinate clinical trials within the healthcare setting.

## Other academic units

Individuals and small groups of scholars in other academic units in the RCSI undertake research relevant to PHR and HSR. Within the *Department of Pharmacy and Chemical Medicine* a national on-line database of hospital prescribed extemporaneous preparations is being developed for access by hospital and community based practitioners as well as for utilisation as a teaching resource. In another project a free leaflet is being developed containing information on obesity and its health related consequences which will be placed in community Pharmacies, GP clinics and weight control centre's across the country. In the *Department of Physiotherapy* there is some research on the health outcomes and cost effectiveness of supervised exercise regimes for patients with cardiovascular disease and hip osteoarthritis. In the *Department of Physiology and Medical Physics* work is ongoing on the health impacts of solar disinfection of drinking water for use in developing countries or in emergency.

## 2.4.6 Trinity College Dublin

At Trinity College Dublin (TCD), research in PHR and HSR is primarily carried out within the School of Medicine, in the Department of Public Health and Primary Care, the Department of Health Policy and Management and the Centre for Global Health. While the objectives and academic activities of each unit are distinct, there is some overlap of academic and clinical staff. The School of Dentistry and the School of Nursing and Midwifery also conduct some PHR and HSR relevant research, as do researchers in a number of other academic units across the university.

**Table 2.9 Summary description of TCD academic units engaged in PHR and HSR**

Unit name	Research Themes/Focus in PHR and HSR	National/International engagement/collaboration
Public Health & Primary Care	<ul style="list-style-type: none"> <li>Public health issues</li> <li>Deprivation &amp; chronic disease</li> <li>Societal health problems</li> <li>Alcohol &amp; illicit drug abuse</li> <li>Primary care research</li> </ul>	<ul style="list-style-type: none"> <li>HSE - joint appointment</li> <li>SAHRU consultancy with external bodies</li> <li>National &amp; international research partners; JEDI</li> </ul>
Health Policy & Management	<ul style="list-style-type: none"> <li>Health services management</li> <li>Health economics</li> <li>Health policy</li> </ul>	<ul style="list-style-type: none"> <li>Policy advice &amp; consultancy</li> <li>Partner with RCSI &amp; UCC in HRB funded PhD programme</li> <li>National &amp; international research partners</li> </ul>
Centre for Global Health	<ul style="list-style-type: none"> <li>Global health systems</li> <li>Program design &amp; evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Network of international experts</li> <li>Irish Forum for Global Health</li> <li>International health agencies</li> <li>National &amp; international research partners</li> </ul>
TCD Dental School & Hospital	<ul style="list-style-type: none"> <li>Evaluation of fluoridation safety &amp; efficacy</li> <li>Epidemiology of oral health</li> <li>Dental service delivery audit</li> <li>Special care dentistry</li> </ul>	<ul style="list-style-type: none"> <li>TILDA partner</li> <li>Central Remedial Clinic</li> <li>National &amp; international research partners</li> </ul>
School of Nursing & Midwifery	<ul style="list-style-type: none"> <li>Maternity care &amp; women's health</li> <li>Palliative care, disability/dementia</li> <li>Health care service quality, policy, legislation &amp; informatics</li> <li>Cardiovascular risk factors &amp; services</li> </ul>	<ul style="list-style-type: none"> <li>Relevant European agencies</li> <li>National &amp; international research partners</li> </ul>
School of Social Work & Social Policy	<ul style="list-style-type: none"> <li>Drug use/addiction</li> <li>Homelessness; youth 'at risk';</li> <li>Mental health policy &amp; service provision;</li> <li>HIV/AIDS prevention &amp; service provision</li> <li>Irish health &amp; disability policy</li> <li>Child poverty, welfare &amp; protection</li> <li>Ageing, long-term care &amp; service delivery</li> </ul>	<ul style="list-style-type: none"> <li>TILDA leader</li> <li>Growing Up in Ireland survey partners</li> <li>National &amp; international research partners</li> </ul>
Other academic units	<ul style="list-style-type: none"> <li>Policy Institute briefings, seminars etc</li> <li>Psychology of eating disorders</li> <li>Psychotherapeutic interventions &amp; health</li> <li>Addiction behaviours</li> </ul>	<ul style="list-style-type: none"> <li>National &amp; international research partners</li> </ul>

### Department of Public Health and Primary Care

The Department of Public Health and Primary Care at TCD is a multidisciplinary department established in 1952, with the creation of a Chair in Social Medicine. This move acknowledged the contribution of the social environment to people's health or ill-health, and that medical students needed



a perspective beyond their traditional hospital oriented training. The overall focus of the department is on issues of public health concern and on clinical problems encountered in general practice with particular emphasis on deprivation and chronic disease, and societal health problems such as alcohol, tobacco, and illicit drug dependency. The current Head of Department also has a role within the HSE as a Consultant in Public Health Medicine, with a particular remit in the fields of alcohol and illicit drug use. The department has recently established a research group in relation to alcohol. The department also incorporates the *Small Area Health Research Unit* (SAHRU), which provides in-house statistical expertise, along with statistical consultancies for external bodies. SAHRU has developed a national small-area deprivation index, widely used by researchers and health service planners in Ireland. The *Adelaide Health Policy Initiative*, recently established in the department with funding from the Adelaide Hospital Society, generates data to provide evidence-based health policies and to advocate for more equitable health care.

The department contributes to the 5-year medical undergraduate curriculum with courses in the 1st and 4th years. The 1st year course is the Human Development and Behavioural Science Course, incorporating Medical Ethics. This is an early patient contact course, as part of which students are assigned in pairs to visit families with young babies in the families' own homes. The People, Practices and Populations course is delivered in the 4th medical year. As part of this course the students are attached to two different general practitioners for a total of four weeks, where they can observe the wide range of ill-health presenting in community setting. These attachments are complemented by a range of seminars on public health principles and practices, which explore disease status and determinants. The TCD/HSE Specialist Training Programme in General Practice is also part of the department, providing a network of training practices, which contribute to the teaching and research. SAHRU provides web based distance learning introductory and advanced courses in biostatistics which are open to medical and health professionals.

### Department of Health Policy and Management

Research in the Department of Health Policy and Management at TCD focuses on planning, managing, financing and priority setting in health and social care, in the Irish and international contexts. Studies are on-going on the implications of demographic change on demands for and delivery of health services, including a large study in collaboration with the ESRI on demographic change and several studies drawing on the Irish Longitudinal Study on Ageing (TILDA) data, studies on the desirability and feasibility of social health insurance in Ireland in collaboration with the Adelaide Hospital Society, studies on the management of chronic diseases (especially on epilepsy), studies on end of life care, studies on the organisation of care and on the resilience of services in unstable economic conditions. Staff in the Department have also been involved in economic evaluation studies, mainly in cancer screening and follow up, on chronic pain, and on initiatives in skill mix and skill substitution, work closely with the *Centre for Global Health* at TCD and have close links with the European Observatory on Health Systems and Policies. Research staff in the *Health Research and Information Division* of ESRI hold adjunct posts in the Department as do several senior health service managers.

The Department delivers postgraduate teaching through the Masters in Health Services Management programme, which is targeted at health service professionals and managers who wish to have or currently have responsibility for the planning, organisation or delivery of services. The Department is a partner in the HRB PhD Scholars Programme in Health Services Research, a joint initiative of senior academic staff from RCSI, TCD and UCC, which has over 40 registered PhD students carrying out Health Services Research projects. They constitute a grouping called the Health Services Research Institute. The Programme theme is '*Integrated health care: from research to policy and practice*'.

## Centre for Global Health

The research focus of the Centre for Global Health (CGH) at TCD is on strengthening health systems globally by addressing problems shared by high, middle and low income countries. The CGH takes an interdisciplinary and multi-country approach to critical analysis, research-in-action and capacity building by creating a network of experts. It has built strong collaborative links with universities in many countries. In Ireland the CGH collaborates with third-level institutions on an all-Ireland basis through the Irish Forum for Global Health. The CGH offers an MSc in Global Health with a focus on the design, implementation and evaluation of health programmes and aimed at people who are currently working or wish to work in managerial and planning positions in public health systems, NGOs, governments, donor and international health agencies. In addition, the CGH coordinates the International Doctorate in Global Health (Indigo) which is offered by the International Doctoral School in Global Health. Participating partners include Addis Ababa University (Ethiopia), University of Malawi, Ibadan University (Nigeria) and Makerere University (Uganda). Research staff in the *Health Research and Information Division* of ESRI hold adjunct posts in the Centre.

## Dublin Dental School and Hospital

Relevant research in the Dublin Dental School and Hospital at TCD is undertaken within the division of Public and Child Dental Health, and includes research on Public Dental Health, Primary Care and Special Care Dentistry. Within the *Public Dental Health* theme, research is focused on the dental health role of fluorides, principally water fluoridation, and its safety monitoring, and the epidemiology of oral health in children and its link to deprivation. In the *Primary Dental Care Unit* an active audit and research programme concentrates on epidemiology and service delivery.

The relatively new *Special Care Dentistry Unit* conducts research in the area of oral health in disabled children and adults, investigating preventive approaches to the management of disease in adults with Down syndrome and evaluating the role for oral health care facilitators in the public service. The unit is currently participating in the HRB longitudinal study of oral health promotion for 0-6-year-olds with disabilities and has inputs to the longitudinal study of Childhood in Ireland as well as the Learning Disability supplement to the TILDA Survey of ageing. In addition, there is on-going work to complement national dental epidemiological data collections with a Department of Health funded pilot of a dental needs assessment tool, in line with the needs assessment requirement under Part 2 of the Disability Act (2005). A pilot study is underway with the Central Remedial Clinic on assessment and management of children with drooling.

## School of Nursing and Midwifery

The TCD School of Nursing and Midwifery was established in the Faculty of Health Sciences in September 1996 to enable the development of undergraduate and postgraduate nursing education programmes. The School has a particular focus on research in the areas of Maternity Care and Women's Health, and Ageing and Disability/Dementia. The *Management and Health care Policy Group* collaborates with health clinicians, academics, researchers and other relevant agencies within the European Union to advance research in areas such as health care service quality, change management, health policy and legislation, organisational behaviour and management health informatics. In addition, a number of recognised Research Groupings that have been established in the core health critical research areas are of relevant to this review. The *Cardiovascular Research Group* focuses on cardiovascular risk factors/ life-style, evaluation of cardiovascular services and response time to ACS symptoms. The *Disability Ageing and Palliative Care Group* focuses on ageing



demographics of persons with intellectual disability, intervention research<sup>12</sup> and care approaches with various spectrum autistic disorders and the evidence base to support palliative care as an approach to addressing the needs of persons with advanced dementia and other terminal illness. The School delivers a range of undergraduate and postgraduate programs in the disciplines of nursing and midwifery PhD training is anchored in the research groupings.

### School of Social Work and Social Policy

The School of Social Work and Social Policy at TCD undertakes policy research in a number of areas of relevance to this review including; drug use/addiction; homelessness; youth 'at risk'; mental health policy and service provision; HIV/AIDS prevention and service provision; practice-based research and evaluation; Irish health and disability policy; decision-making in health care and comparative health policy. It co-sponsors the *Children's Research Centre* - in association with the School of Psychology and hosts the *Social Policy and Ageing Research Centre*. The *Children's Research Centre* conducts policy research in areas such as child poverty and social exclusion, and child welfare and protection. The centre collaborates with the ESRI to conduct a significant longitudinal study of all aspects of children and their development entitled *Growing up in Ireland*. The main aim of the study is to paint a full picture of children in Ireland and how they are developing in the current social, economic and cultural environment.

The *Social Policy and Ageing Research Centre* clusters its research into three areas: participation and inclusion of older people with a view to improving service delivery to older people in the community; institutional and community approaches to the provision of long-term care; and the contribution of older adults in areas such as childcare and voluntary work. The Centre also hosts the Irish Longitudinal Study on Ageing (TILDA) which is the most detailed study on ageing ever undertaken in Ireland. The study is being carried out in collaboration with Dundalk Institute of Technology, the ESRI, NUI Galway, QUB, RCSI, UCD and Waterford Institute of Technology.

### Other academic units

The *Policy Institute* at TCD brings together researchers from the Schools of Social Sciences and Philosophy, Social Work and Social Policy and Business to interact with the national policy community through briefing papers, seminars, lectures and conferences on issues of major importance. It also hosts a visiting research fellow in conjunction with the Combat Poverty Agency. Relevant research within the School of Psychology includes research on global health issues, eating disorders, psychotherapeutic interventions and health, affective decision making in obese adults and addiction behaviours. The School co-sponsors the *Children's Research Centre*, described above.

## 2.4.7 University College Cork

At University College Cork (UCC), research in PHR and HSR is primarily carried out in the Department of Epidemiology and Public Health and in the Oral Health Services Centre, within the College of Medicine and Health. A number of other departments within this college also conduct some PHR or HSR relevant research. In addition, there is a Health Economics Group in the School of Business and significant research in the area of Food and Nutritional Sciences, including a HRB funded Centre for Diet and Health Research, and the Cork Cancer Centre. The School of Nursing and Midwifery and a

<sup>12</sup> **Intervention research** is an emerging field of research in the social sciences that integrates approaches to research which seek to yield results that can be put to practical use by practitioners, administrators and policy makers (see Rothman J and Thomas EJ (1994)). It focuses on the development of knowledge about interventions, the design and adaption of new and existing interventions and packaging and disseminating knowledge about innovative interventions.

number of other academic units across the university also conduct some PHR and HSR relevant research.

**Table 2.10 Summary description of UCC academic units engaged in PHR and HSR**

Unit name	Research Themes/Focus in PHR and HSR	National/International engagement/collaboration
Epidemiology & Public Health	<ul style="list-style-type: none"> <li>• Nutritional/chronic disease epidemiology &amp; management</li> <li>• HSR in diabetes &amp; self-harm</li> <li>• Occupational health</li> </ul>	<ul style="list-style-type: none"> <li>• HRB Centre for Diet &amp; Health</li> <li>• Joint appointments with NCR</li> <li>• SLÁN Survey partners</li> <li>• TILDA Study partners</li> <li>• National &amp; international research partners; JEDI</li> </ul>
Oral Health Services Centre	<ul style="list-style-type: none"> <li>• Oral health care product evaluation</li> <li>• Child &amp; adult oral health surveillance</li> <li>• Special care dentistry</li> <li>• Public dental health</li> </ul>	<ul style="list-style-type: none"> <li>• DoHC national surveys</li> <li>• Clinical trials for industry</li> <li>• HSE Dental Services</li> <li>• National &amp; international research partners</li> </ul>
Other departments within the College of Medicine & Health	<ul style="list-style-type: none"> <li>• Impact of childhood interventions on health, social &amp; economic outcomes</li> <li>• Perinatal &amp; early childhood health</li> <li>• Collection of national perinatal data &amp; development of clinical guidelines</li> <li>• HTA; Health Literacy</li> <li>• Medication adherence &amp; monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> <li>• ESRI</li> <li>• Crumlin Children's Hospital</li> <li>• BASELINE Survey leader</li> </ul>
Food & Nutritional Sciences	<ul style="list-style-type: none"> <li>• Food sciences</li> <li>• Health impacts of Vit D intake</li> <li>• Nutritional related diseases</li> <li>• Bioactivity &amp; bioavailability in foods</li> <li>• Database of food consumption in adults</li> </ul>	<ul style="list-style-type: none"> <li>• HRB Centre for Diet &amp; Health</li> <li>• DAFF &amp; DoH</li> <li>• National Adult Nutrition Survey</li> <li>• National &amp; international research partners</li> <li>• Teagasc</li> </ul>
Health Economics Group	<ul style="list-style-type: none"> <li>• Resource Allocation</li> <li>• Global health</li> <li>• Health &amp; evaluation economics</li> <li>• Health insurance issues</li> <li>• Alternative medicine regulation</li> <li>• Health inequality</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> </ul>
Cork Cancer Centre	<ul style="list-style-type: none"> <li>• Screening for early detection of colorectal cancer</li> <li>• Dietary modulation to prevent &amp; control tumour growth</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> <li>• Industry partners</li> </ul>
School of Nursing & Midwifery	<ul style="list-style-type: none"> <li>• Ethical issues in health care</li> <li>• Psychiatric &amp; mental health interventions, prevention &amp; outcomes</li> <li>• Chronic disease management</li> <li>• Public health nursing</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> </ul>

## Department of Epidemiology and Public Health

The Department of Epidemiology and Public Health within UCC College of Medicine and Health was established *de novo* in 1997 with the appointment of the Head of Department. The overarching objective of the Department is to develop a national profile of excellence in teaching epidemiology and public health at both undergraduate and postgraduate level and to develop an international research profile in a limited number of well-defined areas. The Department is working with cognate disciplines in

UCC towards the establishment of a School of Public Health in the university with a linked research institute focused on HSR and PHR. It is envisaged that the proposed School of Public Health will draw on the expertise of colleagues across the campus and in relevant external agencies with research and teaching interests in PHR, HSR and health policy.

Current research work in the department is focused on three major research themes: nutritional/chronic disease epidemiology (focused on CVD and diabetes), HSR (focused on diabetes and self-harm) and occupational health research (focused on the workplace smoking ban). In 2008 the Department, in collaboration with UCD, established the HRB Centre for Diet and Health Research (CHDR) with funding from the HRB and the Department of Agriculture, Food and Fisheries. The aim of this centre is to provide the evidence base for public policy, health promotion and clinical practice on the prevention and management of obesity, diabetes and related metabolic disorders. The Department has close links including joint appointments with the National Cancer Registry and the National Suicide Research Foundation on whose behalf it hosts the National Self Harm Registry. The Department is involved in two major national epidemiological studies, SLÁN '07: a National Health and Lifestyle Survey (with RCSI, UCD, ESRI and NUI Galway) and TILDA, the Irish Longitudinal Study of Ageing (with TCD, DKIT, ESRI, NUI Galway, RCSI, UCD and WIT).

UCC offers the only BSc in Public Health and Health Promotion in Ireland and the first group of students graduated in 2008. The four year course attracts school leavers and mature students, as well as international students. The Department is also centrally involved in teaching epidemiology, public health and evidence based medicine to medical undergraduates and to graduates in year 1 of UCC's new 4 year Graduate Entry to Medicine Programme. At postgraduate level the Department offers Masters Degrees in Public Health (MPH) and in Occupational Health (MSc). In addition, the Department offers PHD training both through its various research strands and as a partner in the HRB PhD Scholars Programme in Health Services Research, a joint initiative of senior academic staff from RCSI, TCD and UCC, which has over 40 registered PhD students carrying out Health Services Research projects. They constitute a grouping called the Health Services Research Institute. The Programme theme is *'Integrated health care: from research to policy and practice'*.

### **Dental School and Oral Health Services Research Centre**

Research of particular relevance to the review in the UCC Dental School and Hospital is conducted through the Oral Health Services Research Centre (OHSRC), an independently-funded centre established in 1983 in response to growing demands for oral HSR from health agencies in Ireland and overseas seeking appropriate policy information for the proper planning of dental services. The OHSRC has a number of complimentary activities. It conducts clinical trials of oral health care products for industry, with over 20 studies conducted to date. It has directed national surveys on the oral health of both children and adults, at the behest of the DoH, and is currently engaged in directing and analysing oral health surveys of children with special needs, intellectually disabled adults and the elderly in residential care.

The OHSRC works closely with the HSE in reviewing aspects of the HSE dental services and analysing patterns of uptake of general dental practitioner services by medical cardholders. In 1986 the OHSRC was designated a WHO Collaborating Centre for Oral Health Services Research. In this capacity the OHSRC provides data for the WHO global data bank and participates in global health projects. The OHSRC has strong links with the UCC Departments of Nutrition, Statistics, Public Health and Epidemiology, Sociology, Microbiology, Chemistry, Computing, General Practice, and Economics. Many of the professional staff in the Centre contribute to the teaching of Dental Public Health at both undergraduate and postgraduate level in the Dental School. The OHSRC has a strong academic base

and hosts postgraduate students at Masters and PhD level in epidemiology and disciplines relevant to dental public health.

### **Other departments within the College of Medicine and Health**

Some academic staff within a number of other schools and departments in the UCC College of Medicine and Health conduct research of relevance to this review.

In the *Department of Paediatrics and Child Health* one strand of the department research portfolio focuses on quality of life issues and the impact of interventions for common disorders of childhood (food allergies, diabetes, epilepsy, prematurity) on health, social and economic outcomes. The recent involvement by the Department in the BASELINE birth cohort will involve the establishment of a cohort of Irish children for long term follow up to identify the determinants of health outcomes. The study will look at effects of poor growth in the womb, the incidence and prevalence of food allergy and eczema in early childhood and the incidence and effect of maternal and infant vitamin D status on health and growth.

The *Department of Obstetrics and Gynaecology* at Cork University Hospital hosts the Anu Research Centre, whose overall objective is to translate outcome data from Irish maternity hospitals into improved clinical services for Irish patients. The centre comprises of three research clusters one of which, the *National Perinatal Epidemiology Centre* gathers and evaluates national perinatal data with a view to translating evidence into clinical guidelines to be distributed nationally.

A number of staff within the *School of Pharmacy* conduct research on the role of the community and hospital pharmacists in optimising medication adherence and monitoring and operating specialized medicines clinics e.g. warfarin, pain and medicine management clinics; identification of inappropriately prescribed medicines in a primary and secondary care setting; HTA on psychotropic medication prescribing in children; and research into Health Literacy (HL).

### **Department of Food and Nutritional Sciences**

The Department of Food and Nutritional Sciences, within the UCC School of Science, Engineering and Food Sciences, is the longest established academic unit for food research in Ireland. The overall teaching and research interests of the Department are on Food Sciences (food technology, food microbiology, food chemistry etc) and Nutritional Sciences, which examine how food affects our health throughout our lives. Research in this area is conducted by the Vitamin D Research Group and the Nutritional Biochemistry Group. Of relevance to this review, the *Vitamin D Research Group* undertakes observational studies, randomised control trials and longitudinal population surveys of vitamin D status, intake and health impacts in sub-groups of the Irish and European populations, and has a particular interest in the relationships between vitamin D and a number of diseases, including inflammatory bowel diseases, osteopenia and osteoporosis. The research of the *Nutritional Biochemistry Group* is more laboratory-focused (bioactivity and bioavailability). The Department offers an undergraduate degree, taught MSc and MSc/PhD by research in Nutritional Sciences.

The Department is a co-leader of the National Adult Nutrition Survey (NANS) 2008 - 2010 along with the UCD Institute of Food and Health, Teagasc Ashtown Food Research Centre and UU. The main objective of the survey was to establish a nationally representative database of food consumption in adults in the Republic of Ireland which will be used to support the development and implementation of public health policy as well as meeting the needs of the food industry in relation to food safety and nutrition issues. The survey involved 1500 participants aged 18 years and over, and in addition to detailed information on food consumption, data was also collected on lifestyle habits, including

physical activity, attitudes to food and health, and factors influencing food choice. Physical measurements such as weight, height and body fat were also taken along with blood pressure measurement and blood and urine samples were collected for analysis of nutrition and metabolic indicators.

### Health Economics Group

The UCC Health Economics Group within the Department of Economics, draws together staff within the department with an interest in various aspects of health economics research. Areas of interest to the group include resource allocation, global health; health economics and evaluation studies; health insurance issues; alternative medicine regulation; quantitative economics focusing on equivalence scales, demand for health income-related inequalities and inequities in Irish health care utilisation; surgical intervention, treatment effects and health technology assessment; and the economics of smoking; the economics of suicide and subjective well-being. The Group, through the Department of Economics, offers an MSc in Health Economics and a Postgraduate Diploma in Health and Evaluation Economics.

### Cork Cancer Centre

The Cork Cancer Research Centre (CCRC) was established in 1999 as a collaboration between the Cork University Hospitals and UCC and has grown to over 30 researchers and scientific and clinical staff. Research in the centre is organised into four themes, with a primary focus on developing new treatments for oesophageal, breast, colon, kidney and leukaemia cancers. Of relevance to this review is the *Cancer Prevention* theme which looks at early detection through better screening and detection techniques. Since 2003 the CCRC has been actively running a colorectal cancer prevention clinic. In addition, active prevention strategies being examined include dietary manipulation and introduction of natural cancer preventative ingredients into the diet in the form of pre and probiotics to modulate gastrointestinal flora and influence tumour development.

### School of Nursing and Midwifery

The UCC School of Nursing and Midwifery was established in 1994 as part of the College of Medicine and Health. The School has 1000 undergraduate and 400 postgraduate students and an academic staff of 56. Research activities in the School of Nursing and Midwifery are organized through seven Recognised Research Areas (RRA's). Research teams are encouraged to link with other academics, researchers and allied health care professionals within the College of Medicine and Health and beyond. RRAs of relevant to this review include aspects of *Ethical Issues in Health care* and interventions, preventative measures and outcomes in the *Psychiatric and Mental Health Nursing*, *Chronic Illness Management in Children, Young Adults and their Families* and *Chronic Illness and the Older Adult* RRAs. The School offers undergraduate training in General, Psychiatric, Intellectual Disability and Children's Nursing and a BSc in Midwifery. The School also offers a range of clinically orientated postgraduate Diplomas, masters and PhD level programmes, including a Postgraduate Diploma in Public Health Nursing.

## 2.4.8 University College Dublin

At University College Dublin (UCD), research in PHR and HSR is primarily carried out within the School of Public Health, Physiotherapy and Population Sciences, in the Geary Institute and by some research clusters within the Institute of Food and Health. The Schools of Nursing and Midwifery, The Schools of Applied Social Science and Medicine also conduct some PHR and HSR relevant research, as do a number of other academic units across the university.

**Table 2.11 Summary description of UCD academic units engaged in PHR and HSR**

Unit name	Research Themes/Focus	National/International engagement/collaboration
Public Health, Physiotherapy & Population Sciences	<ul style="list-style-type: none"> <li>• Sports studies</li> <li>• Occupational health</li> <li>• Environmental health</li> <li>• HSR</li> <li>• Chronic disease epidemiology</li> <li>• Food &amp; health</li> </ul>	<ul style="list-style-type: none"> <li>• Hosts a number of national centres (NNSC, CFR, CSTAR)</li> <li>• SLÁN Survey partners</li> <li>• HBSC Survey partners</li> <li>• TILDA Survey partners</li> <li>• National &amp; international research partners; JEDI</li> <li>• TRIL partners</li> </ul>
Geary Institute	<ul style="list-style-type: none"> <li>• Behaviour &amp; health</li> <li>• Risk communication &amp; perception</li> <li>• Global health</li> </ul>	<ul style="list-style-type: none"> <li>• European SHARE survey</li> <li>• Irish Aid</li> <li>• Irish Social Science Data Archive</li> <li>• National &amp; international research partners</li> </ul>
Institute of Food & Health	<ul style="list-style-type: none"> <li>• Epidemiology &amp; detection of food-borne zoonotic pathogens</li> <li>• Consumer behaviour &amp; evaluation of interventions</li> <li>• Cellular &amp; molecular nutrition</li> <li>• Public health nutrition</li> <li>• Food chemical exposure</li> </ul>	<ul style="list-style-type: none"> <li>• DAFF &amp; DoH</li> <li>• Irish Food and Health Research Alliance</li> <li>• National &amp; international research partners</li> </ul>
School of Nursing & Midwifery	<ul style="list-style-type: none"> <li>• Social, health &amp; palliative care needs of older people; healthy ageing</li> <li>• Health &amp; social care in children, young people &amp; women's health</li> <li>• Healthcare systems efficacy, efficiency &amp; outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• National &amp; international research partners</li> </ul>
School of Applied Social Sciences	<ul style="list-style-type: none"> <li>• Family Studies</li> <li>• Social policy economic &amp; evaluation, health policy &amp; economics</li> <li>• Policy on disability &amp; addiction, poverty &amp; income inequality</li> </ul>	<ul style="list-style-type: none"> <li>• Geary Institute</li> <li>• National &amp; international research partners</li> </ul>
School of Medicine	<ul style="list-style-type: none"> <li>• Diabetes Research Centre</li> <li>• Primary Care networks</li> <li>• North Dublin Stroke Study</li> </ul>	<ul style="list-style-type: none"> <li>• School of Public Health, Physiotherapy &amp; Population Sciences</li> <li>• National &amp; international research partners</li> <li>• GP practices</li> </ul>
Other academic units	<ul style="list-style-type: none"> <li>• Medical statistics &amp; epidemiology</li> <li>• Evaluation of health insurance, health care utilisation, health care reform, health economics &amp; the broadly defined "human resource"</li> <li>• Adolescent mental health &amp; eating disorders</li> <li>• Family, work, health &amp; life course studies</li> </ul>	<ul style="list-style-type: none"> <li>• School of Public Health, Physiotherapy &amp; Population Sciences</li> <li>• Geary Institute</li> <li>• School of Medicine</li> <li>• National &amp; international research partners</li> </ul>



## School of Public Health, Physiotherapy and Population Sciences

The UCD School of Public Health, Physiotherapy and Population Sciences, formerly the Department of Public Health Medicine and Epidemiology, amalgamated in September 2009 with the School of Physiotherapy and Performance Science (incorporating the Institute of Sport and Health) and with supporting links to the Institute of Food and Health. It is the largest academic unit of its kind in the Republic of Ireland. The School hosts three national resources, the National Nutrition Surveillance Centre (NNSC) and the Cystic Fibrosis Registry (CFR) and CSTAR (the Centre for Support and Training in Analysis and Research). The *NNSC* provides a source of information and research expertise, particularly in nutritional epidemiology and surveillance methodology, to those wishing to mount specific projects such as micro-surveys. The *Cystic Fibrosis Registry of Ireland*, which has been in operation since 2001, collects and analyses information relating to cystic fibrosis which can be used to facilitate research and provide accurate reports in order to monitor and improve treatments which will contribute to the quality of care of persons with cystic fibrosis. *CSTAR* (the Centre for Support and Training in Analysis and Research) is a national methodological support centre established on a pilot basis by the HRB to provide a consultancy/advisory service for health researchers in Ireland.

The School's research programmes are organised into hubs of activity, including Sports Studies (CSS); Safety, Health and Welfare at Work (CSHW); Environmental Health, Health Service Research (HSR); Chronic Disease Epidemiology; Food and Health; Early Childhood Studies and a link to the Centre for Behaviour and Health (Geary Institute). There has been a long tradition of HSR in the School. In 1999, the *Health Research Centre* was established to facilitate collaboration and enhance HSR within the University. This research has encompassed cross-university and inter-institutional research and has been funded through a range of international and national funding agencies (for example, the HRB funded Lifeways project). The School is formally linked to the University's *Institute of Food and Health* and has strong links with the *Institute of Sport and Health*. The School also works in close collaboration with a number of other Schools within the College of Life Sciences, and with other UCD research institutes, particularly the Conway and Geary Institutes. School Professorial appointments include: Epidemiology and Biomedical Statistics, Food and Health, Public Health Medicine and Epidemiology, Nutrigenomics, Early Childhood Studies and Epidemiology of Nutrition and Food-borne Disease. The School is involved in two major national epidemiological studies, SLÁN '07: a National Health and Lifestyle Survey (with RCSI, UCC, ESRI and NUI Galway) and TILDA, the Irish Longitudinal Study of Ageing (with TCD, DKIT, ESRI, NUI Galway, RCSI and WIT).

Training is offered by the School at undergraduate, diploma, masters and doctoral levels. Diploma and masters courses are offered in Sport and Exercise Management, Safety, Health and Welfare at Work, Public Health, Nutrition, and Child Health. In addition, the School offers PhD training both through its various research strands and as a structured programme, PERMIT. The PERMIT programme is a thematic inter-institutional 4 year PhD programme that combines core training in public health with sophisticated methodological training to PhD level.

## Geary Institute

The UCD Geary Institute (formerly the Institute for the Study of Social Change) conducts research on life course issues and the way public policy affects life outcomes. Research is organised into a number of thematic areas, the most relevant to the scope of this review being Behaviour and Health; Risk Communication and Risk Perception, the Survey of Health, Ageing and Retirement in Europe (SHARE) in collaboration with the School of Public Health and Population Sciences; and Global Health research supported by Irish Aid. The Institute is also home to the Irish Social Science Data Archive (ISSDA) which holds machine-readable data from surveys and official statistics (such as the Census

and the 1<sup>st</sup> and 2<sup>nd</sup> waves of the Growing Up in Ireland Study) and makes them readily available to users in the academic, public and commercial sectors.

### **Institute of Food and Health**

The UCD Institute of Food and Health brings together researchers with an interest in research into food and health, and is affiliated with the Schools of Agriculture, Food Science and Veterinary Medicine and the School of Public Health and Population Science. The Institute's aim is to foster research across disciplines that can influence national and European policy and promote public awareness of food and health issues. Under the umbrella of the Institute, research is organised into a number of themes, the most pertinent for this review being food safety, food and the consumer, and food and nutrition. Research in the *Food Safety* group is primarily focused on the use of molecular approaches to elucidate the epidemiology of food-borne zoonotic pathogens, developing detection strategies for *Cronobacter* in the infant formula food chain and identifying the characteristics contributing to its virulence in neonates and lastly investigating the genetic mechanisms contributing to the emergence of multiple antibiotic resistance in food-borne bacteria such as *Salmonella* and *Campylobacter*.

Research in the *Food and Consumer* group focuses on understanding consumer behaviour, developing evidence-based interventions for behaviour change and evaluation of those interventions and their outcomes for improved health. Research in the *Food and Nutrition* group is focused in three areas, cellular and molecular nutrition, public health nutrition and food chemical exposure. The theme of public health nutrition addresses rising rates of diet-related chronic disease, such as obesity, diabetes, cancer and coronary heart disease. Research focuses on establishing relationships between nutrition and health or disease risk in the population, or key sub-groups; monitoring the diet and health of Irish people and identifying key nutrition issues and risk groups; examining changes in diet and physical activity patterns over time and how this effects the health of the population; informing the development and evaluation of nutrition and health promotion programmes and national food policies.

### **School of Nursing, Midwifery and Health Systems**

The UCD School of Nursing, Midwifery and Health Systems is the largest and oldest of its type in Ireland. Research is conducted through a research unit incorporating funded and graduate research programmes. Relevant research work of the unit is organised around four main clusters, three of which are of most relevance to this review. *Older People: Health & Social Care* incorporates work on healthy ageing, and the social, health and palliative care of older people. *Maternal and Child Health Care* focuses on health and social care in childhood, women's health and children's and young people's health and social care. The *Health Systems* cluster focuses on the effectiveness and efficiency of healthcare systems, of which the Planning, Management, Resources, and Outcomes stream is most relevant to this review. The School offers four undergraduate programmes which provide entry to professional practice in general nursing, psychiatric nursing, children's nursing and midwifery as well as a range of opportunities for further study at graduate and doctoral level including a Graduate Diploma in Public Health Nursing.

### **School of Applied Social Sciences**

The UCD School of Applied Social Sciences is actively engaged in research on a wide range of policy areas. Of particular relevance to this review is its work on social policy evaluation, health policy, disability and addiction, poverty and income inequality, the economics of social policy, health economics and inequalities, social indicators, and the EU's Social Inclusion Process. In addition the Family Study Centre is an integral part of the School and its research work is closely linked with the Geary Institute and the Social Science Research Centre in UCD.



## School of Medicine and Medical Sciences

Within the UCD School of Medicine and Medical Science the recently established multi-disciplinary *Diabetes Research Centre* looks at influences of diet on development and management of Type 2 diabetes. The School has developed a number of research-based primary care networks that prioritise health promotion, disease prevention and care in the community and provide an essential interface for community-based clinical research. For example, the *North Dublin Stroke Study* is a multi-department and institution collaboration whose objective is to develop markers that can best identify who is at high risk for stroke. This initiative provides better clinical care service, is fuelling translational research investigations and is informing the National Stroke Strategy.

## Other academic units

Some academic staff within a number of other schools and departments at UCD have oriented their research to areas within PHR and HSR. For example, there is some research on medical statistics and epidemiology conducted in the *School of Mathematical Sciences*, while the *School of Economics*, which has links to the Geary Institute has research programmes in the areas of evaluation of health insurance, health care utilisation, healthcare reform, health economics and the broadly defined "human resource" economics (e.g. poverty, inequality) and health polarisation. In the *School of Psychology* health psychology research is focused on adolescent mental health and eating disorders. The *School of Sociology* has a research cluster entitled *Family, work, health and life-course* that examines the sociology of health and illness, risk, suicidal behaviours and inequalities and health disadvantage.

## 2.4.9 University of Limerick

At the University of Limerick (UL), HSR is carried out primarily in the Health Systems Research Centre and the Strategic Health Care Management Centre, with a small but active group of academics in the Department of Economics conducting health economics research. Within the Department of Nursing and Midwifery there is some PHR and HSR relevant research.

**Table 2.12** Summary description of UL academic units engaged in PHR and HSR

Unit name	Research Themes/Focus	National/International engagement/collaboration
Health Systems Research Centre	<ul style="list-style-type: none"> <li>Evidence-based policy &amp; practice in care/support systems</li> <li>Experience of ageing in the community</li> <li>Effectiveness of community mental health teams</li> <li>QI Frameworks for clinical directorates</li> </ul>	<ul style="list-style-type: none"> <li>HSE</li> <li>Public &amp; voluntary sector partners</li> <li>Strategic Health Care Management Research Group</li> <li>National &amp; international academic research partners</li> </ul>
Strategic Health Care Management Research Group	<ul style="list-style-type: none"> <li>Health care management, leadership &amp; performance</li> <li>High performance work systems</li> <li>Effectiveness of community mental health teams</li> </ul>	<ul style="list-style-type: none"> <li>Health professionals</li> <li>HSE</li> <li>Health Systems Research Centre</li> <li>National &amp; international research partners</li> </ul>
Department of Nursing & Midwifery	<ul style="list-style-type: none"> <li>Health promotion policy &amp; practice</li> <li>Mental illness prevention measures</li> </ul>	<ul style="list-style-type: none"> <li>National &amp; international research partners</li> </ul>
Department of Economics	<ul style="list-style-type: none"> <li>Measurement of service delivery accurately</li> <li>HTA, pharmacoeconomics</li> <li>Health economic analysis</li> </ul>	<ul style="list-style-type: none"> <li>Medical practitioners</li> <li>National &amp; international research partners</li> </ul>

Unit name	Research Themes/Focus	National/International engagement/collaboration
Centre for Biostatistics	<ul style="list-style-type: none"> <li>• Methodological research into novel statistical methods &amp; models</li> <li>• Applied research on health, medical, epidemiological &amp; biological data</li> </ul>	<ul style="list-style-type: none"> <li>• NUI Galway (SFI-funded Bio-SI project)</li> <li>• National &amp; international research partners</li> </ul>

### Health Systems Research Centre and Strategic Health Care Management Research Group

At UL, two research groups, both established in 2006, conduct research in health systems and health care management. The *Health Systems Research Centre* undertakes collaborative activities with health sector stakeholders that can contribute relevant research to theory and practice in health care policy, organisation and the delivery of system. The research focus of the Centre is on evidence-based policy and practice in care/support systems. The Centre currently has on-going projects on experience of ageing in the community, determinants of effectiveness of community mental health teams and customised QI Frameworks for Clinical Directorates. Each of these projects has both academic, HSE, public and voluntary sector partners, as appropriate. The Centre is the Irish consultant for the EU FP7 Concerted Action project Health Services Research into European Policy and Practice.

The *Strategic Health care Management Research Group*, within the Kemmy Business School fosters research in health care management, leadership and performance. The Group collaborates with the practitioner community and uses a range of methods to ensure that findings can be implemented by those in a position to instigate change. On-going projects include work on determinants of effectiveness in community mental health teams, in collaboration with the Health Systems Research Centre, and analysis of high performance work systems within Intellectual Disability Care Centres in Ireland.

### Department of Nursing and Midwifery

The UL Department of Nursing and Midwifery is located within the Faculty of Education and Health Sciences. While much of the research activities of the department are focused on improvements in clinical and reflective practice, there is a research strand in *Health Promotion Policy and Practice*, in particular as it relates to mental health. The Department offers undergraduate training in General, Mental Health and Intellectual Disability Nursing and a BSc in Midwifery. The School also offers a range of clinically orientated postgraduate Diplomas/MSc although none of these are of specific relevance to this review.

### Department of Economics

Within the Department of Economics there is a small but growing interest in health economics, with current research including measurement of service delivery accurately using micro costing methods, HTA, and evaluation of the costs of dementia care provision in Ireland, all of which are conducted in collaboration with medical colleagues and cognate academics in other institutions, both nationally and internationally.

### Centre for Biostatistics

The Centre for Biostatistics within the UL School of Mathematics aims to create a Centre of Excellence in Statistical and Biostatistical Science by combining statistical expertise in the collaborating departments in NUI Galway and UL. The Centre aims to benefit the health, medical, epidemiological and biological sectors by conducting methodological research into novel statistical methods and models and applied research which aims to put methodological research into practice. The Centre also offers statistical support to researchers throughout the university.

## 2.4.10 University of Ulster

At the University of Ulster (UU), PHR and HSR research is focused primarily in the Institute of Nursing Research and the Psychology Research Institute. Other academic units across the campus may have small research projects of relevance to this review, but these are not detailed here.

**Table 2.13 Summary description of UU academic disciplines conducting PHR and HSR**

Unit name	Research focus in PHR or HSR	National/International engagement/collaboration
Institute of Nursing Research	<ul style="list-style-type: none"> <li>• Public health policy &amp; practice</li> <li>• Development, organisation &amp; delivery of health care in disability &amp; ageing</li> <li>• Service needs in chronic illness</li> <li>• Cardiac rehabilitation</li> <li>• Health technology &amp; informatics</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Health &amp; Social Care</li> <li>• Patient Organisations</li> <li>• National &amp; international research partners</li> </ul>
Psychology Research Institute	<ul style="list-style-type: none"> <li>• Psychosocial indicators of diabetes, diet &amp; mental health</li> <li>• Drug abuse</li> <li>• Mental health statistics</li> <li>• Evaluation of interventions</li> </ul>	<ul style="list-style-type: none"> <li>• WHO Consortium on Mental Health</li> <li>• Health &amp; Social Care</li> <li>• National &amp; international research partners</li> </ul>

### Institute of Nursing Research

The Institute of Nursing Research (INR) is a large multi-professional centre in the UU School of Nursing. The INR is one of 17 Research Institutes (RIs) created in 2005 by UU and was ranked joint 5th out of 43 institutions in the last research exercise (RAE) in the United Kingdom. Nursing research in the School of Nursing is carried out through the INR, and is organized into four Recognised Research Groups (RRGs) all of which have elements relevant to this review. The membership of these groups also comprise individuals from a number of other disciplines and professions such as general practice, sociology, psychology, social work, rehabilitation sciences, epidemiology, education, informatics and staff from the service sector.

The *Public Health and Primary Care RRG* conducts research aimed at generating knowledge to inform public health policy and practice. Members come from backgrounds in nursing and midwifery, general practice, health promotion, public health, epidemiology, statistics, health economics and sociology. On-going research in the RRG focuses on primary care interventions for health gain, health care policy, assessing and influencing health behaviours, mental health, and analysis of socio-economic inequalities in pregnancy outcomes including low birth weight, stillbirths and infant mortality. The *Working with Older People RRG* and the *Developmental Disabilities and Child Health RRG* both focus on needs, development, organisation and delivery of services for older people and for people with disability and their families. Finally, the *Managing Chronic Illness RRG* conducts research on the care and service needs of people suffering from type 2 diabetes, cancer, trauma and critical illnesses that lead to long-term disability, Parkinson's disease and HIV. Current research projects include cost-effective analysis of health services for chronic illness, the provision Palliative care in chronic illness, cardiac rehabilitation, and development of methodology, especially in health technology and informatics that can enhance chronic illness care services.

Postgraduate research education within the UU School of Nursing is organised and delivered through the INR. Within the INR research topics are organised around the four RRGs such that each offers a wide range of educational provision, developed to permit flexibility in relation to admissions, modes

and levels of study, and exit routes. The INR coordinates a Diploma/Masters in Health Promotion and Population Health, a Diploma/Masters in Palliative Care, a distance-learning MSc in Health and Social Care (Primary Care and General Practice and Medical Revalidation Framework - Primary and Secondary Care) Pathways as well as a number of specialist professional development diploma and masters courses for nurses, midwives and other health care professionals.

### **Psychology Research Institute**

Within the newly established Psychology Research Institute at UU the *Health Research Group* (HRG) is the largest of the four research groups. The research work of this group encompasses a wide variety of investigations, including a series of mental health studies in partnership with the WHO Consortium on Mental Health; drug misuse in the Republic of Ireland, geographical mapping and psychosocial indicators associated with diabetes, diet and mental health amongst older people and mental health statistics. The HRG also has a strong reputation in the field of evaluation and undertakes independent, scientific assessments of health-related interventions, such as diabetes care and alcohol treatment programmes. The School of Psychology, of which HRG staff are members, offers an MSc in Psychology (Mental Health) which aims to enhance student skills and knowledge in areas of applied psychology related to mental health and provide a foundation for students wishing to enter further professional training in Health Psychology, or to posts in the public or private sector that involve the application of psychology to mental health issues.

## 2.5 Inventory of non-higher education research centres and organisations

While the bulk of research in the areas of PHR and health services/systems management and organisation take place within the higher education institutions in Ireland, there is significant research activity being supported or undertaken elsewhere in the health research system, much of which is focused on informing policy formulation and practice improvement. This section details the principal organisations contributing PHR and HSR evidence outside the higher education sector.

**Table 2.14 Summary description of PHR and HSR being conducted or commissioned by non-higher education organisations**

Organisation name	Research Focus	National/International engagement/collaboration
ESRI	<ul style="list-style-type: none"> <li>• Children's longitudinal survey</li> <li>• Economic evaluation</li> <li>• HIPE research outputs</li> <li>• Health policy</li> </ul>	<ul style="list-style-type: none"> <li>• Government departments</li> <li>• National &amp; international research partners</li> <li>• HSE</li> <li>• TILDA Survey partners</li> <li>• SLÁN Survey partners</li> <li>• Growing Up in Ireland Survey partners</li> </ul>
IPH	<ul style="list-style-type: none"> <li>• Health inequalities</li> <li>• Public health policy &amp; strategy</li> <li>• Population health observatory</li> </ul>	<ul style="list-style-type: none"> <li>• UKCRC Centre of Excellence for Public Health</li> <li>• HRB Centre for Diet &amp; Health</li> <li>• National &amp; international research partners</li> </ul>
HRB	Research based on information systems relevant to: <ul style="list-style-type: none"> <li>• Alcohol &amp; Drugs, Disability &amp; Mental Health</li> <li>• Commissioned studies on issues of policy importance for stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Irish national focal point for the European Monitoring Centre for Drugs &amp; Drug Addiction</li> <li>• DoH</li> <li>• HSE</li> </ul>
DoH/Department of Children & Youth Affairs	<ul style="list-style-type: none"> <li>• Child health &amp; well-being</li> <li>• Health of the traveller community</li> <li>• Practice &amp; standards in health care provision</li> <li>• National Longitudinal Study of Children in Ireland</li> </ul>	<ul style="list-style-type: none"> <li>• ESRI</li> <li>• Voluntary sector/agencies</li> <li>• University research teams</li> <li>• HSE</li> <li>• NUI Galway</li> </ul>
HSE	<ul style="list-style-type: none"> <li>• Health intelligence</li> <li>• Public health &amp; Health promotion</li> <li>• Epidemiology &amp; surveillance</li> <li>• Primary &amp; community care</li> <li>• Chronic disease prevention &amp; management</li> </ul>	<ul style="list-style-type: none"> <li>• Health professionals</li> <li>• HPSC</li> <li>• HSE-associated agencies</li> <li>• University partners</li> <li>• Public health consultants</li> </ul>
HIQA	<ul style="list-style-type: none"> <li>• Quality assurance</li> <li>• Accreditation</li> <li>• Health technology assessment</li> <li>• Health information</li> </ul>	<ul style="list-style-type: none"> <li>• DoH</li> <li>• HSE</li> <li>• National &amp; international research partners</li> </ul>
National Centre for Pharmacoeconomics	<ul style="list-style-type: none"> <li>• Pharmacoeconomic assessment &amp; evaluation</li> <li>• Drug utilisation trends</li> <li>• Cost of care studies; Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• HSE</li> <li>• HIQA</li> <li>• National &amp; international research partners</li> </ul>
Department of Agriculture, Food & Fisheries	<ul style="list-style-type: none"> <li>• Food safety</li> <li>• Food &amp; health</li> <li>• Functional Foods</li> </ul>	<ul style="list-style-type: none"> <li>• HRB</li> <li>• National &amp; international research partners</li> </ul>

Organisation name	Research Focus	National/International engagement/collaboration
EPA	<ul style="list-style-type: none"> <li>• Environment &amp; health</li> <li>• Potable water quality</li> <li>• Socioeconomic impacts of pollution</li> <li>• Environment impacts on health</li> </ul>	<ul style="list-style-type: none"> <li>• University sector</li> <li>• Industry sector</li> </ul>

## 2.5.1 Economic and Social Research Institute

The Economic and Social Research Institute (ESRI) is an independent research institute in the social sciences and economics with a primary focus on research on economic and social change in Ireland to inform public policy-making and civil society. Health research at the ESRI is generally undertaken on a multidisciplinary basis, often involving collaborations with colleagues in the universities or in the health sector. The ESRI is a partner in a number of projects of major national and international significance including the Growing Up in Ireland (GUI) Study, and two major national epidemiological studies, SLÁN '07: a National Health and Lifestyle Survey (with RCSI, UCD, UCC and NUI Galway) and TILDA, the Irish Longitudinal Study of Ageing (with TCD, DKIT, NUI Galway, RCSI, UCD and WIT). The ESRI is a partner in a number of Programme for Research in Third Level Institution (Cycle 5) awards relevant to PHR and HSR policy. Under the recently signed strategic alliance with TCD, health researchers at the ESRI hold adjunct posts in the Department of Health Policy and Management. In 2010, the Director of the ESRI chaired an Expert Group on Resource Allocation in the Irish Health Services, which was appointed by the then Minister for Health, Mary Harney.

With regard to health research, the ESRI plays an important role in providing evidence and analysis for policy in PHR and HSR specifically. The ESRI, in association with the DoH and the HSE, hosts and manages the HIPE (Hospital In-patient Enquiry) System and the National Perinatal Reporting System (NPRS). HIPE is a database designed to collect demographic, clinical and administrative data on discharges and deaths from acute hospitals nationally while the NPRS collects information on all births nationally. The health research programme draws on these and other national and international data sources to understand important policy issues around patterns of health status and the delivery and use of health care services. Research on health status focuses on the determinants of health and the interaction between lifestyles and health. Core projects in this area include child health and development in Ireland, using GUI data (in collaboration with QUB), analysis of SLÁN data on issues including migrant health, smoking behaviour, diet and nutrition, and research on sports participation and others.

Health systems research focuses on equity and efficiency in health service utilisation and delivery, resource allocation processes, health care financing models and chronic disease management. Recent projects in this area include the provision and use of health services (in collaboration with UCD and UU); analysis of resource allocation and financing in the evidence report which supported the work of the Expert Group on Resource Allocation and Financing in the Health Sector; the impact of demographic change on health service needs up to 2020; examination of hospital costs as part of the EuroDRG project; and analysis of caesarean section rates in Ireland. Research in chronic diseases includes the Irish Heart Foundation supported project on the cost of stroke in Ireland (in collaboration with the RCSI).

## 2.5.2 Institute of Public Health in Ireland

The Institute of Public Health in Ireland (IPH) was established in 1998 to promote cooperation for public health between Northern Ireland and the Republic of Ireland. The IPH works with a range of partners to bring people and organisations from across the island together to promote collective action for sustained improvements in health, with a particular focus on tackling inequalities in health.

The IPH is a key partner in two recently established research centres, the UKCRC Centre of Excellence for Public Health (Northern Ireland), one of five UK centres, and the HRB Centre for Diet and Health Research (with UCC) which aims to provide evidence based policy for diet and nutrition policy in Ireland. The All-Ireland Electronic Health Library (AleHL), a network of interoperable websites across the island of Ireland, is a key resource hosted by the IPH. It contains knowledge resources (policies and strategies, research and evaluation reports and qualitative and quantitative datasets) related to health and social well-being from the so-called 'grey literature'. The AleHL aims to support effective decision-making in health and social well-being by making it easier for people to bring together all types of health information that are distributed through websites on the island. The library is supported on an on-going basis by Population Health Observatory data, also gathered by the IPH, and is part of the Observatory's efforts to support effective decision-making. The IPH conducts impact assessments, develops policy briefing papers, participates in many advisory groups on public health and hosts the Public Health Policy Centre and the Centre for Ageing Research Development in Ireland.

## 2.5.3 Health Research Board

Under their *Strategic Business Plan 2010-2014* the HRB no longer conducts intramural research in the areas of PHR and HSR. However, they continue to provide analysis of, and reports on, the national databases that they manage on behalf of the DoH.

These are:

- The Drug-Related Deaths Index, which is a census of drug-related deaths (such as those due to accidental or intentional overdose) and deaths among drug users (such as those due to hepatitis C and HIV) in Ireland. It also records alcohol-related deaths.
- The National Drug Treatment Reporting System, which is an epidemiological database on treated drug and alcohol misuse in Ireland. It was established in 1990 in the Greater Dublin Area and was extended in 1995 to cover all areas of the country.
- The National Intellectual Disability Database and the National Physical and Sensory Disability Database, which collect information on the demographic profile, receipt of, or need for, specialised health services for people with intellectual disability (NIDD) and physical or sensory disability.
- The National Psychiatric In-Patient Reporting System and national psychiatric inpatient database in Ireland, which records data on all admissions to, and discharges from, psychiatric inpatient facilities in Ireland annually.

The HRB is also the Irish national focal point for the European Monitoring Centre for Drugs and Drug Addiction.



## 2.5.4 Other centres and agencies

### Department of Health/Department of Children and Youth Affairs

The Department of Health (formerly the Department of Health and Children) (DoH) primarily funds health research via its statutory agency the HRB. However, it also commissions public health research directly in the policy-supportive areas of health of the traveller community, and practice and standards in health care provision and provides core funding to the ESRI to maintain the HIPE database of in-patient admissions to Irish hospitals.

The Department of Children and Youth Affairs (formerly the Office of the Minister for Children and Youth Affairs within the DoHC) has lead responsibility for the implementation of a national children's research programme, which aims to facilitate the achievement of a better understanding of how children grow up in Ireland, including both their individual and shared needs, and commissions research directly in the policy-supportive area of child health and well-being. The overall programme comprises capacity building, the development of a data and research infrastructure around children's lives and a commissioned research programme. Within each of these areas, public health is a core focus. The DCYA supports the National Longitudinal Study of Children in Ireland (NLSCI) and provides core funding to the Children's Research Centre at TCD. The DoH and the DCYA provide a small number of scholarships and fellowships each year for research in support of relevant policy areas.

### Health Service Executive

The HSE is the national provider of health and social care services in hospitals and communities, with over 110,000 frontline, administrative and managerial staff. While the HSE does not manage a dedicated research budget, it undertakes public health research through its consultants in public health and allied health professionals with a remit in this area, primary care practitioners, the Health Protection Surveillance Centre and through programmes such as the Crisis Pregnancy Programme.

The Health Intelligence Unit<sup>13</sup> within the HSE is tasked with providing the evidence base of health through robust data and literature analysis, with a particular emphasis on supporting best quality in health care provision and health improvement. Through the development of Health Atlas Ireland, Population FactFile and the Health Intelligence website a large amount of information and knowledge is provided to many stakeholders within the HSE. This involves collating information from numerous sources and presenting the results in useful ways to HSE stakeholders. The Unit is also concerned with creating an interface between policy and service provision through knowledge brokering activities within the HSE. The Health Intelligence Unit has been involved in providing information for a number of service reviews, in collaboration with specialist external consultants. Such reviews include: Bed Utilization Study, Dublin Maternity Hospital review, North Eastern Hospitals review and the National Wound Guidelines project. It is actively engaged in providing analyses of service use at national, regional and local levels.

### HIQA

HIQA undertakes or commissions research to support its work in quality assurance, accreditation, health technology assessment and health information. Work undertaken in 2010 included a health technology assessment of a population-based colorectal cancer programme in Ireland and an evaluation of resource use in cancer screening programmes in Ireland, publication of recommendations on the development of a Unique Health Identifier for health information systems in Ireland and of a catalogue of national health information sources in Ireland.

<sup>13</sup> See <http://www.healthintelligence.ie>



**National Centre for Pharmacoeconomics**

The National Centre for Pharmacoeconomics, established in 1998 with DoH (formerly DoHC) funding and now supported by the HSE, is based at the James Connolly Memorial Hospital. The aim of the centre is to promote expertise in Ireland for the advancement of the discipline of pharmacoeconomics through practice, research and education. The Centre conducts economic evaluations of new and existing technologies (e.g. pharmaceuticals, vaccines and diagnostics) and since September 2009 in collaboration with the HSE Corporate Pharmaceutical Unit (HSE-CPU) they consider the cost effectiveness of all new medicines following receipt of an application for reimbursement under the Community Drugs Schemes. The Centre education and training programme in pharmacoeconomics includes an introduction to methods and the use of economic evaluation as well as analysis of drug utilisation data in the Irish healthcare setting.

**Department of Agriculture, Fisheries and Food**

DAFF, via its public good research programme known as the Food Institutional Research Measure (FIRM), is an important national funding body for food research in third level colleges and research institutes. Research areas funded by FIRM include Food Safety, Food and Health, Functional Foods. DAFF co-funds a number of food and health initiatives with the HRB. In addition, the Marine Institute, which receives its funding from DAFF, supports a small number of research projects in the area of marine food safety.

**Environmental Protection Agency**

The EPA, via its research stream known as the Science, Technology, Research and Innovation for the Environment (STRIVE) Programme supports a number of public health projects, including environment and health, potable water quality, socioeconomic impacts of pollution, and environment impacts on health. This research is conducted primarily in the higher education sector and the environmental industry sector. The STRIVE programme is funded by the Irish Government under the National Development Plan 2007-2013.

# Chapter 3 Mapping of competencies and training for PHR and HSR in Ireland

## 3.1 Introduction

This chapter describes the outcomes of a survey of researchers based in, or affiliated to, higher education institutions, and where it was possible, researchers in non-higher education organisation. The purpose of the survey was to explore their educational pathway into either PHR or HSR and their current educational levels and skills. This chapter also maps the current training opportunities available to PHR and HSR researchers at all levels of the career path. The survey instrument used to collect this data is described in Appendix 4.3.

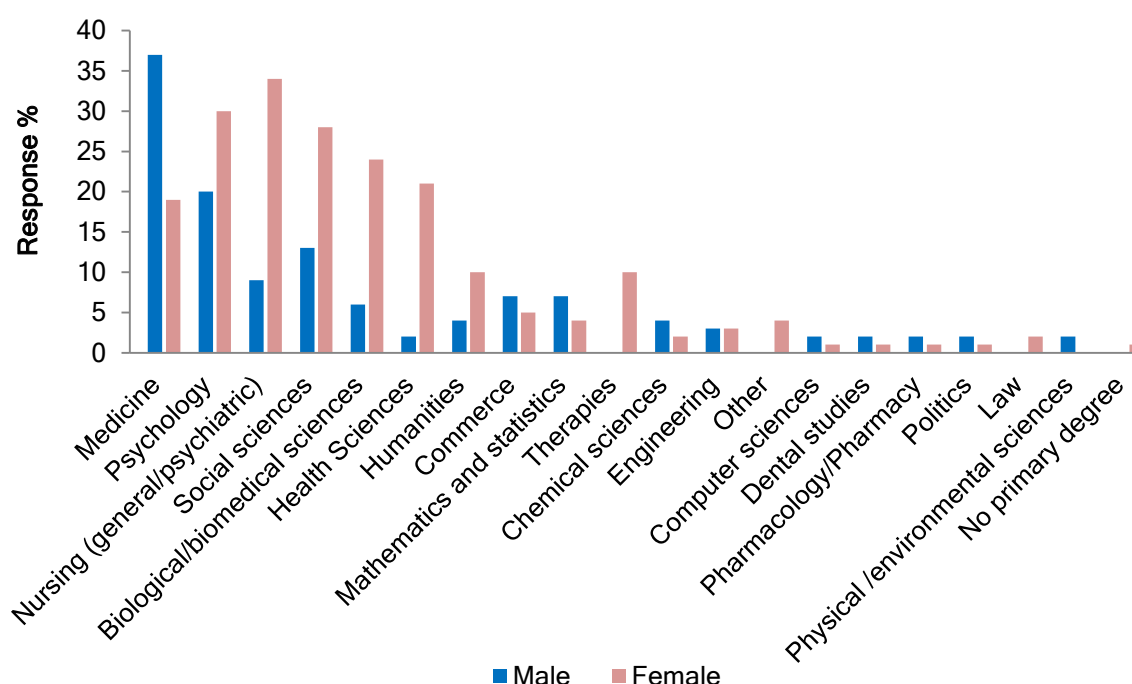
### Key observations:

- A gender split along traditionally male- or female-associated professions would appear to persist in the Irish system, with a higher proportion of male respondents observed in medicine, commerce, chemical sciences, mathematics and statistics, computer science, dentistry, politics and environmental sciences, while the number of female respondents was greater in nursing, social sciences, biological and health sciences, humanities and therapies.
- The majority of respondents who subsequently developed research careers in PHR or HSR indicated that they obtained their primary degrees in one of six subjects, namely medicine, psychology, nursing, social sciences, biological or biomedical sciences or health sciences.
- While the bulk of respondents in academic settings (with or without a clinical component to their work) held a Masters or PhD degree (or both), a surprising number (36 per cent) reported that they did not have any formal training at post-graduate level but rather developed their skills experientially.
- There are limited opportunities for early stage training in PHR and HSR at present, with the HRB being the primary funder of capacity building initiatives in these areas, and targeted training at both post-graduate and professional level may need to be increased.
- The HSE was identified as having a vital role in training for PHR and HSR, but is currently weak in this area, with no clear career structures or mechanisms to facilitate health professionals in developing their research potential.
- Areas in which skills deficits were identified include health economics, biostatistics, epidemiology, qualitative skills, randomised control trials methods and intervention research<sup>14</sup>,

<sup>14</sup> **Intervention research** is an emerging field of research in the social sciences that integrates approaches to research which seek to yield results that can be put to practical use by practitioners, administrators and policy makers (see Rothman J and Thomas EJ (1994)). It focuses on the development of knowledge about interventions, the design and adaption of new and existing interventions and packaging and disseminating knowledge about innovative interventions.

## 3.2 Skills and competencies of PHR and HSR researchers

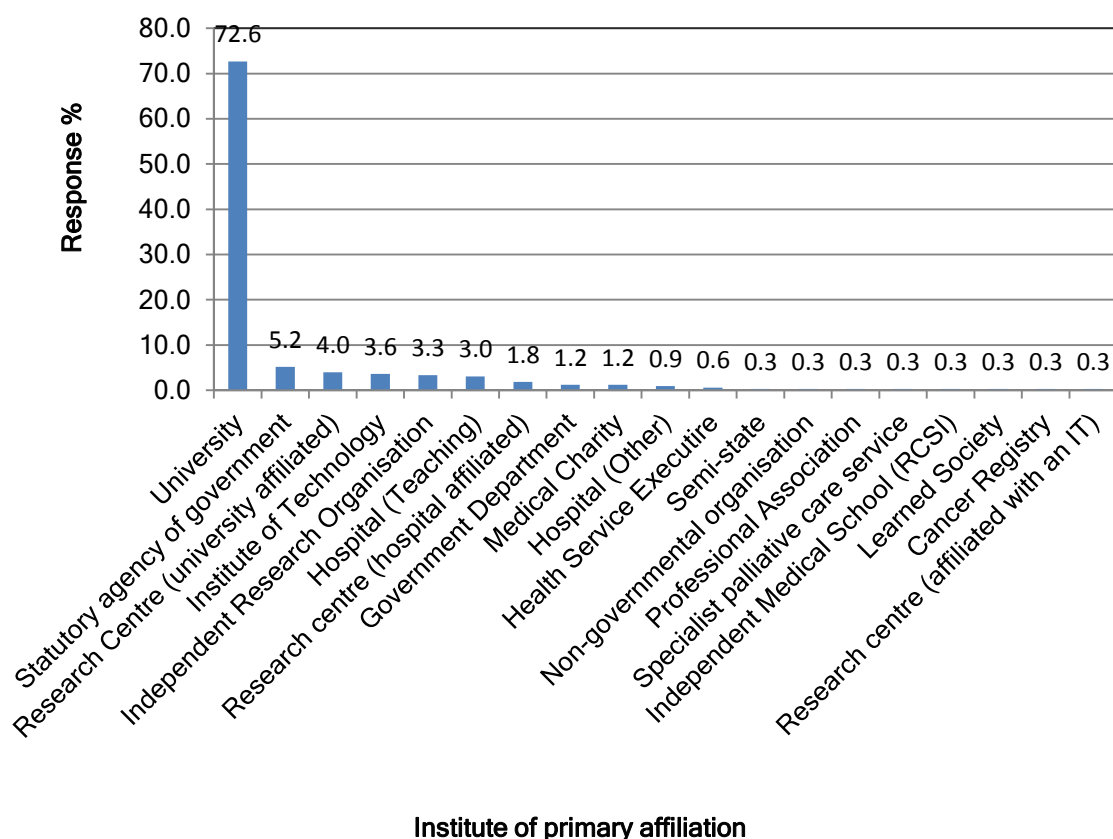
The skills and competencies survey achieved an overall response rate of 69 per cent (330 respondents), of whom approx. 2/3 of respondents were female and 1/3 were male. However, the gender split was not even across disciplines and tended to break along stereotypical lines (see Figure 3.1). Male respondents outnumbered females in medicine, commerce, chemical sciences, mathematics and statistics, computer science, dentistry, politics and environmental sciences. On the other hand, female respondents outnumbered males in all other disciplines and in particular nursing, social sciences, biological and health sciences, humanities and therapies.



**Figure 3.1** Gender breakdown by discipline of respondents to skills survey

In keeping with the observations of Chapter 2, 76.6 per cent of respondents were from universities or research centers affiliated with a university. A further 5.7 per cent of respondents were affiliated with a teaching or voluntary hospital or research centre associated with a hospital, while 3.9 per cent of respondents were based in an Institute of Technology. The remaining 13.8 per cent of respondents were spread across statutory agencies, government departments, independent research organisations, a private medical school, NGOs, the HSE, professional associations and the voluntary sector (see Figure 3.2.)

Analysis of these respondents showed that 48 per cent were qualified to Masters level and 44 per cent were qualified to doctoral level. 37 per cent held positions as senior lecturer or lecturer, 20 per cent held positions at Professor or Associate Professor level, while 18 per cent held a clinical post with an academic element (e.g. academic medical or nursing position).

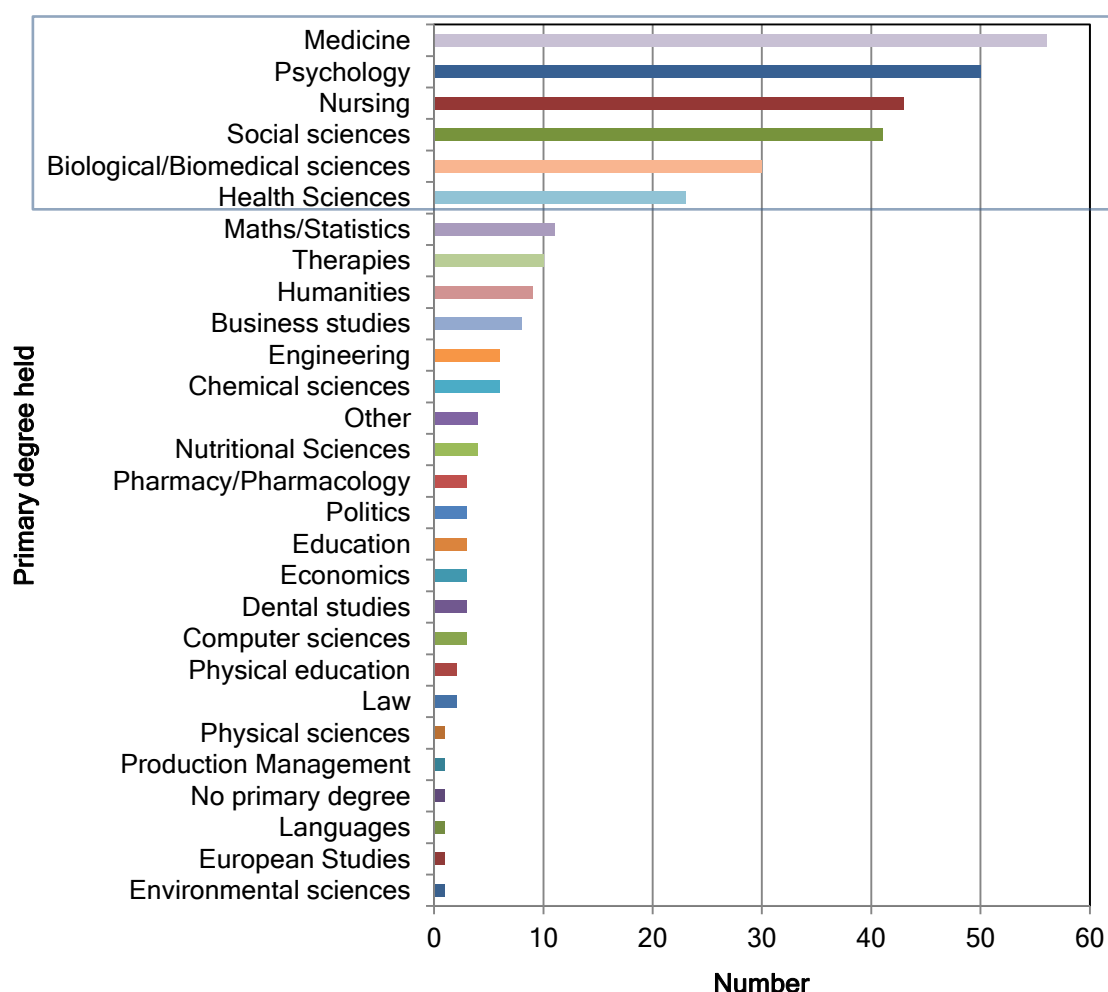


**Figure 3.2** Primary affiliation of respondents to skills survey

It should be noted that this survey does not present a comprehensive inventory of researchers outside the higher education sector, since identifying such researchers was often difficult, especially within the HSE and government departments. The outcomes of the survey might have been somewhat different if comprehensive coverage could have been achieved right across the health research system. Nonetheless, the survey outcomes do give some indication of the types of disciplines in which those engaged in PHR and HSR have training, both at primary degree level and beyond.

### 3.2.1 Primary degree of respondents

The majority (74 per cent) of respondents who subsequently developed research careers in PHR or HSR indicated that they obtained their primary degrees in one of six subjects, namely medicine, psychology, nursing, social sciences, biological or biomedical sciences or health sciences (see Figure 3.3). A further 6.6 per cent of respondents who subsequently developed research careers in PHR or HSR obtained their primary degrees in a therapies discipline, dental studies, nutrition, physical education or pharmacy/pharmacology. Beyond health-related disciplines, the remaining 19.4 per cent of respondents held primary degrees in a broad range of non-health related disciplines that spanned the physical and chemical sciences, business, law and politics.



**Figure 3.3** Primary degree held by respondents

Therefore, while a primary degree in a health-related discipline would appear to be the normal route into a research career in either HSR or one of the disciplines within PHR, this was not a pre-requisite and graduates from many disciplines not traditionally associated with health research have a contribution to make to PHR and HSR.

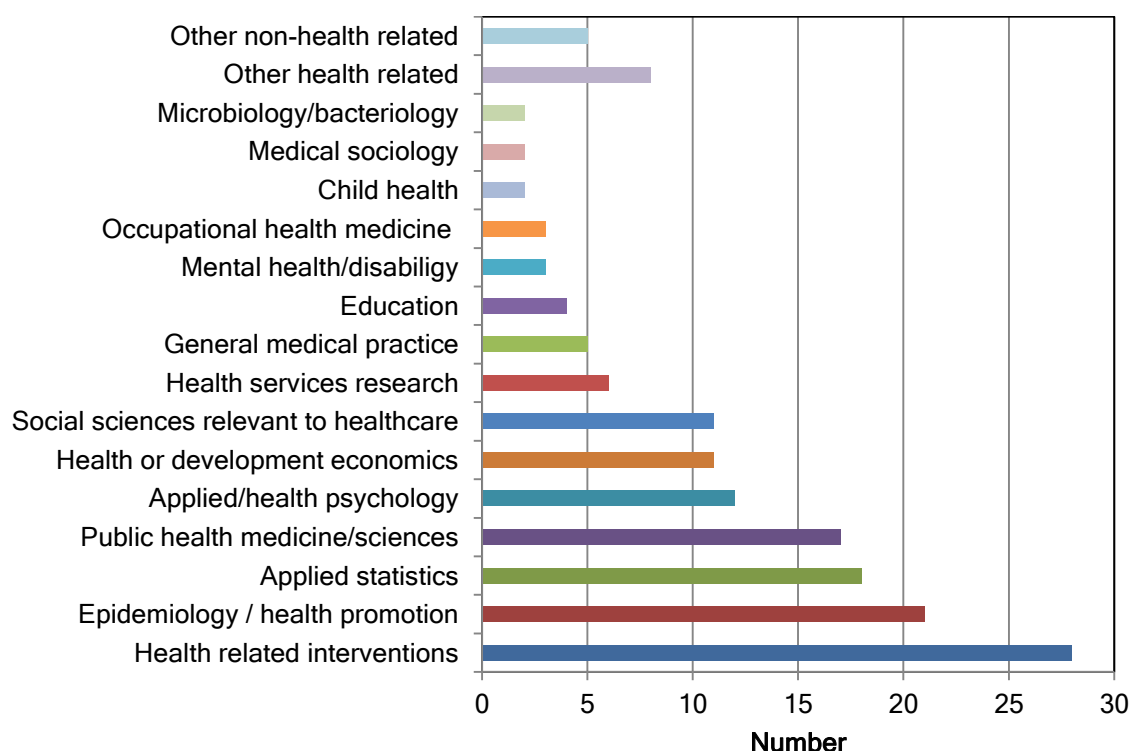
### 3.2.2 Further training towards a research career in PHR and HSR

The results of the survey indicated that in terms of research training for non-clinical academics i.e. academic researchers who do not also have a clinical practice element to their work, 30 per cent advanced to masters' level and 26 per cent advanced to PhD level directly from their primary degree while a further 21 per cent held both a masters and a PhD in disciplines that would be relevant to PHR and HSR-focused research. 23 per cent reported that they did not have any formal training at post-graduate level but rather developed their skills experientially. For respondents whose primary degree was in a clinical field the results were similar for masters and PhD training. 29.5 per cent advanced to masters' level and 28 per cent advanced to PhD level directly from their primary degree. Only 6.5 per cent reported that they held both a Master's degree and a PhD in relevant disciplines. Surprisingly, given the survey population who were primarily based in third level institutions, 36 per cent reported

that they did not have any formal training at post-graduate level but rather developed their skills experientially.

### Masters level training

Figure 3.4 shows the topics in which respondents obtained masters degrees. 'Other health related' refers to clinical health sciences, nutrition, food safety, global health, molecular medicine, participatory/action research, pathology and physiotherapy, each of which was identified by a single respondent. 'Other non-health related' refers to communications, human resources, peace studies, politics and legal studies, which were also identified by a single respondent.



**Figure 3.4** Further formal training at masters level

Masters training in health-related interventions, epidemiology and/or health promotion, biostatistics, public health medicine and applied health psychology accounted for 60.8 per cent of reported topics. Health or development economics, social sciences relevant to health care, health services research, and general medicine accounted for a further 21 per cent of topics in which formal training was sought. The remaining 18.2 per cent of reported masters training was spread across a broad range of both health-related and non-health related disciplines. It is important to note that these results describe the 'centre of gravity' of masters' courses.

Of 158 respondents (48 per cent) who indicated that they had obtained training to masters level, 109 identified single-subject masters courses (as exemplified in Figure 3.4), while 18 respondents identified masters-level training courses that covered at least 2 topics, for example general practice and health services research; applied statistics and health psychology; epidemiology and health promotion; public health medicine and health promotion and so on. In the case of the remaining 31 responses, their masters' course covered multiple topics. The similarity of topics selected by respondents as best describing the content of their course would suggest that they were describing

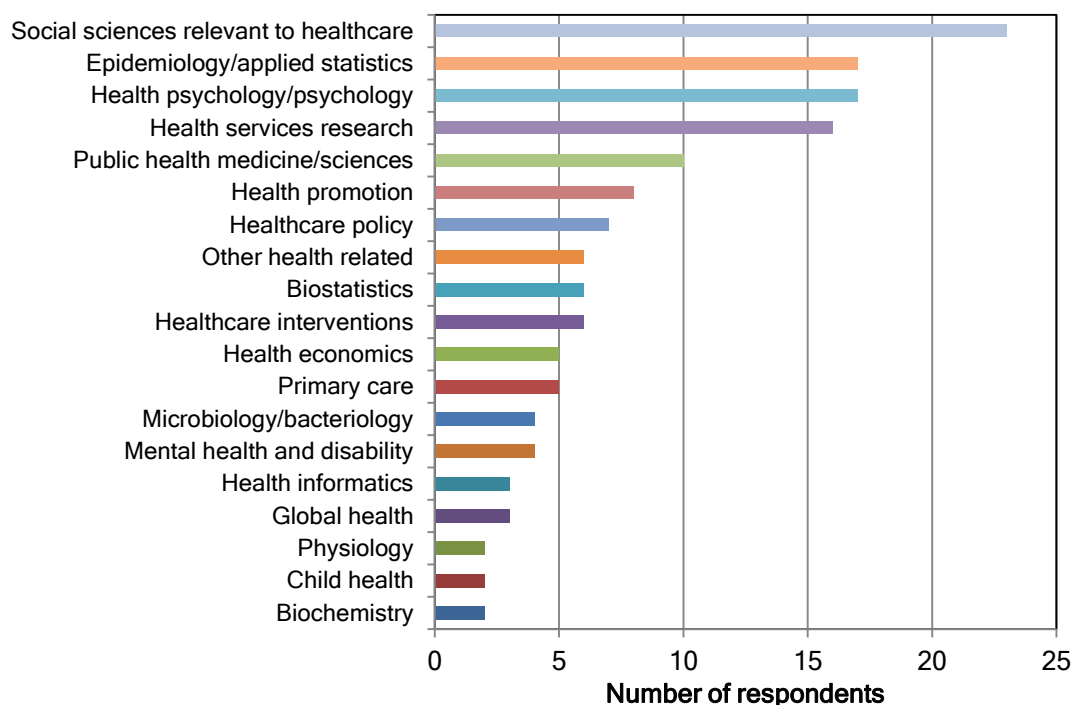
similar course types. Two examples below typify the multi-subject course descriptions provided by respondents.

Applied statistics, Clinical trials methods/conduct, Complex intervention methods, Ethics in health care, Epidemiology, Health care policy, Health economics, Health informatics, Health promotion, Health technology assessment, Inequality and social care, Global health, health services organisation/ management
General medical practice, Clinical trials methods/conduct, Ethics in health care, Health promotion, Inequality and social care, Medical anthropology, Medical sociology, Mental health and disability, Primary care, Programme development and evaluation, Social inequality

Respondents were not asked to identify the title of the masters' course undertaken by them or where that course was offered, which was a flaw in the survey instrument. Lack of such specific information prevented mapping of further training onto the educational pathway of researchers currently engaged in PHR or HSR in Ireland. A considerable number of such relevant courses were identified during this mapping study and are described in Appendix 2.

### PhD level training

146 respondents (44.4 per cent) reported that they advanced to doctoral level training. The topics in which they undertook their doctoral studies are summarized in Figure 3.5. 'Other health related' refers to ethics in health care, gerontology, nursing, nutrition, pathology and speech therapy, each of which was identified by a single respondent.



**Figure 3.5** Topics identified for further formal training at doctoral level

Social sciences relevant to health, which accounted for 15.6 per cent of PhD level training includes inequality and social care, medical anthropology, medical geography, medical sociology and participatory/action research. Epidemiology and applied statistics, biostatistics, health psychology, HSR and health economics collectively accounted for a further 41.7 per cent of subject areas in which PhD training was undertaken. Health promotion, health care interventions, global health and health care policy together accounted for 16.5 per cent of PhDs undertaken by respondents. In terms of clinical training public health medicine and primary care accounted for 10.2 per cent of PhD-equivalent training. Within the biological sciences PhDs in topics relating to biochemistry, physiology and microbiology/bacteriology were undertaken by 5.5 per cent of respondents. Child health and mental health and disability accounted for 4.1 per cent of PhD training.

### 3.2.3 Experiential learning

While formal training is clearly critical to the development of a research career, especially in an academic environment, 'on-the-job' learning also plays an important part in honing research skills. 163 of the 329 respondents identified experiential learning as an important component of their training, beyond their primary degree, as researchers in PHR or HSR. In line with the survey results relating to formal masters and PhD training, the majority (80 per cent) of respondents who identified experiential learning as a component of their training obtained their primary degrees in medicine, psychology, nursing, social sciences, biological or biomedical sciences or health sciences.

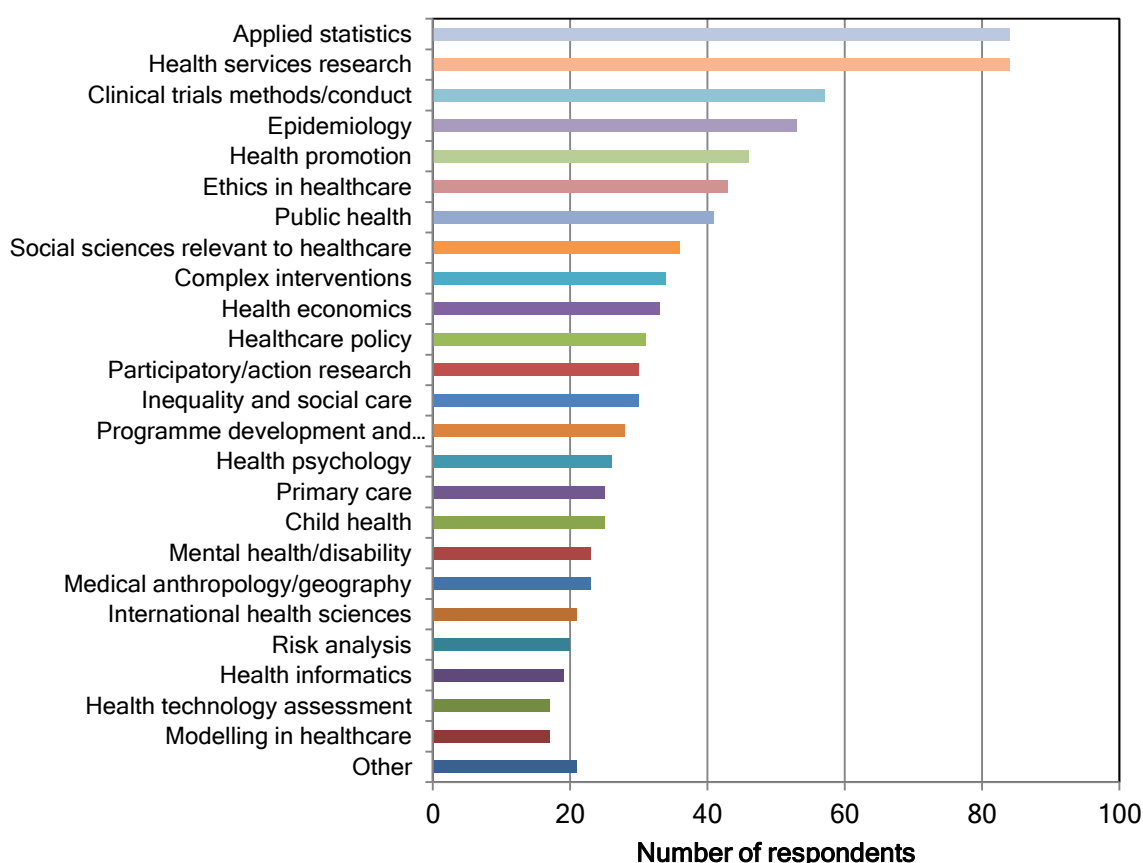


Figure 3.6 Research skills acquired through experiential learning



The type of training obtained through experiential learning spanned a broad range of topics relevant to research in PHR and/or HSR (Figure 3.6). Research methodologies in applied statistics and HSR topped the list, with clinical trials, epidemiology, health promotion, ethics in health care and public health accounting for the next five most common areas in which experiential learning played an important role.

### 3.3 Role of the HRB in training provision

This section maps current opportunities provided for early stage training in PHR and HSR, and for on-going training and career development for health care professionals. Two agencies, the HRB and the HSE emerged as having vital roles in training provision in disciplines relevant to PHR and HSR.

#### 3.3.1 Early-stage training in PHR and HSR

Training provision through PhD graduate programmes, undertaken through academic departments creates a multidisciplinary environment for students and there has been considerable progress in this regard in Ireland, with PhD programmes and graduate schools being funded by a number of agencies. The HRB *PhD Scholars Programme* was the first of its kind in Ireland and provides a good model for this approach to training. The PhD Scholars Programme in HSR supports annual cohorts of five to seven high-quality students from a wide variety of disciplines, who are trained on four-year programmes with interweaved, individualised research training and skills-development opportunities. Projects are located in various centres within the collaborating institutions (RCSI, TCD and UCC) and include ten weeks of specialist rotations in health-related data-collection agencies, relevant taught modules and a placement at an overseas agency.

Both the HRB and more recently Molecular Medicine Ireland have provided support (HRB *Clinical Training Fellowship* and MMI *Clinical Scientist Fellowship*) for newly qualified doctors who are willing to step out of their clinical training in order to complete a PhD. The *National SpR/SR Academic Fellowship Programme (NSAFP)* provides an example of an innovative and integrated approach to early-stage training of clinicians in a professional setting. This programme replaced the *HRB Clinical Training Fellowship*, and is run in partnership with the HSE, the Forum of Irish Postgraduate Medical Training Bodies and the university academic medical departments. The programme is targeted specifically at those doctors about to enter specialist training programmes but who have as an ultimate career goal a leading clinician scientist role. Successful candidates draw up a personalised training plan that will result in receipt of both a PhD and Certification of Completion of their clinical training on completion of the overall programme.

Postgraduate training also enables targeted capacity-building in emerging areas important to PHR and HSR that is currently underdeveloped in Ireland. Examples include health economics and epidemiology. The HRB has developed opportunities for strengthening international exchange and mutual learning in these areas through its participation in the Ireland-Northern Ireland-National Cancer Institute Consortium<sup>15</sup>, through which it has offered *Epidemiology Fellowships*, *Cancer Prevention Fellowships*, and *Health Economics Fellowships*, in addition to summer schools in cancer prevention and control for scientists and health professionals.

<sup>15</sup> See [http://www.allirelandnci.com/about\\_consortium/index.shtml](http://www.allirelandnci.com/about_consortium/index.shtml)

### 3.3.2 On-going training of health care professionals

Health care professional-led research is vital to meet the needs of the patient, service users and service providers and to deliver on the national ambition for a world-class health system. All health and social care professionals offer a unique and distinct contribution and all share a commitment to improving outcomes for service users and developing a better evidence base to underpin interventions. There is, therefore, a need for ongoing development of these professionals to enable them to contribute to high quality PHR and HSR. A number of Diploma and Masters Courses have been developed by academic units with a core focus in PHR and HSR, which provide training in relevant methodological skills, such as bio-statistical analysis, epidemiological methods, the design and conduct of randomised control trials, survey methodologies skills and so on (see Appendix 2). These courses, while important, are not intended to produce 'expert' researchers.

Encouraging those who already have health professional roles to develop research expertise would serve to increase capacity and would have the added benefit of developing health research as a core activity in the health services. The *HRB Research Training Fellowship for Health Care Professionals* is an example of such support for health professionals. Practitioners from all health professions are eligible to apply and research projects are co-supervised by an academic and practice-based sponsor with the requisite expertise. Funding is also provided for generic training skills and opportunities are provided to obtain specialist skills abroad. These schemes are intended to equip health care professionals to play key roles in their organisations.

The SWOT analysis conducted during this review highlighted the additional added-value for health care professionals and others involved in PHR and HSR outside the higher education sector that could be gained from existing PhD graduate programme,s through the packaging of taught courses into a menu of up-skilling modules, accessible by both PhD students and other personnel wishing to improve their research skills.

## 3.4 Role of the HSE in training provision

Even where health professionals would like to incorporate research into their professional roles, there is no clear career structure and strategy for such staff in either the higher education sector or the HSE. This is worsened by the current capping of staff recruitment and promotion in both sectors. The *Strategy for Science, Technology and Innovation* (SSTI)<sup>16</sup> has identified the lack of an attractive career structure for research-driven health professionals as a major barrier for enticing people into research. The Advisory Committee for Science, Technology and Innovation (ACSTI) has proposed a strategy to develop a career structure for researchers across the higher education, enterprise and public sector, through a researcher careers competency framework that would allow mobility between the sectors<sup>17</sup>.

The health system does not easily accommodate clinician scientists and other health and social care professionals who wish to train and carry out research in this setting, since very few health professionals have dedicated time set aside for research. The health sector also needs to build the capacity to absorb the outputs from the research conducted internally and in other sectors by ensuring that its staff are capable of assimilating research evidence into the development of policies and practice.

<sup>16</sup> Department of Enterprise, Trade and Employment (2006) *Strategy for Science, Technology and Innovation 2006-2013*. <http://www.entemp.ie/science/technology/sciencestrategy.htm>

<sup>17</sup> Advisory Science Council (2008) *Towards a framework for researcher careers*. [http://www.sciencecouncil.ie/publications/2008/title\\_3252\\_en.php](http://www.sciencecouncil.ie/publications/2008/title_3252_en.php)

In an attempt to address this deficit, the HRB currently underwrites Ireland's membership of the Cochrane Library<sup>18</sup> and associated initiatives, which provides all Irish residents with access to information on the effects of interventions on health care. The HRB augments this free access with fellowships for researchers in both academia and the health services wishing to undertake systematic reviews for submission to the Cochrane Collaboration, and shorter training courses for health professionals wishing to gain more knowledge of how to access and interpret Cochrane reviews. Increasing the ability of health professionals at service provision and managerial levels will help to ensure that they have the ability to move research evidence to improvements in practice and policy

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<sup>18</sup> *The Cochrane Library* is a collection of six databases that contain different types of high-quality, independent evidence to inform health care decision-making, and a seventh database that provides information about groups in The Cochrane Collaboration. The six databases include systematic reviews of current evidence, a register of controlled clinical trials, a register of published research methodologies, a HTA register, a database of abstracts of reviews of effects and an economic evaluation database.

# Chapter 4 Mapping of Irish funding support for PHR and HSR

## 4.1 Introduction

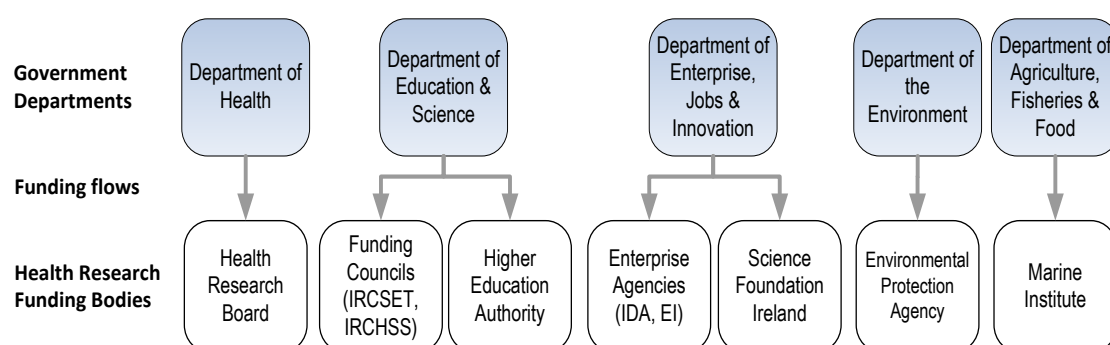
This chapter examines the current funding environment for PHR and HSR by mapping the organisations in Ireland that invest in health-related research and development, and looks at the level and type of support for PHR and HSR within the overall health research budget. Research expenditure data in this chapter was collected through a survey of research funding providers described in full in Appendix 4.1, which was distributed in both 2009 (2008 expenditure) and updated in 2010 (2009 expenditure).

### Key observations:

- The bulk of Irish health research expenditure has been in the area of biomedicine with investment in PHR and HSR remaining low.
- The HRB and DoH/DCYA are the primary funders of PHR and HSR. Where funding is provided by other agencies, its scope is limited by the remit of that agency.
- The funding models used by many Irish funding agencies relies heavily on models developed for laboratory- and specialism-based biomedical and clinical research, which are not appropriate for much of PHR and HSR.
- The scope and breadth of current health research funding needs to be expanded to include explicitly interdisciplinary research in PHR and HSR. Areas identified by this review for increased support include funding of cohort studies, longitudinal studies, programme evaluation, intervention research, practice-based research, support of translation of results into policy and practice, and randomised control trials.
- In developing R&D within the health services it will be crucial that dedicated research funding is ring-fenced in the health services budget, that the respective roles of the HRB, the HSE and the DoH in relation to research are clearly defined, and that there is appropriate coordination across these agencies.

## 4.2 Current research funding landscape

The funding situation for all types of research in Ireland has changed dramatically since the early 1990's. Health research funding now operates in a 'multi-funder' environment, alongside a new research infrastructure in higher education, a government that is actively pursuing an R&D agenda and a commitment by the HSE to develop R&D in the health services. Figure 4.1 shows the current relationship between Irish government departments and the major funding agencies supported by them. While government departments channel the majority of their research funding through their associated agencies, they may separately fund research of particular relevance to policy development within their department. For example, the DoH provided approximately €42 million to the HRB in 2008 to support a broad range of health-related projects but also allocated a further €5.1 million of research funding to a number of projects that directly supported policy development in the areas of service provision for children, Travellers and elderly people.



**Figure 4.1 Relationship between government departments and funders of health research (2009)**

The establishment of the Programme for Research in Third Level Institutions (PRTL) in 1997 was a turning point for Irish health research. Funded through the HEA, with matching private funding being provided in the initial two rounds by The Atlantic Philanthropies, PRTL has been crucial to developing research capacity and infrastructure in the higher education sector in Ireland and underpinning the programmes of other funding agencies. The first round of PRTL provided an investment of €200 million over three years, most of which went into facilities and equipment, which were starting from a very low base. Four further rounds, totalling €11,800 million, have since been awarded (2000, 2002, 2007 and 2010). Over successive rounds the emphasis of PRTL has moved from the funding of individual institutions to collaboration among institutions in order to deliver more coordinated research programmes, develop graduate education and ensure best value for the investment. A consistent feature of all rounds has been the strong showing of biomedical and health-related research, with over 40 per cent of projects in PRTL 5 being biomedicine and health oriented.

The *National Development Plan 2000-2006*<sup>19</sup> led to the establishment of SFI and the two funding councils (IRCSET and IRCHSS). The *National Development Plan 2007-2013*<sup>20</sup> incorporated the government's *Strategy for Science, Technology and Innovation* (SSTI). The SSTI itself seeks to continue the government's commitment to research by setting the agenda across the public research system and addressing specific issues around education and training, commercialisation, infrastructure, careers and innovation. One round of R&D Competitive Funding, targeted at public sector, cross departmental collaboration was also made available to support these initiatives but was not repeated.

### 4.3 Funding support for health-related research

Tables 4.1a and 4.1b present the actual expenditure in 2008 and 2009 on health-related research in its broadest sense, by major Irish funding agencies. In viewing these tables, the differing remit and focus of the agencies should be borne in mind (see Appendix 1). While not shown here, 2007 expenditure patterns were found to be very similar to those of the other two years.

<sup>19</sup> Department of Finance (1999) *National Development Plan 2000-2006*. Stationary Office, Dublin. <http://www.ndp.ie/viewdoc.asp?fn=%2Fdocuments%2Fhomepage.asp>

<sup>20</sup> Department of Finance (2006) *National Development Plan 2007-2013*. Stationary Office, Dublin. <http://www.ndp.ie/viewdoc.asp?fn=%2Fdocuments%2Fhomepage.asp>

**Table 4.1a 2008 Expenditure on 'health-related' research by major national agencies**

Research funding provider	Total R&D expenditure 2008 <sup>1</sup>	Health-related research expenditure 2008 <sup>2,3</sup>	% of total spent on health-related	Funds in areas of PHS& HSR	Expenditure on PHS & HSR research
	€ 000	€ 000	%		€ 000
Health Research Board	42,723 <sup>4</sup>	42,723	100	●	10,253
Science Foundation Ireland	160,138	53,625	33.5 <sup>5</sup>		
Health Services Executive	Unknown	Unknown	100	●	Unknown
Higher Education Authority	132,677	57,749 <sup>6</sup>	43.5	●	1,527 <sup>7</sup>
Environmental Protection Agency	11,700	2,200	18.8	●	880
Marine Institute	11,020	947	8.6	●	37
Irish Research Council for Science, Engineering and Technology	25,632	1,572 <sup>8</sup>	6		
Irish Research Council for Humanities and Social Sciences	12,500	1,000 <sup>8</sup>	8	●	500
Dept. Health and Children	5,124	5,124	100	●	5,123
Dept. Agriculture, Food & Fisheries	16,060	2,230	14	●	1,605 <sup>9</sup>
Enterprise Ireland	120,000	10,600 <sup>10</sup>	8.8		
Industrial Development Agency	47,258	26,441 <sup>11</sup>	56	●	2,201 <sup>12</sup>
<b>TOTAL</b>	<b>584,832</b>	<b>204,211</b>	<b>34.9</b>		<b>22,127</b>

- Figures describe expenditure on research projects in the 2008 calendar year. For each funding provider, project/programme funding from all sources is included, while the operational costs associated with each funding provider are excluded.
- 'Health-related' research expenditure is defined broadly as research which benefits the health of an individual, group or population through the prevention, treatment and management of illness. Such direct interventions include the development of diagnostics, pharmaceuticals, vaccines and devices and the preservation of mental and physical well-being through the services offered by the medical, nursing, and allied health professions. Health-related research may also benefit health through improvement in understanding the mechanisms underlying ill-health (either physical or mental) or the influences and impact of environment (physical, social, cultural or occupational) and behaviour on health status and outcomes.
- Scope and focus of research on 'health-related' projects differs by funding provider and reflects their statutory remit.
- This excludes funding for national health information systems managed by the HRB.
- Health related primarily medical biotechnology, pharm and medical engineering. No clinical research funded.
- Large proportion of expenditure is capital/infrastructure development. PRTL Cycle 3 amount estimated based on the percentage of health-related projects in original approval. Bioscience and Biomedical projects under PRTL Cycle 4 constituted 32 per cent of the overall Cycle 4 total.
- Estimate based on relative level of population health/health services-related activity reported by university Research Offices for PRTL Centres and Institutes on their campus.
- Estimate based on relative number of projects that could be considered health-related in its broadest sense.
- Consists primarily of research on functional foods, dietary impacts on disease and food safety and quality.
- Industrial/commercial R&D including drug development, diagnostics and medical devices, innovation partnerships, SME R&D fund and academic commercialisation fund.
- Industrial/commercial bio-science projects and TRIL
- Expenditure on Technology Research for Independent Living (TRIL) programme

**Table 4.1b 2009 Expenditure on 'health-related' research by major national agencies**

Research funding provider	Total R&D expenditure 2009 <sup>1</sup>	Health-related research expenditure 2009 <sup>2, 3</sup>	% of total spent on health-related	Funds in areas of PHS& HSR	Expenditure on PHS & HSR research
	€ 000	€ 000	%		€ 000
Health Research Board	40,127 <sup>4</sup>	40,127	100	●	10,253
Science Foundation Ireland	171,290 <sup>5</sup>	73,669 <sup>6</sup>	43		
Health Services Executive	*	*	*	●	Unknown
Higher Education Authority	111,292	36,859 <sup>7</sup>	33	●	1,527 <sup>8</sup>
Environmental Protection Agency	13,640	685	5	●	685
Marine Institute	9,660	1,470	15.2	●	37
Irish Research Council for Science, Engineering and Technology	25,600	3,551 <sup>9</sup>	13.9		
Irish Research Council for Humanities and Social Sciences	14,400	1,100	7.6	●	500
Dept. Health and Children	5,241 <sup>10</sup>	5,241	100	●	5,123
Dept. Agriculture, Food & Fisheries	15,260	4,920	32.2	●	1,605 <sup>11</sup>
Enterprise Ireland	93,460	14,641 <sup>12</sup>	15.6		
Industrial Development Authority	56,668	23,039 <sup>13</sup>	40.7	●	3,079 <sup>14</sup>
<b>TOTAL</b>	<b>556,837</b>	<b>205,302</b>	<b>36.9</b>		<b>23,346</b>

- Figures describe expenditure on research projects in the 2009 calendar year. For each funding provider, project/programme funding from all sources is included, while the operational costs associated with each funding provider are excluded.
- 'Health-related' research expenditure as defined for 2008 data.
- Scope and focus of research on 'health-related' projects differs by funding provider and reflects their statutory remit.
- This excludes funding for national health information systems managed by the HRB.
- Includes Charles Parsons Awards of €5.6M, which were not counted in 2008 expenditure.
- Health related primarily medical biotechnology, pharma, medical engineering and health-relevant ICT. No clinical research funded. For larger investments, figures estimate relative split between health-related and non-health related activities.L
- Large proportion of expenditure is capital/infrastructure development. PRTL I Cycle 3 amount estimated based on the percentage of health-related projects in original approval. Bioscience and Biomedical projects under PRTL I Cycle 4 constituted 32 per cent of the overall Cycle 4 total.
- Estimate based on relative level of population health/health services-related activity reported by university Research Offices for PRTL I Centres and Institutes on their campus.
- Describes projects in the following health-related themes: Therapeutic/pharmaceutical/diagnostic development; Health care applications of mathematical/information sciences; Research on pathogens/pathologies; Diet and lifestyle. Does not include fundamental (non-applied) research.
- This includes significant expenditure on the National Longitudinal Study of Children in Ireland (Growing Up in Ireland) and the Irish Longitudinal Study on Ageing (TILDA).
- Includes co-funding with HRB of a number of diet and health related projects.
- Industrial/commercial R&D including drug development, diagnostics and medical devices, innovation partnerships, SME R&D fund and academic commercialisation fund.
- Industrial/commercial bio-science projects and TRIL
- Expenditure on Technology Research for Independent Living (TRIL) programme



This data demonstrated that most Irish funding agencies support some research activity within the broad areas of medical and health sciences, as defined by the OECD (see Appendix 3 for a full description of this categorisation system.) Those organisations whose remit includes some element of enterprise development indicated that they also supported research in engineering and technology, and in most instances (IRCSET excluded), research within agriculture and food. Organisations whose research portfolio includes basic scientific research (not necessarily health-related in its strictest sense) indicated that they supported research activity within the natural sciences.

- Basic biomedical research is funded by SFI as well as the HRB, although in its *Strategic Business Plan 2010-2014* the HRB is moving its focus away from basic biomedical research toward patient-oriented research (applied biomedical and clinical), PHR and HSR.
- The enterprise agencies (EI and IDA) cover a very broad spectrum of applied research with potential commercial outcomes. However, much of this research would not fit within the WHO definition of health. The IDA also provide support in the PHR and HSR area through funding of the TRIL programme with Intel.
- The HEA funds infrastructure in higher education through successive rounds of the PRTLII. Research training is supported specifically by the two Research Councils (IRCSET and IRCHSS), although most agencies provide some funding for capacity building within their sector.
- The Department of Finance holds the health 'vote' (currently in the region of €15 billion per annum) on behalf of the HSE, which is primarily responsible for the delivery of health services in Ireland. The HSE is the health service environment within which most clinical research occurs. As such the HSE - or more accurately, its health professionals - receives grants from the various funding agencies listed.

A closer look at the sub-fields supported by the agencies within the broad research area of **medical and health sciences** also reflects the differing objectives of those agencies.

- As the key health research funding provider in Ireland, the HRB supports research across the full range of health-related research. Clinical research is supported through training, infrastructure, project and programme investments by the HRB, while the DoH supports policy relevant PHR and HSR.
- The HEA supports research across the range of sub-fields through its capital programmes and, more recently, has made investments in the training of clinical scientists through Molecular Medicine Institute, a consortium of medical faculties across the country.
- Unsurprisingly, the enterprise-orientated agencies (EI and the IDA) do not fund directly into basic or clinical medicine, since their focus is closer to market and includes the commercial development of medical devices, silver technologies and pharmaceuticals.
- IRCHSS supports a small number of projects in health-relevant social sciences and population health areas.

Most agencies, with the exception of the EPA and DoH, identified medical biotechnology as an area of support. This sub-field includes health-related technologies involving the manipulation of cells, tissues, organs or the whole organism (assisted reproduction), technologies involving identifying the functioning of DNA, proteins and enzymes and how they influence the onset of disease and maintenance of well-being and the development and application of biomaterials (as related to medical implants, devices, sensors).

## 4.4 Funding support for PHR and HSR.

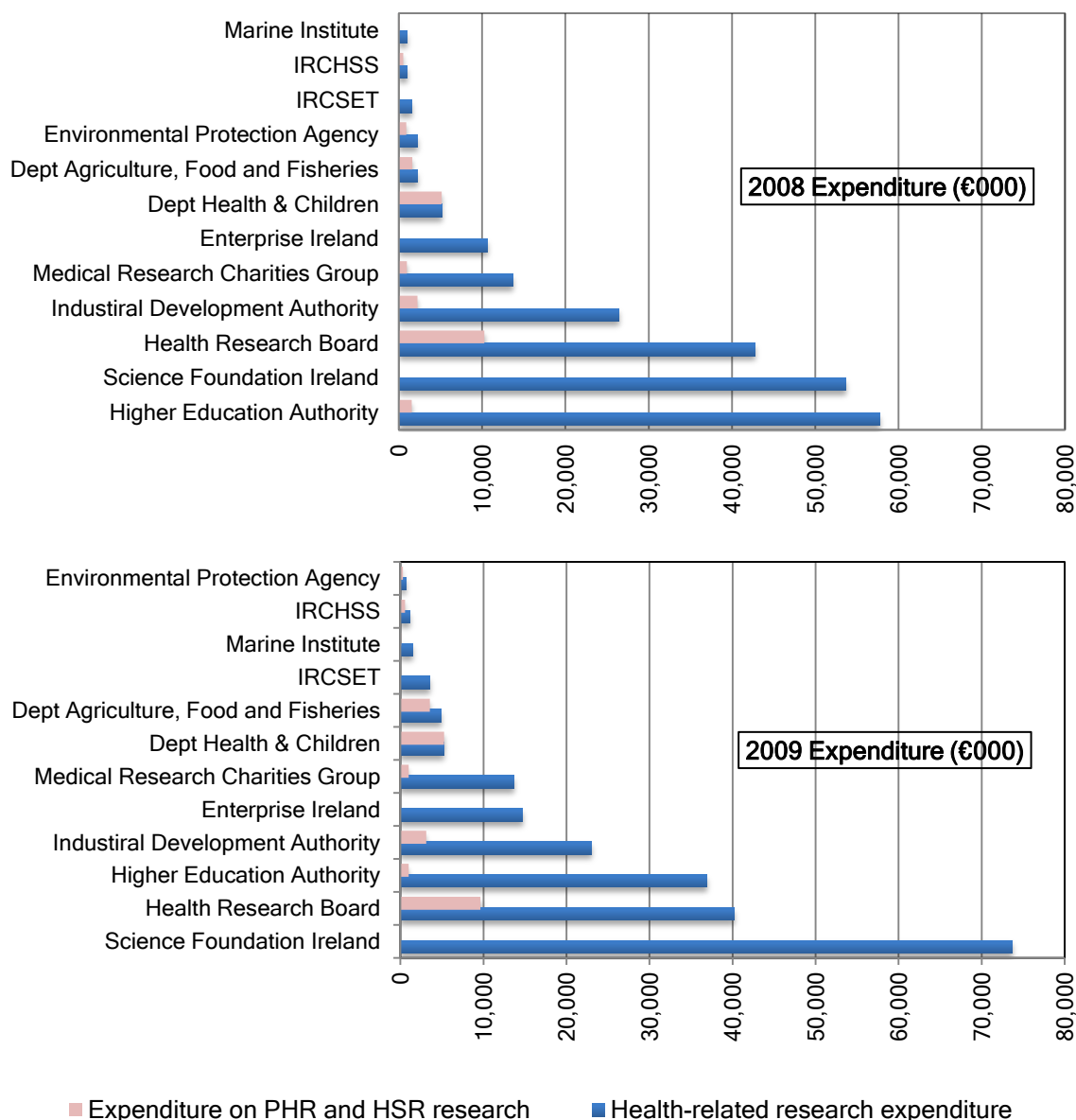
The importance of PHR and HSR research as a driver for quality, efficacy and efficiency in health care delivery and for improvement of the health of the population is not always understood at governmental level or by the public. As a result, there has been insufficient and very fragmented investment in these areas. The survey of research funding providers conducted for this review confirmed that the bulk of health-related funding is still in medical biotechnology, as defined by the OECD (see Appendix 3), with investment in PHR and HSR remaining low.

### 4.4.1 PHR and HSR funding support by public agencies

While a number of Irish public funding agencies support research in the broad health area, few of them provide specific support for PHR and HSR. Figure 4.2 presents a comparison of the 2008 and 2009 expenditure on health-related research reported by the major Irish funding agencies relative to their expenditure on PHR and/or HSR research. This clearly illustrates the low investment in PHR and HSR relative to overall health research investment and the dominance of the HRB and the DoH as funders of PHR and HSR.

In terms of PHR research expenditure:

- In both 2008 and 2009 a strong focus of DoH funding was on child health, in particular the National Longitudinal Study of Children in Ireland (Growing Up in Ireland) and a number of projects around social care issues for children. In 2009, the DoH provided support for the Irish Longitudinal Study on Ageing (TILDA). This is the most detailed study on ageing ever undertaken in Ireland. This study looks at the health, lifestyles and financial situation of almost 10,000 people as they grow older, and sees how their circumstances change over a 10 year period. The study, based at TCD, is a collaboration with an inter-disciplinary panel of scientific researchers, with expertise in various fields of ageing from higher education institutes across Ireland and from the ESRI.
- For DAFF, research in the area of PHR is focused primarily on dietary impacts on health, development of functional foods that improve health and food quality and safety research. DAFF co-funds a number of projects in this area with the HRB. A project to develop a National Nutritional Phenotype Database will serve as a vital resource for identifying gene ‘signatures’ involved in obesity, chronic diseases and aging. A second study is building up a profile of gut microflora in 500 older people, which will advance our understanding of the role of beneficial human gut microbiota in reducing the risk of specific diseases, through informed nutritional, prebiotic or probiotic choices. Finally, the National Research Centre for Diet, Obesity and Diabetes, a joint venture between UCC and UCD, is co-funded by the HRB and DAFF. The overall aim of the Centre is to contribute to the evidence base for public policy, health promotion and clinical practice on the prevention and management of obesity, diabetes and related metabolic disorders.
- The EPA share is primarily focused on environmental health impacts, for example pollutants, while HEA support is predominantly capital expenditure on the infrastructure underpinning PHR. As an example, the Environmental Change Institute at NUI Galway, established through PRTL funding, supports projects in environmental and sociological health impacts and infrastructure.
- Funding in this area provided by medical charities through the MRCG is focused on the evaluation of health-promotion interventions.



**Figure 4.2** Comparison of overall health related research expenditure relative to expenditure on PHR and HSR by public funding agencies in 2008 and 2009

The recommendations of *Making Knowledge Work for Health: A strategy for health research* (DoHC, 2001)<sup>21</sup> had a profound impact on the amount and emphasis of HRB research funding in these areas. This proposed an 'R&D for Health' stream of funding, to be focused primarily within the health services and supported by strategic agreements between hospitals and universities and by dedicated research officers embedded within the health services. As a result, HRB research funding increased from €20 million to almost €50 million per annum between 2002 and 2008. New schemes developed over that period included the Health Services R&D Programme, Partnership Awards between academic researchers and health professionals, joint research funding with the Medical Research Charities Group, and a number of fellowship schemes for health professionals across a broad range of clinical

<sup>21</sup> Department of Health and Children (2001) *Making Knowledge Work for Health: A strategy for health research*. Government Publications. Dublin. [http://www.DoHC.ie/publications/making\\_knowledge\\_work\\_for\\_health.html](http://www.DoHC.ie/publications/making_knowledge_work_for_health.html)

and therapy professions. The HRB's focus on research activity in the areas of PHR and HSR is very much in keeping with the impetus of the HRB strategy, which makes a commitment to increasing the share of funding allocation to PHR and HSR from a current level of approximately 25 per cent of total HRB research expenditure to approximately 45 per cent of the total research budget of the HRB.

#### 4.4.2 PHR and HSR funding support in the voluntary sector

In the voluntary sector, the most important contribution to funding for health-related research comes from the 27 medical research and patient-support organisations that make up the Medical Research Charities Group (MRCG). A survey of MRCG members, carried out in 2008, estimated that collectively the member organisations committed €23 million to health research between 2005 and 2007, with plans for a further commitment of €41 million in the following next three years (2008-2010). This equates to an annual expenditure of approximately €10 million in total. While the majority of projects supported by MRCG members are basic biomedical or clinical/translational, an estimated 7 per cent of total MRCG funding provides support across a broad range of projects in PHR as it relates to health promotion, epidemiology and health interventions.

#### 4.4.3 Philanthropic support for PHR and HSR

In terms of philanthropy as a contributor to health-research funding, Ireland lags well behind the USA and the UK. Some of the larger teaching hospitals and university foundations certainly contribute to health-research funding in their institutions but it was not possible to estimate the scale or amount of this contribution,

The Atlantic Philanthropies has been the most significant source of private funding for health and social care research in Ireland since the late 1990s. In later years, its efforts focused on the areas of ageing, disadvantaged children and youth, population health, and reconciliation and human rights. However, the focus of support has been less on academic research projects *per se* and more on community-based projects. The Atlantic Philanthropies no longer supports population health projects in Ireland, but does still support ageing projects and programmes to assist disadvantaged children and youth. In 2008, The Atlantic Philanthropies committed approximately €10 million to ageing projects that are health or social care-focused, which included part-funding for the Irish Longitudinal Study on Ageing (TILDA)<sup>22</sup>, and approximately €3.6 million to projects under the 'disadvantaged children and youth' theme that are health or social care-focused.

#### 4.4.4 Support for PHR and HSR in the enterprise sector

While not an traditional contributor in this space, there are now a number of examples of enterprise support for PHR and HSR, in the ICT sector in particular. Interest in the enabling contribution of these disciplines in the enterprise sphere is growing. Hewlett Packard (HP) Ireland is currently collaborating with health care professionals and academics on a number of ICT for Health projects. These include the development of solutions for electronic health records which would help healthcare organisations to use their data to improve health and streamline operations, and development of solutions for health information systems which can support more effective collaboration and information flow to deliver improved health and wellness services.

<sup>22</sup> See <http://www.tcd.ie/tilda/> for more information.

The Digital Health Group at Intel, in partnership with the IDA and several Irish universities set up a Technology Research for Independent Living (TRIL) Centre<sup>23</sup> in Ireland in 2007, the largest research effort of this type in the world. The centre addresses the challenges of developing and applying technology to foster 'independent living' for older people. The Intel Health Guide is an example of such technology and is a next-generation telehealth or remote patient monitoring (RPM) system that combines an in-home patient device, with an online interface that allows clinicians to monitor and manage patients care remotely.

Intel also supports other projects, in collaboration with health care professionals and academics, which aim to identify strategic opportunities for appropriate technologies and services. Examples include the *Global Ageing Experience* ethnographic study of ageing in countries undergoing marked demographic changes, which seeks to understand the myriad social and cultural differences in people's experiences of ageing and health; the *Community Supports for Ageing* project builds upon a range of studies including the Global Ageing Experience, and provides a basic overview of the main welfare models that exist in the EU and details on individual projects organised around the key contexts of home, community and national/policy; finally, the *Rural Transport* project, with the Rural Transport Programme (RTP), explores the role transportation plays in people's lives as they age, particularly in rural Ireland.

#### 4.4.5 European funding of PHR and HSR

As part of its membership of the European Union (EU), Ireland makes an annual contribution to EU research and innovation programmes, the so-called Framework Programmes, launched in 1984. Over successive Framework Programmes, the emphasis has moved from small project grants towards large multi-disciplinary research and innovation programmes, aimed at tackling fragmentation of research efforts across Europe and developing technology platforms that can strengthen Europe's science and technology and ultimately advance economic growth. Added value is obtained from trans-national co-operation, the integration of relevant activities and participants, and the concentration of European effort on fewer priorities

The Framework Programmes offer valuable opportunities for Ireland's small and medium enterprises (SMEs), multinational corporations (MNCs), health care professionals and academic researchers to participate in high-quality research collaborations with their European counterparts. Ireland has already benefitted greatly from previous EU Framework programmes, with our third level and company-based researchers drawing down almost €200 million from the Sixth EU Framework Programme. The Seventh EU Framework Programme for Research and Technological Development (FP7) was launched at the end of 2006 with a budget of approximately €50 billion covering the period 2007 to 2013. Health is one of the key Thematic Areas in this programme, and the HRB hosts both the National Delegate and two National Contact Points in this theme, to assist Irish researchers in both the clinical and PHR/HSR spheres to avail of the opportunities offered by this programmes. In addition, the EU Public Health Programme provides opportunities specifically in PHR and HSR, and the National Focal Point for this programme is also hosted by the HRB.

<sup>23</sup> See <http://www.trilcentre.org/> for more information

# Chapter 5 Mapping of Irish PHR and HSR infrastructure

## 5.1 Introduction

This chapter looks at the current infrastructure supports of particular relevance to PHR and HSR in Ireland, and examines the gaps in this area that are hampering research. Data for the mapping study was collected in part through a survey of research funding providers, the survey instrument for which is described in Appendix 4.1. For the purpose of this review, infrastructure refers not only to capital buildings, specialist facilities and equipment but also to information systems, database access, libraries, specialist technical expertise and other resources that are required to facilitate research.

### Key observations:

- Despite the large investments that have been made nationally in buildings and facilities with a health focus, little infrastructure investment has been targeted towards the specific needs of PHR and HSR. The HRB is currently the primary funder in this space, although investments made by other agencies may ultimately benefit PHR and HSR.
- There is no integrated Ethics Committee structure in Ireland. The fragmented nature of RECs creates significant problems for researchers in terms of time delays in gaining ethical approval, which is particularly burdensome in the case of multi-centre studies.
- There are no unique personal identifiers (UPI) across the Irish care system. This hampers linkage of health data, which would facilitate both PHR and HSR and create the possibility of tracking resource utilisation and health outcomes across the health system.
- There are core weaknesses in national health information systems including limited or no Irish research data in many areas, lack of comparability of available datasets, lack of harmonized standards across datasets, lack of access to information on private health care and difficulties in accessing existing data sets in the public system.
- There is a need for clarity regarding the secondary use of patient data in health research in Ireland and the provisions of the Data Protection Acts 1998 and 2003 in this regard.
- Where the secondary use of anonymised data is permissible there is limited capacity at present for quantitative and qualitative analysis among the health research community.
- Outside of the higher education sector, access to published literature can be difficult.

## 5.2 Capital infrastructure for PHR and HSR

Irish research in the 1990s had a very low infrastructure base because of a dearth of public investment. The need for investment is reflected in the low number of agencies who reported that they supported some elements of research infrastructure. The first really significant investments in research infrastructure in the higher education sector (hitherto funded mainly for their teaching activities) came with the establishment of the PRTL in 1997, funded through the HEA. To date, PRTL investment into facilities and equipment has totalled over €1,030 million. The capital investments made in host institutions since 1999 through the PRTL programme underpins the research portfolio of almost all major Irish funding agencies.

Despite the large investments that have been made nationally in buildings and facilities with a health focus, little has been targeted towards the specific needs of PHR and HSR, and has been primarily confined to support that the HRB has been able to provide. The HRB currently funds two 'virtual' Health Research Centres focused on primary care, and diet and health, and is piloting a Methodology Support Centre to assist health researchers in crafting the statistical and methodological design elements of their research projects. In addition, the HRB Clinical Research Facility at NUI Galway has a HSR focus. Beyond HRB support, the IDA, in partnership with Intel and several Irish universities set up a Technology Research for Independent Living (TRIL) Centre in Ireland in 2007 (see Chapter 4.)

## 5.3 ICT and health information

The practices of PHR and HSR involve collecting, analysing, collating and sharing data that drive evidence-based health interventions, practices and policy decisions. Therefore, robust datasets form a vital tool with which PHR and HSR practitioners can address research questions.

The HRB has invested over €4 million to support 20 health information systems projects in relation to health and social care. The objective of this investment was to ensure that robust health information systems are in place to provide a strong foundation for future research and development projects in the healthcare setting. Examples of such projects include Health Atlas Ireland, the All-Ireland Public Health Observatory and the development of an electronic patient-record system for patients with epilepsy at Beaumont Hospital, Dublin.

### 5.3.1 Support for national surveys, cohort and longitudinal studies

The collection of robust data on the health status of the Irish population represents a vital baseline investment for PHR and HSR, and the absence of core datasets (cost databases, various patient registries etc.) hampers research in this area. A number of national surveys have been conducted or are on-going, which provide vital data for PHR and HSR, and as evidence for policy development in these areas.

The National Census, and Quarterly National Household Surveys (QNHS), carried out by the Central Statistics Office (CSO), collect extensive population based information from a large sample and provide valuable sources of data on demographics (Census) and economic status (QNHS and Insight surveys). Information on child health and lifestyle issues among teenagers is captured through the European-funded HBSC Surveys. The DoH-supported SLÁN in 1998, 2000, 2002 and 2007 collected data on general health, behaviours relating to health (e.g. exercise, nutrition) and the use of certain health services. In addition, over 1,200 people who participated in the 2007 survey also participated in a detailed medical examination. However, there is no commitment to continued investment in this survey instrument by the DoH and it is uncertain whether a survey will take place in 2012.

The DoH, through the Office of the Minister for Children in association with Department of Social and Family Affairs and the CSO, has supported the National Longitudinal Study of Children in Ireland (NLSCI), also known as 'Growing up in Ireland' in recent years. Responsibility for this survey will now pass to the newly-established DCYA. This government study is following the progress of almost 20,000 children across Ireland, 8500 nine-year-olds and 11,000 nine-month-olds. The aim of the study is 'to examine the factors, that contribute to or undermine the well-being of children in contemporary Irish families, and, through this, contribute to the setting of effective and responsive policies relating to children and to the design of services for children and their families'. Anonymised data on the 9-year cohort (1<sup>st</sup> wave) is being made available to researchers through the Irish Social Science Data Archive



at UCD and the DoH and DCYA are anxious to promote use of this data by researchers, policy makers and service planners, as part of a wider initiative to optimise use of existing data on children's lives.

The Irish Longitudinal Study on Ageing (TILDA) is co-funded by DoH, The Atlantic Philanthropies and Irish Life, and is the most detailed study on ageing ever undertaken in Ireland. This study looks at the health, lifestyles and financial situation of people as they grow older. It is hoped that the data gathered will improve our understanding of the factors that aid successful ageing in Ireland and assist in the development of a range of economic, health and social policies that will benefit all people living in Ireland.

### 5.3.2 Access to datasets and use of existing data

The importance and need for high quality health information in improving the safety and quality of patient care, as well as underpinning PHR and HSR, has been outlined in a number of key national strategy documents from the DoH in recent years. The *National Health Information Strategy 2004*<sup>24</sup> addressed the possibility of rectifying deficiencies in health-information systems and developing an information framework to support health surveillance, resource targeting and narrowing of health inequalities. To this end, the strategy recommended the development and maintenance of a health information data inventory. To address this recommendation HIQA published a *Catalogue of National Health Information Sources*<sup>25</sup> in 2010. This catalogue will increase awareness of researchers on the existence, purpose and content of these sources and how data can be accessed. The strategy also identified the importance of having a UPI for all clients/patients, developing a national Health Information Portal as a single internet-based access point to a range of health and health-related information sources, and establishing a national population health observatory, all of which are central to advancing both PHR and HSR in Ireland.

A number of datasets already exist within the Irish health research system that could be better exploited. However, the biggest limiting factor to the secondary analysis of existing data is a current lack of capacity for qualitative and quantitative analysis among Irish social science researchers. With appropriate skill sets secondary analysis of existing datasets would allow researchers to track trends over time and link Irish data with equivalent archives in other countries to conduct international comparative studies on Irish society. Such datasets take the form of:

- Anonymised microdata files
- Researcher Microdata files
- Qualitative data
- International data archives

#### Anonymised microdata

The most important example of an archive containing anonymised microdata files (AMFs) is the Irish Social Sciences Data Archive (ISSDA)<sup>26</sup>, established in 2000, within the auspices of the Geary Institute at UCD. This archive fills a long recognised need in Ireland for the availability of AMFs and holds an ever-increasing quantity of machine-readable data from surveys and official statistics (such as the Census) and makes them readily available to academic and non-profit researchers. The objective of the ISSDA is to ensure wider access to datasets, both Irish and international. While the

<sup>24</sup> Department of Health and Children (2004) *Health Information - A National Strategy*.  
<http://www.dohc.ie/publications/pdf/nhis.pdf?direct=1>

<sup>25</sup> Health Information and Quality Authority (2010a) *Catalogue of National Health Information Sources in Ireland*.  
<http://www.hiqa.ie/publications.asp>

<sup>26</sup> See <http://issda.ucd.ie> for more information

ISSDA makes some provision of training and advice in the access and exploitation of available datasets by postgraduate, and in the longer term, undergraduate students, to facilitate the wider acquisition of data analysis skills, this training is not extensive and other, more focused programmes of training, perhaps at Masters level, will need to be developed. The ISSDA archive contains the following data/survey PHR and HSR-relevant collections:

- Central Statistics Office files - SAPS, HBS, QNHS, EU SILC
- ESRI School Leavers Survey
- European Community Household Panel survey
- Irish elections / opinion poll data archive (Dept. of Political Science, TCD)
- Irish Social and Political Attitudes Survey
- Insight '07
- ISSHR (Irish Study of Sexual Health and Relationships)
- Irish Survey of Contraception and Crisis Pregnancy
- Irish National Time Use Survey
- SLÁN (Survey of Lifestyle, Attitudes and Nutrition)
- HBSC (Health Behaviours of School Aged Children)

The quantitative AMFs of the National Longitudinal Study of Children (Growing Up in Ireland) are being uploaded to the ISSDA as they become available. The survey is of particular relevance to PHR and HSR researchers in that it provides a rich source of data on all aspects of the lives of children, and how they are developing in the current social, economic and cultural environment.

The IPH has developed a Population Health Observatory that includes a collection of databases containing reports and grey literature, as well as datasets. It also offers training on how to best access this data.

### Research Microdata files

Under the Statistics Act 1993, the Central Statistics Office may provide access to microdata files in two forms - anonymised microdata, as found in the ISSDA, and research microdata files (RMFs). RMFs are unit record files that do not contain direct identifiers but where the risk of disclosure through indirect identification is considered to be significant. Therefore, these files are only made available to persons authorised to access such files under the Statistics Act 1993 subject to strict criteria. A formal application process is in place and is subject to the approval of the Director General of the CSO

### Qualitative data

The Irish Qualitative Data Archive (IQDA)<sup>27</sup> was established as part of the Irish Social Science Platform by the Higher Education Authority under PRTL 4. It is designed as a central access point for qualitative social science data; interviews, pictures and other non-numerical material. The IQDA is currently preparing a range of data for archiving including the qualitative component of the Growing Up in Ireland survey.

### International data archives

A number of archives of both international surveys and international research institutes make microdata or series of aggregates available on request or for download. Examples of microdata sets

<sup>27</sup> See <http://www.iqda.ie/> for more information

include the Programme for International Student Assessment (PISA)<sup>28</sup> archive and the international results of the HBSC<sup>29</sup> survey. Examples of aggregated datasets include OECD Statistics<sup>30</sup> and Eurostat<sup>31</sup>.

### 5.3.3 Access to published literature

In addition to datasets, PHR and HSR researchers must be able to mine the vast amount of published literature relevant to their topic. While HEI-based researchers will normally be well catered for by their library, outside the HEIs access to published literature may be more problematic. There are a number of open-access initiatives driven by Irish funding agencies, including the HRB, which focus on peer-reviewed research articles and their pre-prints. These initiatives are intended ensure that ideas and knowledge derived from publicly funded research are made publicly accessible as widely, as rapidly and effectively as possible.

Work is ongoing to improve the situation with regards to access to published literature through the following initiatives:

- Adoption of mandatory Open-Access policies by some of the major health funding agencies, including the HRB, SFI, HEA and IRCSET
- Development of a national portal, RIAN, linking the five Irish universities who already have institutional repositories, with other university repositories currently being developed.
- The HRB's National Documentation Centre provides a complete subject library on drugs and alcohol and has facilitated the IPH to establish its All-Ireland Electronic Library (AleHL).
- Within the health services, the HSE is investing in the development of an online portal, LENUS, to capture reports and other grey literature relevant to health service provision. This initiative was originally developed voluntarily by HSE personnel who wished to ensure that grey literature documents could be accessed by all HSE staff.

In addition, the HRB provides free national access to the Cochrane Collaboration, the world's largest organisation dedicated to the preparation and maintenance of systematic reviews of the effects of health care interventions. The Cochrane Library currently has over 27,000 contributors from more than 100 countries. Nevertheless, Ireland still lacks accessible repositories to hold HTAs, practice guidelines and protocols or any register of PHR and HSR taking place in the health services or the higher education sector that would provide an easily accessible evidence base for policy-makers.

## 5.4 Support for statistics and experimental design

Interim reviews of a number of HRB-funded investigator-led randomised control trials (RCTs) highlighted a need for some sort of centralised methodology support for these groups. Many countries have put in place a dedicated national infrastructure or resource to fund and support research teams conducting RCTs and to ensure maximum recruitment and power. Ireland does not currently have such an infrastructure in place. Another concern is that many early-career researchers have a brief introduction to methods but no real means or incentives to further develop their skills. In response to this identified deficit, the HRB has provided pilot funding for a Research Methodology Support Centre (CSTAR) to give support to primary care and clinical research on a national basis, across the health

<sup>28</sup> See <http://pisa2000.acer.edu.au/index.php> for more information

<sup>29</sup> See [http://www.hbsc.org/survey\\_data.html](http://www.hbsc.org/survey_data.html) for more information

<sup>30</sup> See <http://stats.oecd.org/index.aspx> for more information

<sup>31</sup> See [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database) for more information

service in all its settings. The centre is intended to improve the rigour and quality of research by providing advice, consultancy, training and education in research methodologies (both qualitative and quantitative), study design, project management, analysis, reporting, appropriate dissemination to inform practice and other support services.

## 5.5 Weaknesses in health information and systems

There are a number of weaknesses in the current health system relating to the collection, linkage, compatibility, availability and access to health that are explored in this section.

### 5.5.1 Data protection legislation

Within any healthcare system, the research and/or public health community may wish to use patient and client data for the purposes of disease investigation, surveillance and intervention, life-course and longitudinal studies, and the linkage of large-scale studies, among others. Ireland has a highly developed legal framework for the protection of personal information concerning individuals. The use of patient data in health research is regulated to a greater or lesser extent by an array of legislation,

The Data Protection Acts 1998 and 2003 in particular have raised concerns that a zealously over-regulated and bureaucratic regime will hamper public health and medical research for the wrong reasons. These Acts are aimed at ensuring that individual privacy is protected from violation except where an overriding 'public interest' exception requires it. It is only very recently that the call for recognition by policy-makers and those involved in research of a 'public interest' exception in medical research has begun to be made. The issues raised by the Data Protection Acts are covered in detail in '*Data Protection Acts 1998 and 2003: some implications for public health and medical research*'<sup>32</sup>, commissioned by the HRB in response to numerous and consistent queries from stakeholders about a number of key issues that are still not clear to researchers, data controllers and those involved in designing and managing health information systems and projects.

The need for a legislative framework to enable health information, in whatever form, to be used to best effect to enhance medical care and health research has been recognised by the DoH, who are currently drafting a Health Information bill to address the issues around the use of health information in both clinical practice and health research. The main objectives of the bill are to:

- establish a legislative framework to enable information to be used to best effect to enhance medical care and patient safety throughout the health system,
- facilitate the greater use of information technologies for better delivery of patient services
- underpin an effective information governance structure for the health system generally

The bill is due for publication in late 2011, for presentation to the houses of the Oireachtas. Once enacted, the legislation will be implemented in a phased manner over 2012.

### 5.5.2 Unique personal identifier for all Irish residents

At the moment there are no widely used unique personal identifiers (UPI) across the Irish healthcare system. Every element of the service uses and maintains its own identifier for each client, and as a

<sup>32</sup> Sheik A (2008) *Data Protection Acts 1998 and 2003: some implications for public health and medical research* <http://www.hrb.ie>.

result, people can have more than one identifier, each with a corresponding set of records. Not only does this prevent linkage of health data across the system, but it is costly to maintain, since each identifier must be created, recorded, checked, and located on each client visit. This fragmentation of information may also give rise to serious errors in patient care, where essential information known to one part of the service is not acted on in another.

In countries with working UPIs, it is possible to link all health data related to a person, which in turn facilitates both PHR and HSR and creates the possibility of tracking resource utilisation and health outcomes across the health system. A number of European countries, notably Finland and Denmark, have well-established systems on a statutory basis which might provide useful templates for Ireland. In these systems, the use of the UPI is tightly regulated by law, and rigorous procedures which protect privacy, but permit data linkage for research purposes, are provided.

Considerable support has built up within Ireland to address this issue. The National Health Information Strategy states that a system for unique identification within the health sector is required to promote the quality and safety of client/patient care and proposed that could be based on the Personal Public Service (PPS) Number. However, there are serious concerns about any potential for linkage between health and financial information and the possibility that this approach would undermine public support. In 2008, the Commission of Patient Safety and Quality Assurance<sup>33</sup> recommended the introduction of a unique health identifier (UHI), highlighting the contribution it could make to improved patient safety and quality. Likewise, in 2010 HIQA published recommendations for a development of a UHI<sup>34</sup>. The forthcoming Health Information Bill will provide a clearer legal framework for the deployment of UHIs across the Irish health services,

### 5.5.3 Compatibility and linkage of health information systems

Even if a UPI was made available now, this would not solve problems relating to data compatibility in the Irish health system which is due primarily to the absence of agreed minimum datasets and national guidance. As a result, many datasets are designed to be compatible with international counterparts rather than other national databases. The establishment of the National Steering Group on Health Information Standards by HIQA should do much to address this issue. The group aims to ensure a coherent and consistent approach to the development of standards for all aspects of health and social care information, based on international best practice, and will assist HIQA in identifying gaps in health information and making relevant information on health and social care services available to the public.

The linkage of datasets also presents difficulties - some of which relate to data protection or a lack of will on the part of service providers. For example, the systematic collection of hospital data by the Hospital Inpatient Enquiry System (HIPE), which records acute hospital discharges, and the National Psychiatric Inpatient System (NPIRS), which records psychiatric inpatient stays, are run by the ESRI and the HRB, respectively, are not linked and do not collect comparable information, although there is substantial overlap between the organisations from which the data is collected, as many acute hospitals now provide psychiatric inpatient care. Likewise, the national databases of the National Disease Registries are not linked.

<sup>33</sup> Commission on Patient Safety and Quality Assurance. (2008) *Building a Culture of Patient Safety*.

<http://www.cpsqa.ie/publications/>

<sup>34</sup> Health Information and Quality Authority (2010b) *Recommendations for a Unique Health Identifier for People in Ireland*. <http://www.hiqa.ie/publications.asp>

## 5.6 Research ethics committee structure

The primary task of a research ethics committee (REC) is to protect the welfare and the rights of human and animal participants in research. Research on humans includes not just the sampling of tissues, trialling of medications and devices and observation of physical responses to non-invasive interventions but also health promotion and protection interventions, epidemiological studies, surveys and questionnaire analysis etc. Therefore, much research in PHR and HSR will require ethical approval.

The Irish Council for Bioethics lists three groups of RECs in Ireland, namely those associated with hospital-based research, research in third level institutions and other organisations. Twenty-eight RECs are located within the hospital sector, 14 in third-level institutions and 4 in other organisations, including the HSE non-hospital realm. The 2008 HSE review of RECs in Ireland<sup>35</sup> identified 57 RECs within the higher education, hospitals and health service sectors and professional associations.

The fragmented nature of RECs creates significant problems for researchers in terms of the time delays in gaining ethical approval. The logistics of gaining ethical approval becomes especially burdensome in the case of a multicentre study. There is rarely a reciprocal agreement in place between RECs, even those located in hospitals and universities on the same campus and ethical approval may need to be sought from several RECs at the same time, each of which has a different application process, forms, timelines etc. A further difficulty with the multitude of RECs in Ireland is that the experience of each committee is limited. The DoH notes that even in the case of recognised RECs, based on activity levels in 2008 there are effectively only four RECs that can be classed as actively reviewing more than ten clinical trials of medicines per year. Clearly, a leaner REC structure, which reflects activity levels in Ireland, would result in more consistent quality of opinion.

In an effort to streamline ethical approval, at least in the case of clinical trials for medicinal products for use in humans, the DoH grants recognition, under Regulation 7 of the European Communities (Clinical Trials on Medicinal Products for Human Use) Regulations 2004, to properly constituted RECs. Recognised RECs may grant ethical approval to pharmaceutical sponsor companies and academic researchers. These committees use the same application form and processes which facilitates cooperation between them and the reciprocal acceptance of opinions. Currently, 13 RECs are recognised by the DoH, of which 12 are located in hospitals and 1, the Irish College of General Practitioners Ethics Committee, is located outside the hospital system.

The upcoming Health Information Bill proposes the setting-up of a parallel structure for other clinical and health-research studies, initially using the ethics committees currently recognised by the DoH, who would extend their activities to a much broader range of health and social care areas including those relevant to PHR and HSR. A single government agency, yet to be appointed, would act as the supervisory body for ethical regulation. This agency would approve ethics committees and could also use this opportunity to review those committees currently in place. All requests for ethical approval would go to this agency, which would have responsibility for streamlining the process and assigning the application to an approved committee. The legislation will also safeguard the role of the Irish Medicines Board, which will be unchanged. Discussions are under way at governmental level on how best to resource this new function and it is hoped that this part of the Health Information Bill will be enacted in 2011.

<sup>35</sup> HSE Research Ethics Committees Review Group (2008) *Review of Research Ethics Committees & Processes in the Republic of Ireland*.  
[http://www.hse.ie/eng/services/Publications/corporate/etr/Review\\_of\\_Research\\_Ethics\\_Committees\\_and\\_Processes\\_in\\_Republic\\_of\\_Ireland.html](http://www.hse.ie/eng/services/Publications/corporate/etr/Review_of_Research_Ethics_Committees_and_Processes_in_Republic_of_Ireland.html)

# Chapter 6 Mapping of outputs from Irish PHR and HSR

## 6.1 Introduction

The outputs of PHR and HSR provide the evidence base on which improvements in the health of the population and health services management, organisation and provision can be advanced. This chapter looks at the outputs from academic units conducting research on PHR and HSR, in both the Republic of Ireland and Northern Ireland. Publication output was the primary unit of measurement of research activity and quality was measured by bibliometric analysis against a number of international comparator countries. Data for this mapping study was collected as part of the Survey of Heads of Academic Units, the survey instrument for which is described in Appendix 4.2. This chapter also looks at the diverse body of PHR and HSR-relevant grey literature that is produced within, or for, the public sector.

### Key observations:

- While Ireland produced a relatively small output of PHR/HSR peer-reviewed publications compared to countries of a broadly similar national population, this output had the third highest impact among the selected countries and the visibility of Irish publications among the most highly-cited publications was relatively strong.
- The dissemination strategies employed by researchers varied from the traditional academic outputs of peer-reviewed publications and scientific presentations, to informal and formal linkages with stakeholders in the health policy and service provision sectors.
- Academic units in which reports and other publications (letters, editorials, commentary, factsheets, rapid response articles, journal abstracts, fact sheets and guidelines) accounted for a significant proportion of overall publications were more likely to undertake policy-oriented commissioned studies.
- Commissioned research concentrated on health services and their management, public health and health promotion, with few commissioned publications dedicated to research on ways to improve the quality and efficiency of public health monitoring, reporting and evaluation.
- Commissioning practices showed no evidence of a close connection between the policy and operational aspects of health.

## 6.2 Publication output

As part of the survey of Heads of Unit, conducted in 2008 and updated in 2009, publication lists were collected from major academic units whose core research activities are in PHR and/or HSR. Publications, spanning the years from 2003-2008, was examined to identify the type and level of research activity being conducted in those departments. Where these were not supplied, unit website and annual reports was used to compile publication lists (if possible). Duplicate entries were removed and academic units within the same institution were combined if there was significant overlap in their publications. Publications were categorised as follows:

- Year of publication
- Type of publication



- Peer-reviewed journal publication (International and Irish)
- Books, Edited books or book chapters
- Reports (e.g. SLÁN Survey)
- Commissioned Studies
- Systematic Reviews
- Monographs
- Other publications (Editorials, letters, commentary, fact sheets, rapid response articles, guidelines, briefing papers)
- Activity type of publication (Categories 1-4 as described in Chapter 1. Publications outside the scope of the review were designated category 0). A total of 725 peer-reviewed publications and 576 non-peer-reviewed publications were categorised, of which 931 fell within the scope of the review.

## 6.2.1 Publication output by theme

The scope of research activity included in, or excluded from, this analysis was informed by the definitions adopted in Chapter 1. The Swedish Review of Public Health Research<sup>36</sup> provided a framework for grouping research activities within this scope and this framework was adopted with some refinement to suit the Irish research context (Table 6.1).

**Table 6.1 Four categories of research activity included in review**

1. Studies focused on theory/method	
<ul style="list-style-type: none"> <li>• Aetiology theories</li> <li>• Behavioural change theories</li> <li>• Sociological theories</li> <li>• Psychological theories</li> <li>• Mixed methods</li> </ul>	<ul style="list-style-type: none"> <li>• Intervention methods</li> <li>• Knowledge dissemination</li> <li>• Quantitative methods</li> <li>• Qualitative methods</li> </ul>
2. Studies focused on aetiology/incidence	
<ul style="list-style-type: none"> <li>• Health determinants</li> <li>• Health status</li> <li>• Protection factors</li> <li>• Risk factors</li> </ul>	<ul style="list-style-type: none"> <li>• Incidence of protection or risk factors</li> <li>• Morbidity and mortality</li> <li>• Distribution of ill-health in the population</li> </ul>
3. Studies focused on interventions	
<ul style="list-style-type: none"> <li>• Health promotion measures</li> <li>• Global health</li> <li>• Application of process methodologies to health service delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Primary prevention</li> <li>• Some secondary prevention</li> <li>• Evaluation of projects or programmes</li> </ul>
4. Studies focused on policy for health	
<ul style="list-style-type: none"> <li>• National and regional health policy</li> <li>• Health care policy</li> <li>• Health promotion policy</li> <li>• Healthcare systems intervention structures</li> </ul>	<ul style="list-style-type: none"> <li>• Health economics</li> <li>• Preventative measures in health care services</li> <li>• Implementation</li> <li>• Healthcare systems configuration</li> </ul>

<sup>36</sup> Källestål C and Swanberg I (2005) *Part 2: An inventory of Swedish public health research*. Scan. J. Publ. Health. 33 (Supp 65): 17-45.

It should be noted that purely biomedical, toxicological, genetic or general pharmacological research (with the exception of genetic epidemiology) was not included within the scope of the review. Likewise, research into diagnostics or pathology which is not linked to prevention; pure social welfare research; and behavioural science not linked to population health and clinical research were not included. In terms of clinical research, this review differentiates between research activity carried out by clinicians that generates population health evidence (which is included) as opposed to clinical research activity focused on mechanisms and hosts (which is excluded). Phase III clinical trials were excluded from the scope of this review but randomised control trials were included.

A fifth category of 'other', that is, publications outside the scope of this analysis, was identified using the exclusion criteria developed by the SPHERE bibliometric study of public health research in Europe<sup>37</sup>. Excluded publications were:

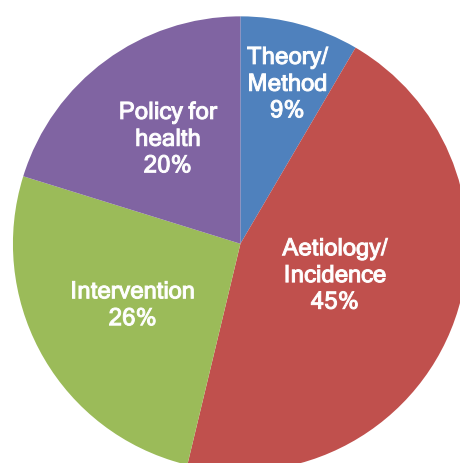
- Publications describing basic biomedical research.
- Publications relating to very rare conditions, where care, treatment and prevention (if applicable) would be very unlikely to be the province of public health practitioners.
- Pharmacological medication as the only exposure - unless that pharmacological medication acted on a wide population basis (e.g. studies of widespread minor analgesia: aspirin, paracetamol) use in the population.
- Clinical interventions with host or mechanisms focus.
- Publications relating to an individual's treatment or treatment pathway.
- 'Perception' pieces.

An analysis of all publications within categories 1-4 from 2003 to 2008 (Figure 6.1) indicated that:

- Research focused on the aetiology or incidence of disease, that is, research into the determinants, risk factors and protective factors for health, health status and distribution of ill-health in the population accounted for 45 per cent of outputs. The collection and analysis of such data provide an important evidence base for the formulation and change of policy and practice relevant to the health of the Irish population and the management and organisation of our health services.
- Examination of interventions, which would include health promotion initiatives, improvement of health service delivery and preventative measures at both primary and secondary care level, and evaluation of the success of interventions accounted for 26 per cent of outputs.
- Twenty per cent of outputs were accounted for by research into policy for health, which included analysis of the cost of health care provision and interventions, and the formulation and impacts of health care policy at local, regional and national level.
- Research studies focused on theory or methodology development accounted for only 9 per cent of outputs. This category included the development and evaluation of quantitative, qualitative and mixed methods and the theoretical underpinning of psychological, sociological and behavioural change.

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<sup>37</sup> Strengthening Public Health Research in Europe (SPHERE). <http://www.ucl.ac.uk/public-health/sphere/spherehome.htm>



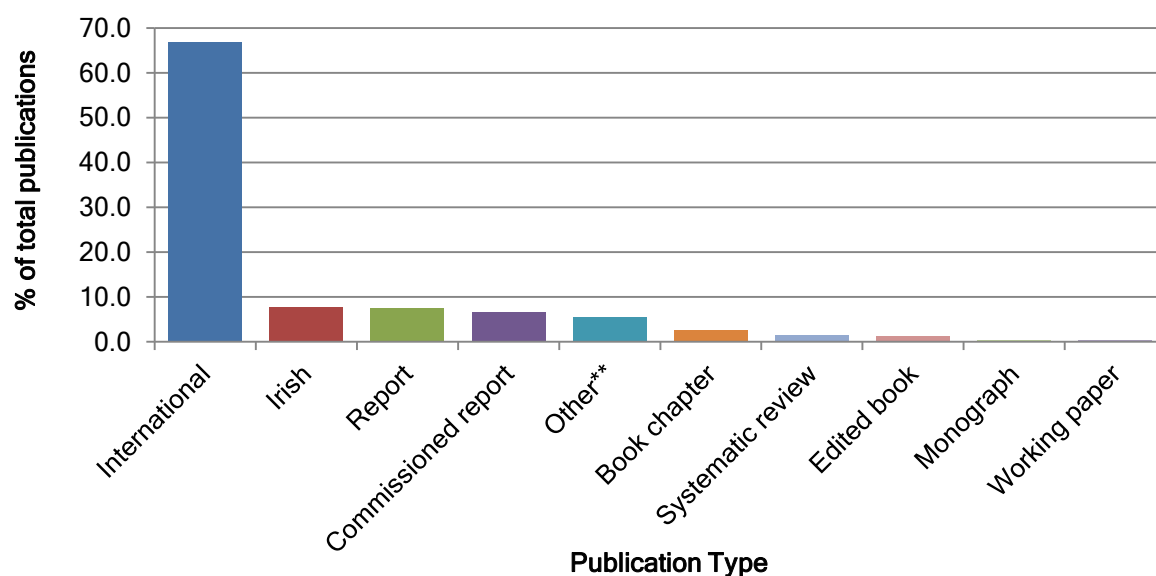
**Figure 6.1** Distribution of research activity categories as a percentage of total publications per unit (Category 1-4, 2003-2008)

## 6.2.2 Dissemination modes

There are many ways in which research data can be disseminated to reach different audiences. Because of the nature of PHR and HSR, it would be anticipated that academic units whose primary focus is in these areas would target the outcomes of their research not only at their peers, through publication in peer-reviewed journals and books, but would also attempt to reach service providers and policy-makers who could translate these findings into tangible changes in policy and practice, through working papers, commissioned studies, commentaries, factsheets, rapid response articles, fact sheets and guideline.

The types of publications included in this survey were peer-reviewed journal articles, edited books and book chapters, systematic reviews, commissioned studies and other publications (letter, editorial, commentary, rapid response article, abstract, fact sheet, guideline, briefing paper). Other non-peer-reviewed reports were also included, such as reports on the outcomes of national longitudinal surveys, internally commissioned reports and working papers. Conference proceedings were not included in this analysis, since these may represent the duplication of journal articles from the same work. The distribution of publication types, as a percentage of total publications in all major units within categories 1-4 are shown in Figure 6.2.

Publications in international peer-reviewed journals represented the main route of dissemination of research outputs chosen by all units (almost 70 per cent of total publications). Papers in Irish journals accounted for 7.7 per cent of publications on average, which is not surprising given the lack of quality Irish journals available. In terms of dissemination to policy and practice stakeholders, commissioned and other reports together accounted for just over 14 per cent of all publications. The 'other report' category included reports from the SLÁN survey, working papers, as well as reports arising from internally commissioned research work.



\*\* Letter, editorial, commentary, factsheet, rapid response article, abstract, fact sheet, guideline

**Figure 6.2** Dissemination route used by Irish academic units with core PHR or HSR activity (Category 1-4, 2003-2008)

While Figure 6.2 provides an overview of dissemination methods employed, analysis at individual academic unit level provides more insight into the focus of these units. This analysis found that:

- The level of publication in international peer-reviewed journals varied greatly from 34.6 per cent at NUI Galway to over 83.6 per cent at UCC. However, TCD and NUI Galway, who had fewer international publications, both had a higher usage of Irish journals (15 and 17.6 per cent, respectively) than the other units, which may reflect their close ties with primary care research.
- QUB had the highest level of publication in international journals. However, it is perhaps relevant that QUB is subject to the UK Research Assessment Exercise, which 'rewards' international research publications and 'downgrades' books and book chapters.
- Systematic reviews accounted for between 3.4 per cent and 3.8 per cent of publications in three units (RCSI, TCD and UCC). A number of units had undertaken very few or no systematic reviews in the past five years.
- Units in which reports accounted for a significant proportion of overall publications also described themselves as having a policy-focused ethos.
- Other publications (letters, editorials, commentary, factsheets, rapid response articles, journal abstracts, fact sheets and guidelines) accounted for 5.5 per cent of total publications, but these modes of dissemination were not used at all by one unit during the period in question (2003-2008), while they accounted for almost 10 per cent of total publications at NUI Galway and over 12 per cent of total publications at TCD.
- Monographs and working papers accounted for very few publications in academic units. In contrast, the publication output of the ESRI and the IPH was dominated by reports, working papers, commissioned studies and monographs (67 per cent and 98 per cent, respectively, of their total publication output). This reflects the primary objective of these organisations in influencing policy.

## 6.3 International comparison of research outputs

An examination of research activity and the output ratio per unit and tenured staff member provides an overview of both the type of research being conducted in the core academic units and the level of outputs resulting from that research. Bibliometric analysis is useful in a review of a scientific field as it enables insight into the scientific output within the field and the scientific impact of these outputs (e.g. through citation analysis). Several previous international field review studies have incorporated bibliometric analysis as an input to the review<sup>38,39</sup>.

This section summarises the main findings from a bibliometric analysis of Republic of Ireland (ROI) publication output in international journals related to the fields of PHR and HSR in the five-year period 2003-2007. The data analysis by the Centre for Science and Technology Studies (CWTS) at Leiden University was based on well-established bibliometric indicators, described below, to quantify the output and impact of Irish research relative to comparator countries: Northern Ireland, Scotland, Denmark, Belgium, Finland, and New Zealand. Journals indexed in the WoS Citation Indices were identified that were deemed relevant to the field of PHR (including HSR). A total of 318 journals, including four general medicine journals (New England Journal of Medicine, JAMA, BMJ and Lancet) were identified. As the objective of the study related to publication trends in international journals, national and region-specific journals (e.g. Scandinavian Journal of Public Health) were excluded from the dataset with the exception of British and North American based journals.

All relevant publications with an author address in the Republic of Ireland (ROI) were identified. A similar process was followed to identify publications in the comparator countries chosen for this study, whose population is similar to that of Ireland, that is - Belgium, Denmark, Finland, New Zealand, Scotland, and Northern Ireland. These countries served as the benchmark for comparison of the Irish PHR research performance over the period 2003-2007.

As an additional metric of interest, data from both ROI and Northern Ireland (NI) were combined to yield an All-Ireland dataset (Ireland+). While the analysis relates to journal articles published during the period 2003-2007, papers were actually included according to the 'database' year - that is, the year in which they were indexed in the WoS Citation Indices. Due to a time lag in processing of articles by ISI, 'late' papers from 2002 are included, but at the other end, 'late' papers from 2007 are excluded.

### 6.3.1 Bibliometric indicators

Bibliometric indicators are important in that they relate to different aspects of publication and citation characteristics. Table 6.2 lists the different indicators used by the CWTS. Generally, CWTS considers *CPP/FCSm* (see below) to be its 'crown' indicator. This indicator relates the measured impact of a group of researchers or institute to a worldwide, field-specific reference value. Therefore, it is a powerful internationally standardised impact indicator. This indicator an immediate observation of whether the performance of a group of researchers is significantly far below (indicator value <0.5), below (indicator value 0.5-0.8), about (0.8-1.2), above (1.2-2.0), or far above (>2.0) the international (western world dominated) impact standard of the field.

For ROI output and comparator countries, the analysis using the bibliometric indicators was presented for the period 2003-2007. Publications are included from each of the publication years (2003-2007)

<sup>38</sup> Clarke A *et al.* (2007) *A bibliometric overview of public health research in Europe*. *European Journal of Public Health*, 17 (43-49)

<sup>39</sup> Academy of Finland (2009) *Clinical research in Finland and Sweden*. Academy of Finland, Helsinki

and citations are counted up to and including 2007 (e.g. a five-year citation window is used for papers published in 2003, and a two-year citation window for papers published in 2006).

**Table 6.2 Summary of main bibliometric indicators used in study**

Indicator	Definition	Relevance to study
<i>P</i>	Number of peer-reviewed papers (articles, letters, notes and reviews) published in journals indexed in the Web of Science	Indicates how visible Irish research is in the international literature
<i>CPP</i>	Average number of citations per publication, or citation per publication ratio (self-citations are excluded)	Indicates the degree of 'uptake' or impact of Irish research on other research groups
<i>Pnc</i>	Percentage of articles not cited during the time period considered.	Indicates the proportion of Irish research <u>not</u> taken up by other research groups
<i>JCSm</i>	Journal Citation Score: mean (world-wide) citation rate of the journals where a country's papers are published	Measures the impact level of the journals in which Irish researchers publish
<i>FCSm</i>	Field Citation Score: mean citation rate of the fields in which the country is active	Measures the impact level of the sub-fields that comprise PHR & HSR
<i>CPP/JCSm</i>	Mean impact of a country's articles, compared to the average citation rate of the journals where papers are published	If > 1.0 the impact of Irish research is higher than the impact of the journal set in which the Irish researchers published
<i>CPP/FCSm</i>	Mean impact of a country's articles, compared to the world citation average in the fields in which the country is active	If > 1.0 the impact of Irish research is higher than the world average impact. Considered the 'Crown Indicator'
<i>JCSm/FCSm</i>	Impact of journals in which a country has published compared to world citation average in the fields covered by these journals	If > 1.0 Irish research is published in journals of higher impact than the field average
<i>AE (P top)</i>	The relative contribution to the upper percentile of the citation distribution: ratio of actual number (A) to expected number (E) of country's papers that belong to most frequently cited papers in a field	Indicates the visibility of Irish research among the highest impact international publications (a ratio of > 1.0 represents higher than expected performance)

## 6.3.2 Bibliometric analysis

### International comparison of PHR & HSR outputs and impact

In terms of output, ROI published 642 publications in the period 2003-2007 (Table 6.3). When compared to the output of the comparator countries, the ROI is among the smallest producers of outputs in this field, with only Northern Ireland having a smaller output. In terms of impact, however, the ROI output is cited 6,071 times in total, or an average of 9.46 citations per paper (when corrected for self-citations this reduces to 8.13 citations per paper). This impact level compares very favourably on both the journal (*CPP/JCSm* of 1.61) and the field average impact level (*CPP/FCSm* of 2.64), and mostly outperforms the comparator countries using these key impact indicators. In addition, the ROI output is published in journals far above the average field impact level (*JCSm/FCSm* of 1.63), although to a lesser extent than the comparator countries. Of further note is that this score is positively skewed by the selective inclusion in the analysis of the high-impact-factor medical journals, such as *The Lancet* and the *New England Journal of Medicine*.

**Table 6.3 International comparison of PHR & HSR output and impact**

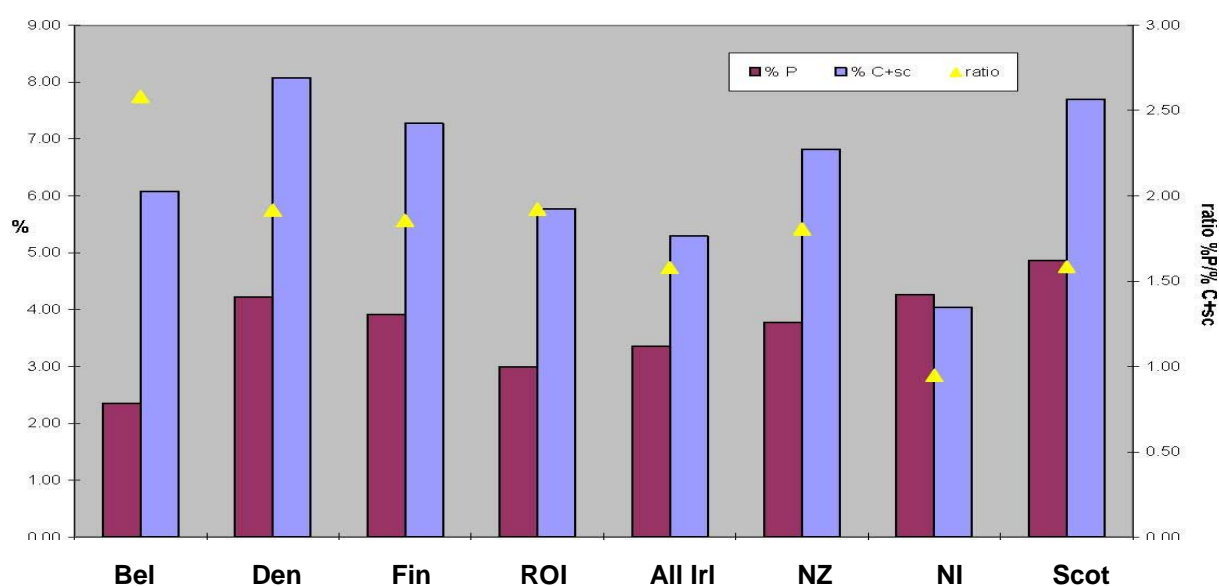
Country	P	CPP	Pnc %	CPP/JCSm	CPP/FCSm*	JCSm/FCSm
Scotland	2,676	8.76	37	1.37	2.37	1.73
Denmark	1,978	10.80	32	1.36	2.91	2.14
Finland	1,698	8.78	35	1.42	2.49	1.75
Belgium	1,583	12.78	38	1.46	3.87	2.65
New Zealand	1,048	6.76	36	1.02	1.97	1.93
ROI	642	8.13	44	1.61	2.64	1.63
NI	396	3.88	41	0.76	1.15	1.52
Ireland +	1,007	6.60	43	1.29	2.06	1.59

\* Crown indicator

The percentage of papers not cited (*Pnc*), while highest for RoI, was relatively high for all the comparator countries. This is most likely explained as a field-specific phenomenon and the relatively short citation window, resulting in many 'young' publications included in the datasets. Another salient characteristic of the data was the relatively low percentages of self-citations (ranging 13-19 per cent, scores not displayed below), particularly in the context of the dataset containing many young publications that tend to lead to relatively higher shares of self-citations.

### Comparison of field versus total output

An analysis was made of the PHR/HSR field in the context of the total national output of all research fields (Figure 6.3). This shows that the RoI field output as a proportion of the national output, at approximately 3 per cent, is smaller in comparison to the other countries, with the exception of Belgium. More positively, the proportion of RoI field citations as a percentage of total national citations is 6 per cent. In other words, RoI field publications received nearly twice as many citations compared to the relative citation rate of the national RoI output. This ratio exceeds that of the comparator countries, with the exception of Denmark (also a ratio of 2), and notably Belgium (with the highest ratio of 2.5).

**Figure 6.3 Output of PHR/HSR field as a proportion of total national research output**



### Visibility of outputs among highly-cited segment

The visibility of a country in the most highly cited publication distribution in a field is a useful indicator of impact. Our analysis shows that RoI ranks joint third with Scotland, behind Belgium and Denmark, among the proportion of field output in the top 10 per cent and top 2 per cent most highly cited publications (see Figure 6.4). However, RoI ranked bottom among the comparators in the share of top 1 per cent most-cited publications. Interestingly, the Northern Ireland field output was much more prominent among the top 1 per cent most highly cited publications in comparison with RoI.

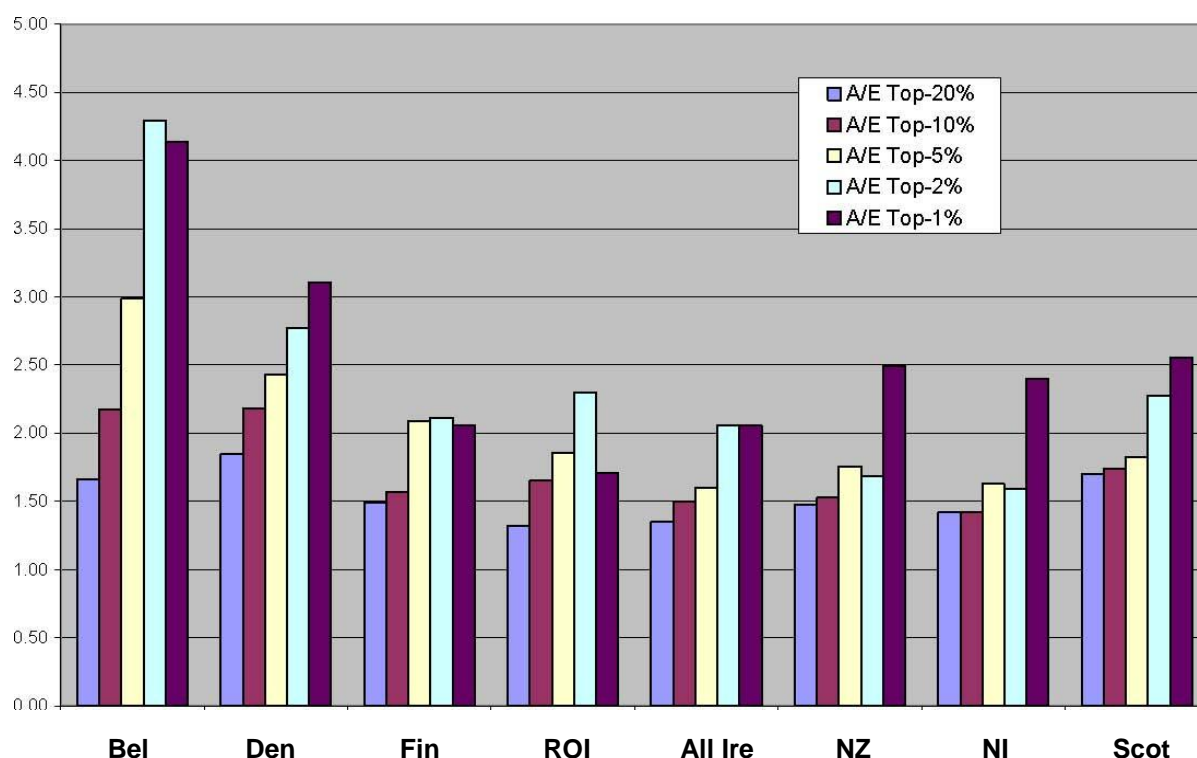


Figure 6.4 Total share of highly cited publications in PHR/HSR

### Sub-field outputs

When we look at the breakdown of output in the sub-fields of PHR & HSR (Table 6.4), we see that *Public, environmental & occupational health* is the largest sub-field for both RoI (almost 25 per cent) and the comparator countries (almost 33 per cent). The next largest sub-field is *General Medicine* containing the high-impact general medical journals (NEJM, JAMA, BMJ and The Lancet), representing just over one fifth of the total field output for both RoI and comparators. This is followed for the RoI output by *Nutrition & dietetics* (11 per cent), *Health care policy & services* (with 9 per cent), *Nursing* (7 per cent), and *Geriatrics & Gerontology* (4 per cent). A variety of other sub-fields comprise the remainder of the RoI output, including *Rehabilitation*, *Psychiatry*, *Social Science*, *Infectious disease*, *Dentistry* and so on. In conclusion, there is no marked difference in the composition of subfields comprising the RoI and comparator field output.

In terms of impact at the sub-field level, for RoI the largest sub-field (*Public, environmental & occupational health*) has an average impact score (1.06) less than the mean comparator score (1.15), and significantly less than the impact score for the two leading countries (1.32 Denmark and 1.27 Finland). Perhaps not surprisingly, given the predominance of the high-impact medical journals within this field, the impact level of *General Medicine* sub-field is very high for all countries, with values far

above the average field impact level (1.0). Of note, however, is the RoI impact score for this sub-field (7.01), which is higher than the average comparator score (5.68), although less than that of Belgium, Finland and Denmark (using the more appropriate impact indicator CPP/JCSm for this sub-field, the RoI score ranks highest). It was also found that the RoI impact score for the sub-field of *Nursing* (1.95) is higher than the mean comparator score (1.44) and second in rank to Belgium. Less positively, the RoI impact score for the sub-field of *Health care policy and services* (at 0.68) is significantly lower than both the world field average (1.0) and the average comparator (0.90): only the Northern Ireland and New Zealand scores are lower.

**Table 6.4 Breakdown of publication output into sub-fields**

Sub-field	% Total Output		Impact [CPP/FCSm]	
	ROI	Comparator (Mean)	ROI	Comparator (Mean)
Public, environment & occupational health	24	32 ±6.9	1.06	1.15 ±0.14
Medicine (Gen)*	21	21 ±6.7	7.01	5.68 ±3.19
Nutrition & dietetics	11	8 ±3.4	1.29	1.36 ±0.32
Health care policy & services	9	8.5 ±2.5	0.68	0.90 ±0.33
Nursing	7	4 ±4.0	1.95	1.44 ±0.52
Geriatrics & gerontology	4	2 ±0.4	1.36	1.43 ±0.44
Other Fields**	24	24.8	/	/

\* Field comprises high impact general medical journals (Lancet, New England Journal of Medicine, British Medical Journal and Journal of the American Medical Association.)

\*\* Other fields (not more than 3 per cent individual share of total pop health pubs) include: Rehabilitation, Psychiatry, Social Science, Infectious disease, Dentistry, Tropical Medicine, Substance Abuse, Medical Imaging, Medical Informatics, Sports science, etc.)

## 6.4 PHR and HSR-relevant grey literature

In addition to peer reviewed research outputs, grey literature<sup>40</sup> represents an important body of knowledge and data in the areas of PHR and HSR, which may, in many instances have a greater policy impact than scholarly publications. Therefore, the review looked at grey literature produced within, or for, the public sector from 2000 to 2008 in topics of relevance to PHR and HSR. This included 670 publications varying in content from literature reviews and expert opinion pieces through to projects that required the collection of new data. The primary sources of information were the All-Ireland electronic Health Library<sup>41</sup>, the HSE Lenus On-line Archive<sup>42</sup> and websites of government

<sup>40</sup> In 1997, the term grey literature was defined at the Third International Conference on Grey Literature as "that which is produced on all levels of governmental, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers". Examples of grey literature include conference abstracts, research reports, book chapters, unpublished data, dissertations, policy documents and personal correspondence.

<sup>41</sup> In December 2008 member organisations contributing to the AIEHL included the Archive of Irish Health Publications (HSE); Centre for Ageing Research and Development in Ireland (CARDI); Centre of Excellence for Public Health in Northern Ireland (CoE); Community Development Health Network (CDHN); Healthdata (HSE); Health Promoting Hospitals and Health Services Network (HPH); HRB Publications (HRB); IPH eLibrary (IPH); National Documentation Centre on Drug Use (HRB); Northern Ireland Cancer Network (NICan); and Wellnet (IfH, EHSSB). Accessed online at <http://www.aiehl.org/>

departments and statutory agencies. Telephone and/or email contact was necessary to trace publications which were referenced but not accessible online.

There are a number of caveats attached to the subsequent analysis. These publications capture the breadth rather than the depth of any existing evidence having been drawn from a diverse range of sources that does not easily lend itself to traditional methods of quality appraisal. Furthermore, only publications which are in the public domain were included. It is expected that there may be a further subset of research whose outputs have never been made public. Finally, there is no way to gauge the 'impact factor' of such literature.

### 6.4.1 Analysis of PHR and HSR grey literature

640 relevant publications generated over an eight year period from 2000 to 2008 were identified and were categorised as follows:

- Year of publication
- Type of publication
- Authors
- Title of publication
- Public Health Language/SNOMED (PHL/SNOMED) classification,
- Commissioning body name
- Commissioning body type

In most instances the PHL/SNOMED classification was already attributed to each publication. Where it was not this was attributed by the HRB.

### 6.4.2 Grey literature outputs in PHR and HSR

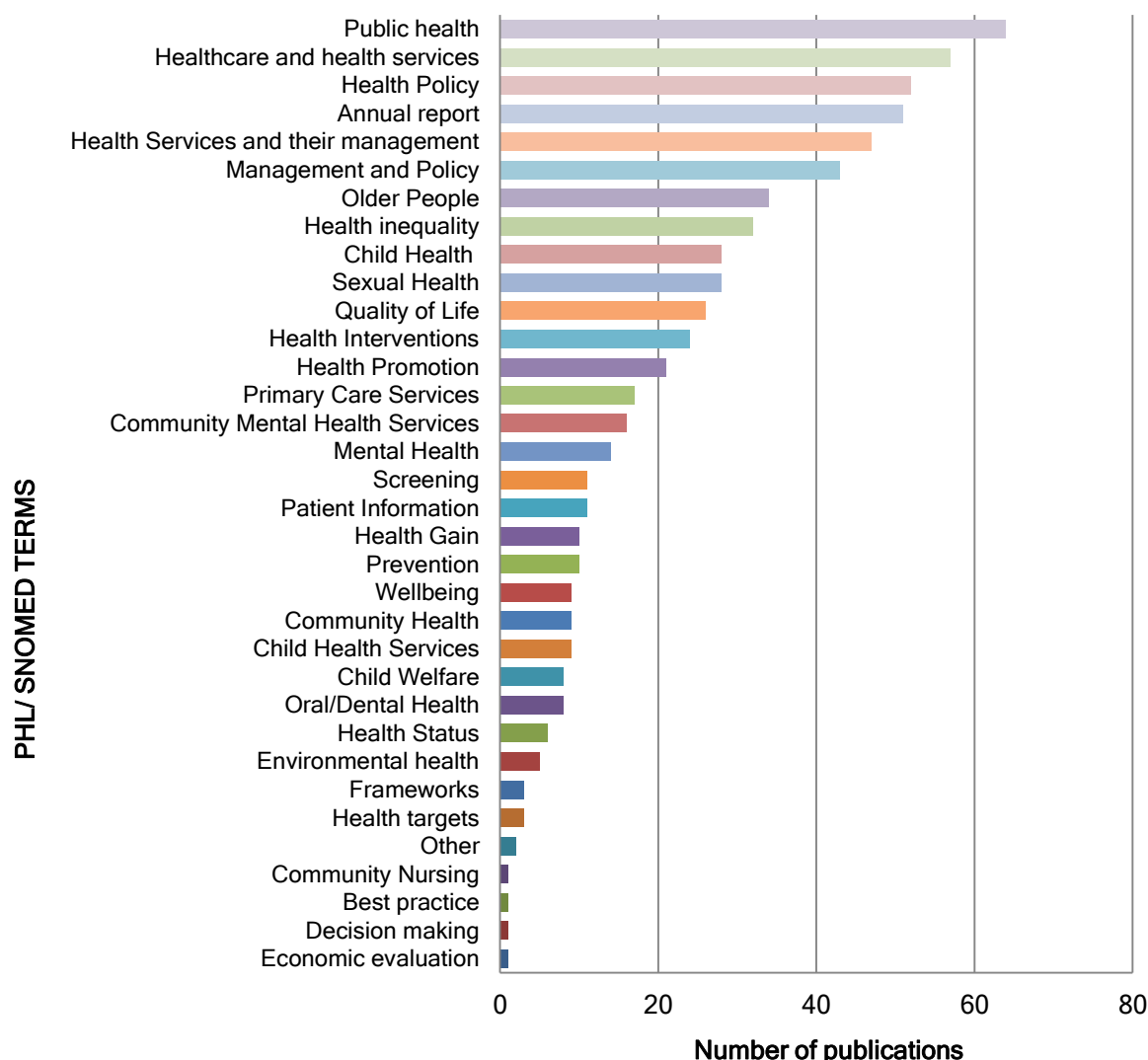
Describing the grey literature is challenging since it is vast, diffuse and of variable quality. The Public Health Language/SNOMED (PHL/SNOMED), which provides a common hierarchical classification structure across ten main headings and 2000 terms, was used to ensure consistency in description<sup>43</sup>.

The Public Health Language was created by the integration of two complete vocabularies, i.e. the Health Development Agency Thesaurus and the Public Health Tagging System; and augmented by the selective addition of terms from two other vocabularies, i.e. the Department of Health taxonomy and the Government Category List. The Systematised Nomenclature of Medicine Clinical Terms (SNOMED) originated in the UK and is now used in more than fifty countries around the world to facilitate electronic communications between health care professionals. The PHL/ SNOMED takes the form of an ISO9000 thesaurus that contains some 2,000 terms related to public health practice, including non-preferred terms or synonyms, organised on 10 hierarchical top levels. It has a multi-hierarchical structure, which means terms can appear in more than one place, organised from the general to the specific. This granularity allows very detailed clinical data to be recorded and later accessed or aggregated at a more general level.

<sup>42</sup> Accessed online at <http://www.hselibrary.ie/>

<sup>43</sup> See <http://www.phl.nhs.uk/> for details.

Classification of the publications identified by this review is shown in Figure 6.5, which demonstrates the varied nature of research of this literature.



**Figure 6.5** Categorisation of Irish public sector grey literature (200-2008) by PHL/ SNOMED TERMS

A more interpretable view is given by looking at the PHL/ SNOMED 10 top level categories at the summit of the hierarchy as illustrated in Table 6.5. At a first glance it is obvious that public-sector focus is very polarised with the majority of publications (86 per cent) falling into two broad PHL/ SNOMED categories. The most active category (50 per cent), *Health Services and their Management*, covers all aspects of the provision and management of health care services, including the political and legislative background, and policy issues. This is followed by the *Health, Public Health, Health Promotion* category (36 per cent) which covers the core topics of health and quality of life, public health and the promotion of health and prevention of ill-health. Prioritisation of management and policy areas is expected within the public sector particularly given the dramatically changing context of Irish health policy, organisation and delivery. The HSE was established in 2005 with the overriding objective to create Ireland's first ever integrated system for primary, community and continuing care, hereby improving the quality, consistency and accessibility of patient care. The generated grey literature also address questions regarding the shift towards promoting health and preventive care within a primary care/ community setting away from the hospital settings.

**Table 6.5 Top 10 PHL/ SNOMED level categories**

PHL/ SNOMED TOP TERM CATEGORIES	Numbers of publications
• Communication and Knowledge	3
• Death, Disease and Disability	0
• Determinants of Health	53
• Equipment	0
• Health Services and their Management	333
• Health, Public Health, Health Promotion	241
• People and Populations	35
• Public Health Methods, Theory and Research	5
• Setting and Place	0
• Time Factor	0
<b>Total</b>	<b>670</b>

Two additional PHL/SNOMED categories account for a further 13 per cent of publications. The *Determinants of Health* category (8 per cent) covers all the factors which influence the health of populations such as environmental, social, educational and occupational factors, including those associated with individual behaviour such as accidents, alcohol misuse, smoking, food and nutrition, falls, traffic accidents etc. These publications generally chart the improvement in health status in recent years showing how the wider determinants in health have a greater impact on health than the health services. This work is underpinning the current prioritised actions of the Health Service Executive (HSE) in refocusing on chronic conditions, reducing the seven major risk factors that are known to contribute to the major causes of death and illness/disability.

The *People and Populations* category (5 per cent) covers individual persons and groups of people including ethnic minorities, religious groups, age groups and disadvantaged groups. Broadly speaking the publications generated in this category are focused on examining the changing demographics of Ireland's population. This includes the recent diversification of the population to include more ethnic minority groups and the ageing of the population which is predicted to see the proportion of the population aged 65 and over increase to 15.4 per cent by 2021. For the first time from 2001 to 2008 all Irish people aged 70 and over had access to primary care and prescribed drugs free at the point of delivery (means-testing was re-introduced in the 2009 budget).

A minimal portion of publications (1 per cent) is dedicated towards improving the quality and efficiency of public health monitoring, reporting and evaluation, i.e. *Public Health Methods, Theory and Research* category, or towards retrieval and communication of information, including promotion and marketing and the use and dissemination of health knowledge, i.e. the *Communications and Knowledge* category. It is widely acknowledged that the quality and efficiency of public health monitoring, reporting and evaluation is one area that needs wider attention in Ireland. Given the current pressure on budgets the health service needs to be able to deliver and demonstrate the effective use of resources. In the past data inadequacies, particularly at the primary care and community levels, have hindered the target setting and monitoring process.

In four of the broad PHL/SNOMED categories - *Death, Disease and Disability*; *Equipment*; *Setting and Place* and *Time Factor* - no grey literature was identified.

### 6.4.3 Producers of grey literature

Twelve government departments produced PHR and HSR publications, eight from the Republic of Ireland and four from Northern Ireland. This practice was strongly led by the relevant health departments - the Department of Health and Children Ireland and the Department of Health, Social Services and Public Safety Northern Ireland - but it also included departments with responsibility for social and family affairs, justice and equality, environment and local government, finance, education and, arts, sports and tourism.

Thirty-one statutory agencies produced PHR and HSR publications to a varying degree across a breadth of categories. Key agencies<sup>44</sup> included the HSE, the National Disability Authority, the National Consultative Committee on Racism and Inter-culturalism, the Combat Poverty Agency, the Crisis Pregnancy Agency, the Food Safety Authority of Ireland, the Mental Health Commission, the National Council on Ageing and Older People, Forfás, the Office of Tobacco Control and the National Council for Special Education.

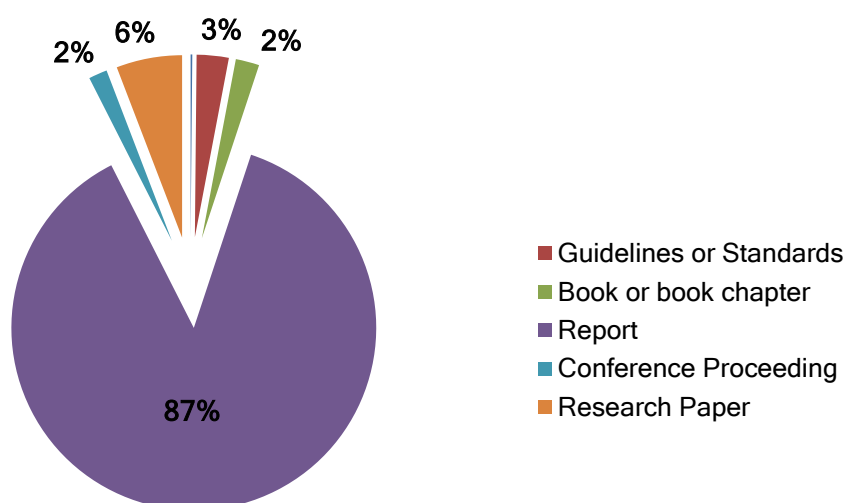
A whole-of-government approach is seen in cross-government committee publications, 12 in eight years, which mostly fed into the skills sector. Outside the committee structures there appears to be little cross-government partnership with only 2 identified instances of separate government departments commissioning publications jointly. Likewise, there is no sustained evidence of a close connection between the policy and operational aspects of health with few joint DoH and HSE publications within their combined 200+ publications during the eight-year period.

In preparing these publications the public sector sought the input of academics from each of the main universities on the island, the RCSI and a number of the Institutes of Technology (Dublin, Blanchardstown and Waterford), the ESRI, and the IPH. International experts from universities both within the UK (London, York, Warwick, Oxford, Bristol, Leeds, Northampton, Leicester, Southampton) and further afield in Canada (University of Montreal), USA (National Genome Research Institute, National Institute for Health, University of California, Wesleyan University), Finland (Ikonen Academy of Finland), and the Netherlands (Institute for Care and Welfare and Leiden University) also contributed. Consultants from 15 different consultancy firms and an equivalent number of independent consultants contributed. These included Indecon, Prospectus, Publica, Colgan and Associates, Teamwork Management Ltd, CSC, McKinsey, Ralaheen, Booz Allen Hamilton, WRC, Peter Bacon, Goodbody, Deloitte and Touche and FGS Consultants.

### 6.4.4 Dissemination of grey literature

The grey literature was packaged primarily as reports (87 per cent) but also included research papers (6 per cent), policy guidelines or policy standards (3 per cent), conference papers (2 per cent), book chapters (2 per cent) and a single dataset which was developed within a university setting (Figure 6.6). This packaging is important in terms of measuring accessibility, quality and impact. Firstly, given that policy-makers do not package research in the more academic vein - one could hypothesise that academic-style publications may be less familiar to policy-makers. Secondly, methods used to measure the impact of research, namely bibliometric analysis, economic rate of return, peer-review, case studies, logic modelling, and benchmarking, may not register the full body of publications on PHR and HSR in Ireland given that it is mostly presented as non-indexed individual reports.

<sup>44</sup> Many of these agencies and departments have since been dissolved or integrated into parent departments under the current government restructuring programme. For example, the National Consultative Committee on Racism and Inter-culturalism was dissolved in December 2008 and Combat Poverty Agency has since been integrated with the Office for Social Inclusion.



**Figure 6.6** Publication format for commissioned publications

### 6.4.5 Features of the commissioning landscape

There are many features of the current commissioning landscape which were unearthed during this review. Publications are typically being generated close to where the research questions are being formulated (i.e. in-house). Publicly there is no evidence to substantiate concerns that private consultancies are being commissioned to undertake PHS and HSR at the expense of academics. The overall commissioning process is seen to be highly fragmented, comprising a mass of individual projects belonging to different programmes. With obvious exceptions, it appears, superficially at least, to lack any strategic, sustained thinking about issues which are relevant to a whole-of-government approach and to the impact of central policies on PHS or HSR.

The current process of setting programmes and prioritising themes is one which takes place at the level of individual commissioning organisations and in independent research organisations. There is a need to ensure that this agenda is set within a wider national strategic context and that the existing knowledge base can inform development of future policy and research programmes. In PHS and HSR, as in other health research areas, a more effective communication system is required to co-ordinate commissioning activities and to disseminate any publications. This lack of a co-ordinated policy created severe difficulties when seeking to review a commissioning practice which integrates the knowledge of university researchers, government departments, policy-making institutes, private consultants and the voluntary sector. Often labour intensive efforts were needed to trace details of publications which were produced during the study period but which were no longer available online or in hard copy formats. Given its fragmented nature particular emphasis should be given to the need for central processes to diffuse the results and to promote relevant publications to a wider constituency involved in this broad, multidisciplinary area. In fact, extrapolating the evidence suggests a huge disconnect between knowledge management, brokering and transfer activities in PHS and HSR in Ireland.

In the current economic climate there is a pressing need for research advocates, funding bodies, research providers and others to make the case for resources to be directed into the research enterprise. Ireland's overall spending on PHS and HSR is difficult to establish, because unlike many



other disciplines which have substantial resources allocated by central government, PHS and HSR funding comes in much smaller amounts from a variety of sources. Quantifying the financial resources directed to public commissioning is beyond the scope this review but should be an important consideration for future work. Ideally any examination of commissioned outputs should be extended to describe the quality and impact of research.

# Chapter 7 Examining policy and practice impacts of Irish PHR and HSR

## 7.1 Introduction

Chapter 6 looked at level, type and quality of Irish PHR and HSR outputs by analysing the publications produced by Irish academic departments, how they are disseminated and their international visibility and standing. However, this data cannot predict whether these research outputs are having any tangible impact on policy formation in Ireland. Chapter 7 attempts to ascertain the impact of PHR and HSR on health policy and practice in Ireland, from the perspective of research producers and policy makers.

Data for this study was obtained through a survey of research performers, described in full in Appendix 4.3. On the basis of this survey, a follow-up of selected respondents was undertaken to gain further understanding of the barriers and facilitators to knowledge transfer and policy/practice impact. This chapter also describes the outcome of a consultation with DoH personnel on their use of research evidence in policy formulation.

### Key observations:

- The demand for research evidence remains weak among policy makers and health managers. The observed disconnect between the demand for and supply of research evidence may be due in part to the fundamental differences between the research and policy communities.
- Factors identified as important enablers of policy impact included effective timing of research, its contextual relevance in addressing a key knowledge gap for policy-makers and service providers, the development of on-going relationships with stakeholders, the commitment of time and resources in dissemination processes and structures, and responsiveness of stakeholders to the research.
- Factors identified as barriers to effective knowledge transfer included a lack of organisational support for dissemination activities, lack of funding and incentives for such activity, unwillingness or inability by researchers to invest time in wider dissemination activities and to present research in an appropriate format for decision-makers, and a lack of leadership, time and resources in the health policy and service sectors to engage research providers.

## 7.2 Examining the wider impacts of PHR and HSR

In an attempt to assess the extent of influence of Irish PHR and HSR on health policy and practice in Ireland and to identify dissemination strategies employed by researchers to mediate this influence, over 300 researchers across the island of Ireland were surveyed. A subset of respondents was subsequently followed up to gain additional insight into the key factors that underpin successful knowledge transfer. The views of representatives in the DoH were also sought to ascertain the perspective of policy-makers on this issue.

Evaluating the impact of PHR and HSR is of growing importance to national and international agencies funding research in these fields. While the impact of locally generated research on national and international health policy and practice is perhaps regarded as the most important outcome of these fields, it is nevertheless recognised that such impact assessment is very complex given the multi-factorial basis of policy formulation and service provision, of which research evidence is one consideration. Notwithstanding this proviso, this review aimed to assess the extent to which Irish researchers considered that their work was influencing health policy and practice in Ireland. Data was collected through the inclusion of specific questions in the general survey of researchers described in Appendix 4.3. The objective of this part of the survey and the follow-up study was threefold:

- 1 By using 'proxy' indicators of impact, to determine the degree to which researchers considered that their work has contributed to health policy and practice.
- 2 To identify mechanisms and strategies adopted by researchers to disseminate their findings and to engage research-users in the policy and practice spheres.
- 3 To identify barriers to, and facilitators of, effective knowledge transfer from the perspective of research producers and research users.

Of the 476 survey recipients, a maximum number of 309 recipients responded to this part of the survey, representing 65 per cent of the sample. Analysis of the respondents showed that 48 per cent were qualified to Masters Level and 44 per cent were qualified to doctoral Level. 37 per cent held positions as senior lecturer or lecturer, 20 per cent held positions at professor or associate professor level, while 18 per cent held a clinical post with an academic element (e.g. academic medical or nursing position).

## 7.2.1 Drivers for research

To understand the key drivers of their research, respondents were presented with a list of options and asked to indicate whether any of these options never, rarely, sometimes or always influenced the initiation of a research study (Table 7.1).

**Table 7.1 Main drivers for research reported by respondents**

Research 'driver'	Never %	Rarely %	Some times %	Always %
Curiosity- or hypothesis-driven research idea	3	6	55	36
Address a major national or international health issue	1	7	56	36
Issue of policy gap identified by engaging informally with policy-makers or health service providers	13	19	54	14
Input from stakeholders through a formal mechanism such as an advisory committee or steering group (e.g. policy-makers, health services providers, health managers, etc.)	13	30	49	8
Issue identified through other means (e.g. government reports, media reports, conference attended, international research networks)	2	19	69	10
Response to tender for commissioned study in your area	13	21	53	13
Response to call from funding agency or government department	7	16	62	15

Research 'driver'	Never %	Rarely %	Some times %	Always %
Response to strategic initiative by government or health agency	9	25	56	10

The overwhelming majority of respondents ( $\geq 90$  per cent) stated that their own curiosity or hypothesis, or the desire to address a major health issue, served as the predominant motivating factor at least some of the time (while over a third stated that this was always the case). Furthermore, almost 80 per cent of respondents stated that an issue identified through means such as a government/media report, a research conference, or an international research network, was the key driver some of the time (10 per cent 'always'). Other common motivating factors included a response to a call for proposals by a funding agency (77 per cent 'sometimes/always'), and a response to a call for a strategic initiative or commissioned study (55 per cent 'sometimes/always'). Of note was the finding that for a significant number of respondents, the motivation to initiate a research study was at least sometimes based on informal (68 per cent) or formal (57 per cent) engagement of key stakeholders, such as policy-makers or health-service providers.

## 7.2.2 Impacts on health policy

In order to ascertain the impact of PHR on the formulation of health policy in Ireland, a list of activities was presented in the survey representing indicators of policy impact (Table 7.2). Respondents were asked if they had undertaken any of these activities 'never', 'once' or 'more than once'. The findings showed that a majority of respondents had interacted with research end-users on at least one occasion, through participation in a formal advisory group (59 per cent), attendance at a policy workshop or seminar (69 per cent), or by drafting a commissioned report on behalf of a policy-making body (52 per cent). Furthermore, over two-thirds of respondents reported that their research had been cited in a health-related policy or strategy, with 41 per cent of respondents reporting such an outcome occurring on more than one occasion. A majority of respondents (56 per cent) also reported that their research had contributed to a broader evidence base for the purposes of health promotion or advocacy.

**Table 7.2** Impacts on health policy reported by survey respondents

Impact Indicator	Never %	Once %	More than once %
Member of Advisory Committees/Groups to government or policy-makers	41	17	42
Contributed to government discussion papers	54	15	31
Carried out research that was cited in policy/strategy documents	32	27	41
Participated in policy workshops/seminars	31	18	51
Wrote commissioned report for a policy-maker e.g. government department, statutory agency, service provider	48	20	32
Made submission to consultation on new/revised Act	71	13	16
Contributed to evidence base for public health promotion/advocacy campaign	44	20	36

In an open question, some respondents reported a more significant impact of their research on international policy, while others reported an involvement in building capacity in the policy sector for the conduct and interpretation of research:

‘Engaging those involved in policy-making and service delivery in the design and conduct of research.’

‘Informally and formally I have worked directly with the HSE to advise on specific topics around data analysis and interpretation of results.’

Other respondents sought to raise awareness of issues relating to the linkage of research and policy-making, such as a lack of a supportive culture within research organisations for wider knowledge dissemination activities, and the perceived value by policy-makers of research that challenges the *status quo*:

‘... the question regarding the extent to which research has an impact on policy and practice is interesting, but needs to bear in mind that often institutions (particularly universities) place considerable constraints on this type of activity and certainly do not reward it!’

‘There is also a very high need for research independent of policy-making and politics in general. I hope my research contributed to this by producing an alternative account of current developments in healthcare reforms.’

‘My research can be seen by governments and/or vested interests as being threatening as it involves system change.’

### 7.2.3 Impacts on health practice

In an attempt to assess the impact of locally generated research on clinical practice and health-service provision in Ireland, respondents were presented with a list of activities considered by us to be proxy indicators of practice impact, and asked to indicate how frequently they had undertaken each of these activities (Table 7.3). The analysis showed that respondents reported a contribution of their research to clinical guidelines (57 per cent), health service planning/organisation (53 per cent) and evaluation of the evidence for a new intervention through a HTA or systematic review (54 per cent). Of further interest was that almost two-thirds of respondents reported a contribution of their research to medical education and training.

**Table 7.3** Impacts on health practice reported by survey respondents

Impact Indicator	Never %	Once %	More than once %
Contributed to the development of practice/treatment guidelines or protocols	43	17	40
Evaluated the evidence for a new intervention (e.g. health technology assessment, systematic review, feasibility study)	46	22	32
Involved in the introduction of a new intervention, service, process or system in the health services (e.g. as a result of a randomised control trial)	61	16	23
Contributed to the planning or organisation of health service provision (e.g. future needs assessment)	47	22	31
Influenced the provision, content or approach taken to training and education	35	21	44

In an open question, respondents cited some other types of practice impacts (e.g. participation in the development of a GP information pack) and examples of their research influencing clinical practice or health care delivery in other jurisdictions:

'I am a reviewer for the National Institutes for Health Research Health Technology Assessment programme NHS UK. I have managed two large multicentre RCT (randomised controlled trial) studies for the NIHR Health Technology Assessment programme.'

'I was lead author of two systematic reviews that were cited in a NICE [UK] guideline. One of these reviews identified significant gaps in the evidence base and was cited in a HTA call for a randomised controlled trial in the area (this trial has now been commissioned).'

'Much of my health systems and policy research is multicountry with a focus on influencing global as well as national policy. The evidence contributes to complex causal pathways that impact on health service delivery.'

## 7.2.4 Research dissemination strategies

Of critical importance for researchers in the fields of PHR and HSR is the need to develop linkages with, and disseminate the findings of their research to, the relevant audiences or 'end-users' of such research. The HRB has recognised the importance of dissemination and has, for many years, included a specific budget line in research awards for this activity. It is expected that dissemination activities should be conducted throughout the project and extend beyond peer-reviewed journal articles. In this context, respondents were asked to indicate the extent to which they had employed dissemination and linkage strategies with key stakeholders (Table 7.4). In terms of disseminating to their fellow researchers, respondents were very active in using the traditional modes of communication in academia, as the significant majority had published findings in national (78 per cent) and international (87 per cent) peer-reviewed journals, and had presented their research at scientific conferences (94 per cent) on at least one occasion.

**Table 7.4** Dissemination strategies used by survey respondents

Mode of dissemination	Never %	Once %	More than once %
Publish in professional association bulletins/newsletters	29	14	56
Publish in national journals relevant to your field	22	11	67
Publish in international journals relevant to your field	13	8	79
Present your research findings at conferences relevant to your field	6	5	89
Informal networks or contacts with policy-makers or professional bodies that represent practitioners and that play a key role in guideline/policy development	17	15	68
Formal or structured linkages with policy-makers or professional bodies to engage key stakeholders in the research process from initiation to completion	36	20	44
Meetings with policy-makers or practitioners prior to design of a research study to identify a policy or practice-relevant problem	32	17	51
Policy-briefing document, booklet or other communiqué, submitted to policy-makers, describing the policy-relevance of your research findings	52	19	29

Mode of dissemination	Never %	Once %	More than once %
Seminar or workshop involving researchers and policy-makers/health service managers/practitioners to discuss the relevance or impact of your research to them	31	21	48
Article submitted to bulletin/newsletter of government body	73	13	14
Article submitted to local, regional or national newspaper or health supplement	50	17	33
Engagement with patient organisation or advocacy group for whom your research findings would be of interest	45	14	41

As is evident in Table 7.4, an unexpectedly high proportion of respondents reported the use of both informal (68 per cent) and formal (44 per cent) linkages with research end-users on more than one occasion. The formal linkages involved the establishment of mechanisms such as steering committees and research partnerships with key stakeholder engagement:

‘Involved policy-makers in steering committee of funded research to gain support, encourage ownership and uptake of results, as well as establish a link to ensure that future research is responsive to policy needs.’

‘Partnering with leaders in service and policy in research grant applications to ensure their ownership of and commitment to research with a view to their acting on the research findings.’

‘Developed research partnerships that involved both policy-making and policy-implementation stakeholders thus ensuring a pathway for policy-relevant research to be conducted and findings implemented.’

Almost half of respondents indicated that they had developed and circulated a policy brief or ‘evidence-based position paper’ to relevant stakeholders describing their research findings. Of further encouragement was the significant proportion of respondents (50 per cent) who had used local or national media to disseminate findings. Some respondents articulated a need for specific training for researchers in dealing with the media, with the HRB perhaps facilitating this:

‘I think a useful skill that researchers need to develop is how to deal with the media when a piece of work becomes of more general interest and gets greater exposure. Preparing for a conference is very different to having ten minutes to gather thoughts for a radio interview. Given the HRB’s excellent track record in media handling they may be in a position to facilitate short courses.’

A significant proportion of respondents (55 per cent) reported engagement with patient or advocacy groups relevant to their field of research as an indirect means of influencing policy. In an open question, a few respondents indicated involvement with the political class in disseminating research findings, such as liaising with political representatives, using data in Private Members Bills, presenting to a Joint Oireachtas committee and so on. Finally, a lack of capacity and support in the system for effective dissemination and interaction by researchers with key stakeholders was a theme in the open responses. Suggestions by respondents as to how relevant agencies such as the HRB could strengthen capacity in the system for effective dissemination focused on the need for dedicated funding and support for dissemination activities and training workshops for researchers:

‘Some workshops on the links between research and policy formation could be useful, particularly for those, who have received no formal training on health / social policy in Ireland.’

‘... the reality of doing research, with extremely tight timescales and budgets, means that there is just never enough time, funds, or other resources available at the end of the project to fully



engage with this issue. In addition, because of the nature of externally funded research, project staff have usually moved onto other posts and are not around to assist with this. I am also not convinced that up until now research funders took seriously the issue of dissemination and recognised that, for this to be done effectively; it would have to be a core part of a research project and resourced accordingly.'

'The issues which this survey has examined are of critical importance. However, additional research should focus on strategies to enhance outputs from health services research. I believe many health researchers perceive this area as having been relatively (with respect to biomedical sciences) under-funded in recent years, especially in terms of infrastructure and strategic level funding.'

### 7.3 Follow-up study of selection of respondents

As a follow-up to the survey findings described above, further information was sought from a subset of respondents, with the aim of gaining greater insight into the barriers and enablers of effective knowledge transfer across the research-policy interface in Ireland. In total, 12 Principal Investigators (PIs) were contacted from the list of respondents who had indicated policy or practice impacts of their research in the original survey, of whom seven responded. A summary of the responses is included in Table 7.5. Respondents were asked to provide a clear, specific example of how their research findings influenced a health policy or practice and to indicate how they disseminated their research findings. In almost all cases, the research evidence or data generated by the PI filled a key knowledge gap or need and was relevant to wider policy or service issues at the time. Furthermore, the dissemination strategies employed extended beyond the traditional output of peer-reviewed journal publications (albeit that these were considered an important part of the process) to include other outputs and dissemination modes such as commissioned reports, research reports, new datasets/databases, media engagement, informal relations with policy-makers, membership of policy advisory group, and presentations to policy-makers and interest groups.

**Table 7.5 Summary of seven responses in follow-up survey**

Policy/practice influenced	How did research influence policy/practice?	How was research disseminated?
Introduction of methadone maintenance by the Irish Prison Service	Provided data on prevalence of: opiate use in prison; Hep C infection; Hep B immunisation rates. Data filled gaps in knowledge and gave leverage to policy-makers and practitioners to institute change	Two commissioned reports produced that attracted much media attention. Three journal articles (two in <i>British Medical Journal</i> )
Resource allocation in the HSE primarily in the Mental Health sector and Primary Care	On foot of HRB grant, PI's research unit developed national 'small-area deprivation index' - used by community psychiatric services for budgetary purposes. Also used by HSE to determine where primary care centres need to be established	Research reports produced and submitted to the Directors of Public Health. Index placed in the public domain via website
(1) DoHC estimates of dementia rates (2) Cardiovascular strategy and stroke services (3) Medical	(1) Survey of cognitive impairment in community led to revision of estimates of dementia cases (2) National audit of stroke care influenced cardiovascular/stroke review and	Produced research reports and journal publications; liaison with journalists; presentations at scientific meetings

Policy/practice influenced	How did research influence policy/practice?	How was research disseminated?
Council ethics guidelines	increased formal stroke services. (3) Survey of ethical practice with prisoners influenced Medical Council ethics guidelines	
The reduction of fluoride in water	National survey of children's oral health in 2002 reported increases in dental fluorosis - this influenced decision to reduce water fluoride levels from 1 ppm to 0.7 ppm in 2007	Research reports, presentations at meetings, communication with Chief Dental Officer. Data informed National Forum on Fluoridation
Government strategy on management of diabetes	Research used by national diabetes expert advisory group established to develop blueprint for diabetes services (PI is a member of this group)	Presentations at national meetings. Journal publications. Media reports - <i>Irish Times</i> health supplement. Feature in HRB 'Picture of Health'
National set of child well-being indicators	Data informed development of national set of child well-being indicators via protocol of 'Participative Research Processes' developed by PI's group. Indicators used to prioritise work of children's services committees. Office of Minister for Children and Youth Affairs to monitor progress towards national targets in child well-being using this data	Produced commissioned report - follow-up with DoHC, extra analyses, etc. Formal publication in government reports and peer-reviewed journals. Informal relations with OMC were crucial
Muscle strengthening via electrical stimulation in children with cerebral palsy	RCT provided robust evidence to caution use of electrical stimulation in children with cerebral palsy. Also provided information for parents to make choices for their children	Peer-reviewed papers, conference presentations, dissemination to paediatric physiotherapy interest groups and regional physiotherapy departments

### 7.3.1 Enabling factors for knowledge transfer

The enabling factors that were considered important by the PIs in positively influencing the utilisation of their research included:

- Most notably, **relevance and timing** of the research in contributing to a policy debate or strategy, and/or the explicit incorporation of policy and practice relevant issues into the research objectives.
- Identifying and making explicit the **gaps** in policy/service response and the level of unmet need.
- **Responsiveness** of policy-makers to the research and to the PI.
- Participation of PIs in **committees and networking** at a national level.
- Dissemination of research findings at **multiple levels** to a wide variety of audiences.
- Regarding **knowledge transfer** as an 'ethical responsibility' on the part of the PI.
- Building **on-going relationships** with policy-makers, practitioners and decision-makers:

‘... we have built good quality relationships with decision-makers over the years; we can gain access to them and they have learnt to trust us. In addition, we have explicitly built policy and practice relevance into the goals and overall objectives of our research programmes and thus into specific pieces of research. This has encouraged us to directly engage with decision-makers even when that is a difficult and time-consuming process. One factor that has really helped is conceptualising knowledge transfer as an ethical responsibility that we, as researchers, have to the research participants who volunteer the data.’

The main barriers cited by PIs to the uptake of their research findings in the specific examples described included a reluctance on the part of relevant stakeholders to accept the research findings, a resistance to the complexity of the research, and a lack of a relevant research ‘conduit’ to champion the research findings in a policy context. More generally, respondents were asked about the barriers they perceived to exist in the broader context of research utilisation in health policy and practice. These can be categorised into those factors most relevant to the research-producing sector and those relevant to the policy/practice sector:

**Research sector:**

- Lack of recognition or appreciation by research institutions about the value of knowledge dissemination to policy-makers.
- Lack of an agreed approach to measuring and placing value on knowledge transfer, so that success can be acknowledged and rewarded.
- Lack of effort from the research community to present findings in a way that is useful for decision-makers - too much emphasis on publication in international journals and too little focus on engagement with policy-makers means that researchers do not pay sufficient attention to the data required by health policy analysts.
- The need for researchers to seek partnerships with senior policy figures (a person-centred rather than a system approach and a tendency of policy-makers/service managers to consult with individual researchers or clinicians, rather than professional groupings).

**Policy/practice sector:**

- Lack of time, or resources, to access research.
- Lack of ‘buy in’ and involvement of policy-makers in research.
- Lack of awareness of the evidence by those formulating policy and lack of a clear pathway to evidence-based research in policy determination.
- Lack of leadership at a policy and practice level to advance the use of research findings in developing policy or influencing practice.
- Lack of trust in or acceptance of research evidence (possibly through fear of financial implications).
- Professional conservatism and institutional inertia to changing practice in potentially challenging ways.

Of encouragement was the view expressed by some PI’s that the general influence of research on policy formulation and health practice in Ireland was improving, due to researchers undertaking more policy-relevant research and a much greater awareness and willingness on behalf of policy-makers to engage with researchers and to take their findings on board:

‘Influence of research improving... A more general awareness of the investment in research has led to a great accountability and pressure for results in a reasonable timeframe. Policy relevant research is being conducted by all major public health-research departments.’

‘The link between policy and practice is often weak, and it can be particularly difficult to influence practice at a regional or local level, however the situation has improved in last 10-15 years. Researchers are now often asked technical questions around data quality, theory and data analyses by informed decision-makers. There is greater willingness to take on research findings on board, at least in areas of health promotion and population health and by practitioners.’

Furthermore, some respondents considered the system to be now more open to influence by researchers - provided that the relevance of the research is clear, that the research is made accessible to policy-makers and that the findings are of immediate value to stakeholders.

## 7.4 Consultation with DoH

To enable the identification of barriers and facilitators to the use of research from the policy-makers’ perspective, a representative in the DoH was interviewed. A summary of this consultation is included below.

Firstly, getting research evidence into policy, and policy into practice, is a very complex process and should not be underestimated - policy-making exists at many different levels, is centred on the ‘big picture’ and informed by multiple inputs, one of which is research evidence (other inputs may include political, social, economic considerations). Secondly, researchers and policy-makers are two distinct communities working in different contexts, to different objectives and timescales, and often with different ‘languages’. Researchers are often convinced that policy ought to be driven by research findings and other empirical evidence. From a political perspective, however, evidence is only one factor that shapes decisions. Government agendas are shaped in part by political commitments, party platforms, and the views of key political leaders.

While individual researchers may possess excellent communication skills and develop effective formal/informal dissemination strategies, a systemic deficit in knowledge transfer from the academic to policy sectors prevails. Furthermore, research producers can underestimate the capacity of policy-makers to digest complex research, and therefore present their findings in an overly simplified or inappropriate format. Thus, there is an important role for knowledge ‘mediators’ or facilitators to bridge the gap between the two communities. In particular, research commissioners should be proactive in taking on such a role.

Furthermore, findings from individual research projects carried out in a policy vacuum seldom influence the formulation of policy, unless they are directly commissioned by a policy-maker. In contrast, a policy-relevant body of research evidence that is consensus-based across a range of studies is more likely to influence policy. Thus, research questions should be based on an issue of current policy relevance - research evidence can have significant impact if it falls on ‘fertile ground’ and if there is a need for data to inform the policy debate. Research providers should therefore strive to align their work with the policy or practice agenda (whereas, in reality, research is often ahead or misaligned to policy and practice needs). There is a need to future-proof research by looking down the line in terms of what the key policy issues will be in five to ten years (e.g. the ageing population). Moreover, the identification of health-research priorities relevant to the needs of policy and the health services would be an important step in improving the uptake of research. The new HRB strategic plan,

including the establishment of a dedicated unit to act as a mediator of research evidence to policy-makers, is an important development that can improve the use of research for policy and practice ends.

## 7.5 Overall survey outcomes

The results of our survey showed that Irish PHR and HSR researchers rate themselves as being very active in engaging end-users of research and influencing national health policy and practice. A consistently high positive response was reported by researchers of engaging key stakeholders and end-users of research, both informally and formally, throughout the research process. A significant proportion of respondents reported an influence of their research on health policy, while over half of all respondents reported a contribution to clinical practice or health-service provision. The dissemination strategies employed by researchers ranged from the traditional academic outputs of peer-reviewed publications and scientific presentations to informal and formal linkages with research 'end-users' in the health policy and service provision sectors.

Notwithstanding a significant level of engagement by research providers with key stakeholders highlighted by the survey, we interpreted the findings with caution because of the tendency of researchers to over-emphasise the impact of their work in questionnaires, as observed in HRB end-of-grant reports for instance. In an attempt to ascertain clear narratives of actual research impacts and gain a deeper insight into the factors that hinder and facilitate effective knowledge transfer, we conducted a further study with a subset of respondents using a more detailed questionnaire and telephone follow-up. Factors that were considered important enablers of policy impact included effective timing of research, its contextual relevance in addressing a key knowledge gap for policy-makers and service providers, the development of on-going relationships with stakeholders, the commitment of time and resources in dissemination processes and structures, and the responsiveness of stakeholders to the research. Similarly, the barriers to effective knowledge transfer included a lack of organisational support for dissemination activities, lack of funding and incentives for such activity, unwillingness or inability by researchers to invest time in wider dissemination activities and to present research in an appropriate format for decision-makers, and a lack of leadership, strategy, time and resources in the policy and service sectors to engage research providers.

This is broadly in line with the findings of other studies on the factors affecting research utilisation in the social care and health contexts. For example, a recent comprehensive examination of research use in the Irish children's services<sup>45</sup>, which incorporated a literature review and wide stakeholder consultations, described multiple levels of barriers to research use. These include barriers in respect of **individuals** (e.g. lack of time, lack of confidence in research findings, lack of critical appraisal skills); barriers in respect of the **nature of research** (e.g. lack of fit between research findings and the reality of practice, the complex presentation of research, perceived lack of Irish research); and **organisational** barriers (e.g. lack of a research culture, lack of active encouragement to use research, inadequate dissemination strategies).

Conversely, factors that appeared to facilitate research use by policy-makers were individuals' personal interest and motivation, informal sharing in the workplace and the need to prepare annual reports and papers; accessibility, user-friendliness, practical relevance of **research** and the provision of research evidence in different formats; and a supportive **organisational culture** defined in terms of easy access to research material. Other facilitators included the ability to set dedicated time for the reading

<sup>45</sup> Buckley H (2009) *Putting research evidence to work: key issues for research utilisation in Irish Children's Services*. CAAB Research: Report No. 2. <http://www.caab.ie/getdoc/59565377-3b78-435e-8204-92508019fb1b/PREW-Full-Report.aspx>.

and discussion of research; the nomination of research ‘champions’, the provision of training in critical thinking, appraisal and evaluation skills; and the general ‘embedding’ of research by encouraging and motivating its use in protocol, guidelines and policy development.

Similar to the above findings, Dagenais et al. (2009) reviewed the literature and described four categories of conditions that foster knowledge transfer in population health:

- 1 **Individuals:** the perception among potential users that the proposed change is worthwhile, congruence between the needs, values and beliefs of users, and characteristics of the proposed change.
- 2 **Organisations:** support for the implementation of the change, leadership on the part of key stakeholders, and the culture of the setting.
- 3 **Strategies** to increase uptake: the involvement of potential users in research activities, and the development of explicit recommendations for action.
- 4 **Resources:** necessary time and materials, and human and financial resources<sup>46</sup>.

Finally, in a widely cited systematic review of 24 studies focusing on research utilisation from the perspective of health policy-makers, Innvaer *et al* (2002) identified the three most commonly mentioned facilitators of the use of research: personal contact between researchers and policy-makers; the timeliness and relevance of research; and the inclusion of a summary with clear recommendations<sup>47</sup>.

<sup>46</sup> Dagenais C et al. (2009) *Knowledge translation research in population health: establishing a collaborative research agenda*. Health Res Policy Syst. Dec 10;7: 28.

<sup>47</sup> Innvæ S et al. (2002) *A. Health policy-makers' perceptions of their use of evidence: a systematic review*. J Health Serv Res Policy. 7:239-244

# Chapter 8 Mapping of Irish PHR and HSR networks and collaborations

## 8.1 Introduction

This chapter looks at the current PHR and HSR networks and collaborations that exist in Ireland, and also examines some international models that may have application here in the future.

### Key observations:

- Formal linkages between policy makers and the research community are still weak. Where linkages exist, they are primarily informal, which of itself can be a very positive mechanism for interaction but should not be the only one.
- There are only a small number of formal networks and consortia in existence in Ireland that link practitioners and interest groups to a common purpose.
- While implementation of the *HRG Action Plan for Research* over the next three years should help to improve high-level links between the research funding providers and policy organisations, linkages relevant to PHR and HSR between these stakeholders may need to be developed through different routes.
- Whenever possible, Ireland should utilise its closeness to the UK by developing networks on an all-island basis which would seek to transfer learning and best practice and jointly leverage the sharing of research capacity, infrastructure and funding from the wider UK systems.
- Joint metrics covering both policy-makers and researchers would underline the inter-connectedness of efforts, although such metrics would need to be very carefully constructed to avoid distortions in the evaluation of outcomes.

## 8.2 Existing Irish PHR and HSR-relevant networks, partnerships and collaborations

While there are few networks relevant to PHR and HSR in Ireland, the landscape is not completely blank. This section looks at some existing networks, partnerships and collaborations in Ireland that benefit knowledge translation, development and enhancement of best practice in PHR and HSR. Some international models that could be adapted to the Irish landscape are also identified.

### 8.2.1 Advisory groups to government

In Ireland, formal linkages between policy-makers and/or health care providers and the academic community are currently weak. However, national advisory committees to government serve an important role in this regard. These advisory groups are generally focused on a particular policy concern. Examples include:

- The National Children's Research Advisory Board, operated by the Office of the Minister for Children (OMC) which links with academia to help identify knowledge gaps and inform policy-makers about how research works. Many of the projects funded under the 'children's research



series' were originally proposed by the group - and then further developed within the OMC with colleagues from different ministries.

- The boards of the National Advisory Committee on Drugs and the Women's Health Council, who serve a somewhat similar purpose and take a similar partnership approach, involving senior civil servants, community representatives and academics.
- The Office of Tobacco Control Advisory Group on Tobacco and Health, which has membership from policy makers, clinicians and the academic community, plays an important role in setting policy priorities for tackling the health effects of smoking, and identifying health promotion interventions in this area.
- The Advisory Science Council (ASC) provides policy advice to the Irish Government on science, technology and innovation issues and is a key interface between stakeholders and policy makers in the STI arena. The Council is comprised of members from academia, enterprise and professional sectors and a representative from Forfás, Ireland's national policy advisory body for enterprise and science.

## 8.2.2 Academic-practitioner networks and consortia

Among the academic community there are some relevant networks and consortia in existence in Ireland that link practitioners and interest groups to a common purpose. The NCI Cancer Consortium HRB Health Research Centres and the Irish Cervical Screening Research Consortium are of particular relevance to PHR and HSR:

- The **NCI Cancer Consortium**<sup>48</sup>, established in 1999, aims to reduce the incidence and mortality of cancer in Ireland and has developed a number of joint programmes covering the entire continuum of cancer. These include prevention, clinical trials, cancer registry and epidemiology, and scholar exchange. The Consortium, as an entity, does not provide direct funding of any programmes but a number of funding initiatives have been developed by partner agencies in Ireland (the HRB), Northern Ireland (Health and Social Care Research and Development Office) and the USA (National Cancer Institute).
- The HRB-funded **Health Research Centres (HRCs)** are virtual hubs for research across a number of disciplines and institutions, driven by a common health priority and by identified needs within the health system nationally. Two HRC awards were made in 2007, the first of their kind in Ireland, to a Centre for Primary Care Research which examines the quality of care provided to vulnerable patient groups - the elderly, children, pregnant women and drug users; and a Centre for Health and Diet Research, co-funded by DAFF, which will build up the evidence base for public policy, health promotion and clinical practice on the prevention and management of obesity, diabetes and related metabolic disorders.
- The **Irish Cervical Screening Research Consortium "Cerviva"** was established in 2005 to perform high quality research into cervical screening options, offer support to the Irish Cervical Screening Programme and improve the quality of cervical screening in Ireland. The consortium is comprised of scientists, clinicians, epidemiologists, health economists and has significant hospital, academic, biotechnology and national agency support. It is expected that the findings of the overall project will contribute to changes in cervical screening service delivery in Ireland.

Academic networks do not necessarily require specific investment or need to be based around specialist facilities. Associations, societies and informal networks typically provide opportunities for

<sup>48</sup> See <http://www.allirelandnci.org/>

researchers to exchange ideas, share information, identify collaborators, identify best practice, reach consensus on research agendas and to present research findings. For example:

- The **Joint Epidemiology Departments of Ireland (JEDI)** was established in 2007 to link like-minded academics in public health research in a loose alliance of all the academic departments of epidemiology both North and South. They meet approximately twice a year and have completed valuable work on a common approach to undergraduate teaching in epidemiology and public health. This work has had a significant influence on contemporary medical school undergraduate criteria in Epidemiology and Public Health.
- An interesting example of a knowledge-brokering network that links academics and practitioners is the fledgling '**Health Promotion Knowledge Network**', established in 2008, between the Health Promotion Research Centre at NUI Galway and the Health Promotion Department of the HSE West. This network aims to exploit the existing resources of both units to identify and address specific knowledge gaps. It involves HSE staff in the supervision (on placement) of students and shares information on these being undertaken, giving the HSE participants an opportunity to influence the direction of student research. If the systems that develop within this network appear to work the network aims to expand into a National Knowledge Network. Doubtless, there are other examples of individuals and centres creating such linkages with local HSE units and these initiatives could serve as both a model for others to adopt and a basis for funding support to expand them into national knowledge-brokering platforms.

### 8.2.3 Networks focused specifically on PHR

Health is more than health care and networks play an important role in forging partnerships between government and non-government representatives from the voluntary, non-profit and private sectors to mobilise a population health approach<sup>49</sup>. There are few Irish examples of such population health/public health-focused networks and these include:

- The **Public Health Alliance**<sup>50</sup>, for the Island of Ireland, established in 2006, is an independent, voluntary alliance of individuals and organisations from all sectors across the island that share a commitment to working together for a healthier and more equitable society by improving health and challenging health inequalities.
- The **Association of Public Health Observatories (APHO)**<sup>51</sup>, established in 2000, now represents a network of 12 observatories working across England, Scotland, Wales, Ireland and Northern Ireland. The APHO provides an important link between regional observatories and is a valuable forum for both disseminating good practice and for coordinating action across observatories.

### 8.2.4 Networks focused specifically on HSR

There are a number of health provider networks in existence on the island of Ireland, or to which Irish health care professionals have access, that link health care providers, academic researchers and the community. For example:

- The **Cooperation and Working Together Organisation**, established in 2003, oversees a partnership of health and social care service providers facilitating strategic cross-border

<sup>49</sup> Within a population health approach, the health sector works with other sectors to develop, implement, evaluate, research and resource actions for improved population health.

<sup>50</sup> See <http://www.phaii.org/>

<sup>51</sup> See <http://www.apho.org.uk/>

collaborative working in acute hospital services, primary community and continuing care (PCC), mental health, population health and disability. This partnership involves community and voluntary bodies and is supported by EU funding implemented through the two health departments.

- The **Health Analysts' Special Interest Group** (HASIG) was formed in 2008 to support the health analysts' community by providing opportunities to meet colleagues, share practical tools and advice, and support professional development.
- HASIG links to the **All-Ireland CHAIN** (Contact, Help, Advice, and Information Network)<sup>52</sup> which is co-sponsored by the Institute of IPH and the HSE in Ireland. CHAIN is a multi-professional and cross-organisational online network for people working in health and social care. It is based around specific areas of interest, and gives people a simple and informal way of contacting each other to exchange ideas and share knowledge.

## 8.3 International examples of PHR and HSR networks and collaborations

There are some excellent international examples of the development of population/public health collaborations that could serve as useful models for Ireland. For example:

- In Canada, many regions have developed **Population Health Improvement Research Networks** (see for example Ontario<sup>53</sup>), and a similar network has been established in Wales<sup>54</sup>. These networks link population health researchers, practitioners, policy makers and community partners to facilitate the development, strategic planning, delivery and evaluation of policies, services and interventions that directly or indirectly impact upon the health of the public at a community or population level.
- The Canadian Institute of Health Research (CIHR) has a total of 13 "virtual" institutes that are networks of researchers brought together to focus on important health problems. There is an institute dedicated to Health Services and Policy Research and another dedicated to Population and Public Health. The Institutes link researchers, health professionals, policy makers, voluntary organisations, provincial government agencies, international research organisations and industry and patient groups together and encourages partnership and collaboration across sectors, disciplines and regions.
- In the USA, the Centres for Disease Control and Prevention (CDCP) support a number of networks, communities of practice and on-line fora in the public health space. For example:
  - The CDC **Public Health Information Network** (PHIP)<sup>55</sup> is a national initiative to support the exchange of critical health information between all levels of public health and health care; develop requirement, standards and specifications for best practice; advance supportive policy and facilitate communication and information sharing within the PHIN community.
  - The CDC **Public Health Training Network** (PHTN)<sup>56</sup> is a distance learning network that uses a variety of instructional media to meet the training and information needs of the health workforce. Evaluation of this methodology had demonstrated its effectiveness in updating and enhancing professional competencies. PHTN is open to international partnerships and could provide a valuable resource for a similar Irish network.

<sup>52</sup> See <http://chain.ulcc.ac.uk/chain/index.html>

<sup>53</sup> See <http://www.rrasp-phirn.ca/>

<sup>54</sup> See <http://www.phirn.org.uk/about.html>

<sup>55</sup> See <http://www.cdc.gov/phn/>

<sup>56</sup> See <http://www2.cdc.gov/phtrn/>

- In the UK the **MRC Population Health Services Research Network** aims to bring together and add value to the MRC's existing investments in public health, health services and epidemiological research. The network has 12 members who comprise of the directors of the MRC units and centres. The network focuses on methodological approaches to PHR research, pooling and sharing resources for a more effective critical mass in PHR, especially for underrepresented disciplines, and provides a coordinated voice on research and policy issues in PHR.
- The **UK Health Services Research Network (HSNR)**<sup>57</sup>, which welcomes Irish membership, was formed in 2007 with the supported of the NHS Confederation and aims to connect all universities, commercial and professional organisations, charities and NHS bodies with an interest in HSR. The HSNR represents the HSR community to Government, funding organisations, the management community and other professional bodies by initiating and leading discussion and responding to policy issues and aims to build international links with equivalent bodies.
- The HSRN works closely with its sister network, the **Service Delivery and Organisation (SDO)**<sup>58</sup> Network, aimed specifically at health services managers with the objective of enabling them to improve and develop the services they manage by facilitating their access to and use of the latest health services research, leading to the development of improved health services. While Irish researchers, health care providers and managers and other professional bodies can benefit from the existence of the HSRN and the SDO there is still a need for similar, home-grown networks to be developed in Ireland, that can link health care providers, the academic community and other organisations at a local level,
- The German **Network for Health Services Research** was established in 2006, by 26 representatives of different national medical and public health associations. The aim of this network is to help bridge the gap between the scientific communities on the one hand and between researchers and practitioners on the other hand.
- The **International Health Services Research Network** founded in 2005 brings together elements of the long-established Academy Health in the USA with the Australia and New Zealand HSR Association and the Canadian HSR Association to enhance both the quantity and quality of HSR and, more importantly, the impact such research can have on policy and services. Membership of the Network includes not only groups of health services researchers in universities and other research centres but also health services bodies that have an interest in knowledge transfer.

<sup>57</sup> See <http://www.nhsconfed.org/Networks/HealthServiceResearchNetwork/Pages/HSRN.aspx>

<sup>58</sup> See <http://www.nhsconfed.org/Networks/SDONet/Pages/SDONetwork.aspx>

# Chapter 9 International policy models for PHR and HSR

## 9.1 Introduction

This chapter draws on examples of international best practice in developing support for PHR and HSR as a useful reference for understanding the challenges and opportunities in developing a national approach. Lessons can be learned from reflecting on the strategic contexts of countries such as Canada, the United Kingdom (UK), Finland, Sweden and Australia which have long-standing, well-developed approaches.

### Key observations:

- Despite the diversity of political values and governmental and organisational structures, the broad policy strategies and goals are similar across countries and hold many lessons for Ireland.
- The successful use of research evidence demands the establishment of effective interdepartmental, intergovernmental and intersectoral mechanisms so that policy initiatives are implemented concurrently and act synergistically.
- A focused and integrated whole-of-government strategy for action appears to be more successful than an approach which either emanates solely from within the health department, or is composed of various independent interventions.
- The involvement of the Finance Department is important in ensuring adequate funds to support research and policy implementation, but also in maintaining the commitment from other government departments.
- Substantial time lags often exist between the initial description of health problems and the implementation of national policies to address them.
- All-island partnerships with Northern Ireland could present Ireland with opportunities to learn from the more advanced UK health-research system.

## 9.2 Policy development and approach abroad

Many countries have attempted to put health before health care, often encouraged by the World Health Organization's (WHO) *Health for All* strategy and its successor *Health for All in the twenty-first century*<sup>59</sup>. The development of policy and the organisation of health-research systems to maximise the benefits of investment for patients is increasingly debated at the international level<sup>60,61,62</sup>. It is clear that despite the diversity of political values and governmental and organisational structures, the broad policy strategies and goals are similar across countries. The international strategic context is laid out below using selected examples from relevant countries.

<sup>59</sup> World Health Organization (1999) *Health for All in the Twenty-first Century (HFA 21): The Health Policy for Europe*. European Health for All Series, no.6 Regional Office for Europe, Copenhagen.

<sup>60</sup> Hanney SR and Gonzalez Block MA (2008) *Why national health research systems matter*. Health Res. Pol. Syst., 6:1.

<sup>61</sup> McDaid D et al. (2008) *How can European Health Systems Support Investment in and the Implementation of Population Health Strategies?* Policy Briefing prepared for the WHO European Ministerial Conference on Health Systems in Tallinn Estonia 25-27 June 2008. World Health Organisations and European Observatory in Health Systems and Policies.

<sup>62</sup> Subcommittee on Population Health of the Canadian Standing Senate Committee on Social Affairs, Science and Technology (2008) *Population Health Policy: International Perspectives*.

## 9.2.1 Canada

Canada has led the world in understanding population health and disparities and in stressing the need for a preventative 'upstream' approach to health care provision with an integrated health-research system<sup>63,64,65,66,67,68,69</sup>. In 2000 the Canadian government brought together Canada's Medical Research Council, the National Health R&D Programme and the Social Sciences and Humanities Research Council into one agency - the Canadian Institutes of Health Research (CIHR). This agency was given a dual mandate: to (i) support scientific excellence, and facilitate and accelerate the translation of knowledge and (ii) oversee an approximate 130 per cent increase in health-research funding over the next five-year period<sup>70</sup>. Its overall focus is on the four key pillars of health research: (i) biomedical, (ii) clinical, (iii) health systems and services and (iv) population and public health, with each of its composite 13 institutions examining an individual area of research. The CIHR provides leadership and support to more than 11,000 health researchers and trainees across Canada and links health professionals and policy-makers from voluntary health organisations, provincial government agencies, international research organisations, industry, and patient groups from across the country.

Alongside the work of the CIHR, health research is funded or performed at the national level by Statistics Canada, the Canadian Institute for Health Information, the Canadian Population Health Initiative, Health Canada, the Public Health Agency of Canada, the National Collaborating Centres on Public Health, and other federal government departments (Human Resources and Skills Development Canada). This work is supplemented by provincial level organisations. In addition, the Canadian government has in recent years funded a number of other initiatives aimed at building research capacity, many with strong health-research components: The Canadian Foundation for Innovation, The Canadian Research Chairs, Genome Canada and the Canadian Health Services Research Foundation (CHSRF). The latter is involved in evaluation and analysis into ways of organising health research, promoting the importance of collaborative approaches to organising health-research systems and the use of knowledge brokers<sup>71</sup>. Knowledge brokering is a popular, emerging strategy that is used to promote interaction between researchers and end users, as well as to develop capacity for evidence-informed decision-making.

## 9.2.2 United Kingdom

The UK has a long history of pioneering a national approach to population health with a strong health-research agenda. The 1977 Black Report focused public attention on the non-medical determinants of health and health disparities and set the agenda both for research and policy discussions over the next two decades<sup>72,73</sup>. Since 1992 a series of government strategy reports has seen the development of an

<sup>63</sup> Lalonde M (1974) *A new perspective on the health of Canadians. A working document*. Ottawa: Government of Canada.

<sup>64</sup> Epp J (1986) *Achieving Health for All: A Framework for Health Promotion*. Health and Welfare, Canada.

<sup>65</sup> World Health Organization (1986) *The Ottawa Charter for Health Promotion*. First International Conference on Health Promotion. Ottawa - WHO/HPR/HEP/95.1.

<sup>66</sup> *Towards a healthy future: second report on the health of Canadians*, prepared by the Federal, Provincial and Territorial Advisory Committee on Population Health for the Meeting of Ministers of Health, Charlottetown, P.E.I., September 1999.

<sup>67</sup> Health Canada (2004) *Canada Health Action: Building on the Legacy - Volume II - Synthesis Reports and Issue Papers*. Health Canada.

<sup>68</sup> CHPI (2004) *Improving the Health of Canadians. Canadian Population Health Initiative*. Ottawa, Canadian Institute of Health Information, Ottawa.

<sup>69</sup> Subcommittee on Population Health of the Standing Senate Committee on Social Affairs, Science and Technology (2009) *A Healthy, Productive Canada: A Determinant of Health Approach*. Final report.

<sup>70</sup> See <http://www.cihr-irsc.gc.ca/e/22955.html> for a detailed breakdown of funding between 1999 and 2000 and 2004 and 2005.

<sup>71</sup> Gold I (2006) *Getting Research Based Evidence into Policy and Practice - Brokering to Bridge the Divide*. Paper presented at Today's Research is Tomorrow's Health Care. Health Research Board, Dublin, 13-14 June.

<sup>72</sup> Black D (1980) *Inequalities in Health: Report of a Research Working Group*. United Kingdom Department of Health and Social Security.

<sup>73</sup> Marmot M (2001) *From Black to Acheson: Two Decades of Concern with Inequalities in Health*. A Celebration of the 90th Birthday of Professor Jerry Morris, *International Journal of Epidemiology*, 30, 5, 1165-1171.



ambitious long-term, whole-of-government approach to improving health<sup>74,75,76,77,78</sup>. Coordinated agendas at national, regional and local level aim to meet national targets, with progress monitored by the UK Treasury.

Health research in the UK is supported by a variety of funders from the public sector, charities and health industries, and from a variety of funding mechanisms. Public sector funders of health research are the Medical Research Council (MRC) (with some funding coming from other Research Councils) and the Health Departments of England, Scotland, Wales and Northern Ireland. The Wellcome Trust, Cancer Research UK and the British Heart Foundation, the three largest individual funders, undertake very substantial spending with annual research spends in the UK of over £400 million, £250 million and £60 million respectively. Industry contributes substantial funding to commercially led health research, which has resulted in the high profile of health R&D in the UK economy.

The National Health Service (NHS) R&D strategy, developed in 1991 in response to an influential parliamentary review and revised in 1994, was widely seen as the first attempt in any country to develop a national R&D infrastructure which was fully integrated into the management structure of the healthcare system<sup>79,80</sup>. In 2006 significant structural and operational changes were introduced. A new Department of Health R&D strategy consolidated research commissioning and centralised distribution of research funding within a virtual national research facility, the NHS National Institute for Health Research (NIHR)<sup>81</sup>.

Almost immediately the UK Treasury institutionalised a Single Health Research Fund with a stronger focus on translating basic science into improved care for NHS patients by aligning the research of the NHS National Institute for Health Research (NIHR)<sup>82</sup> and that of the Medical Research Council under a cross-departmental Office for the Strategic Coordination for Health Research (OSCHR)<sup>83,84</sup>. The Scottish Government and the Welsh Assembly became full partners of OSCHR in 2008 and discussions are continuing with the Northern Ireland Assembly. The NIHR provides a mechanism that can support collaborative and multi-centred research in the public interest in partnership with academia and industry (Figure 9.1) and manages its activities through four main strands:

- 1) The Faculty of the NIHR, includes all of the NIHR funded people working in the NHS, universities and registered charities in England, who generate research ideas in clinical and applied health care research, lead or support this research, and evaluate the effectiveness of health care interventions and policies.
- 2) An Advisory Board provides strategic advice on the direction, implementation and management of the NIHR. Advisory Board members include chief executives of NHS trusts and strategic health authorities as well as leaders of academic organisations. The Advisory Board advise and support the DG of Research and Development at the UK Department of Health on the strategic development of the NIHR. on priorities for the allocation of funds between infrastructure, capacity development and programmes or between health groupings.

<sup>74</sup> Department of Health (1992) *The Health of the Nation: A Strategy for Health in England*, DoH London.

<sup>75</sup> Acheson D (1998) *Independent Inquiry into Inequalities in Health Report*. The Stationery Office, London.

<sup>76</sup> Department of Health (1999a) *Saving Lives: Our Healthier Nation*, DoH London.

<sup>77</sup> Department of Health (1999b) *Reducing Health Inequalities: An Action Report*, DoH London.

<sup>78</sup> Department of Health (2003) *Tackling Health Inequalities: A Programme for Action*. The Stationery Office, London.

<sup>79</sup> Department of Health (1991) *Research for Health: A Research and Development Strategy for the NHS in England*. DoH: London.

<sup>80</sup> Research and Development Task Force (1994) *Supporting research and development in the NHS*. London, HMSO (Culyer report.)

<sup>81</sup> Department of Health (2006) *Best research for best health. A new national health research strategy*. DoH London.

<sup>82</sup> See <http://www.nihr.ac.uk/Pages/default.aspx> for more information on the NIHR. [Accessed 14/12/2010]

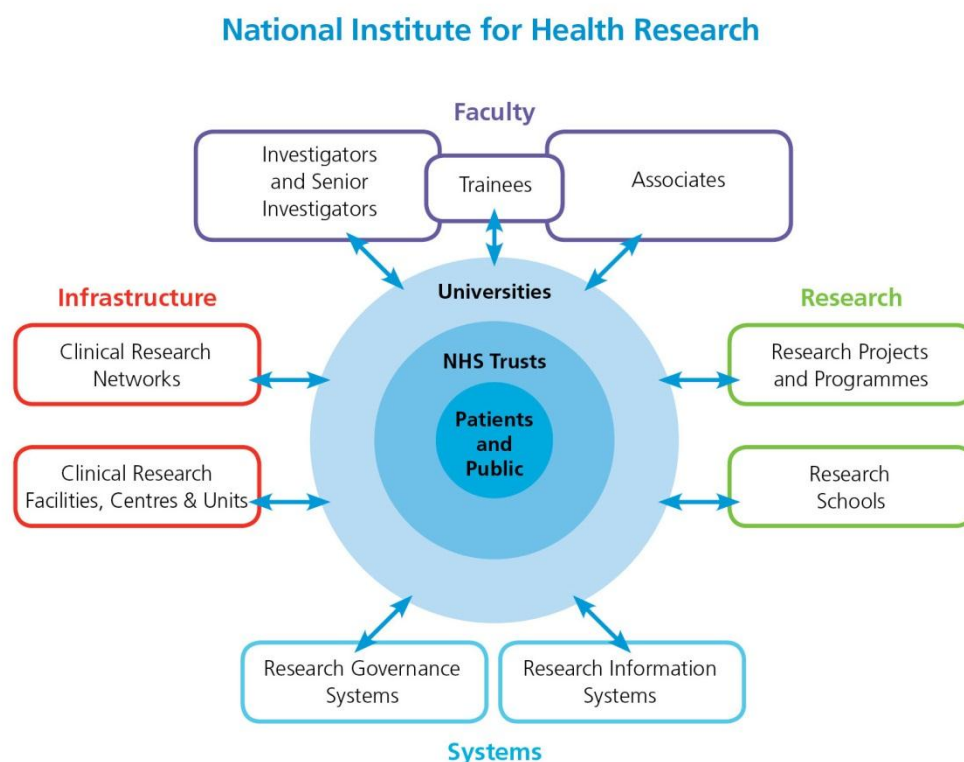
<sup>83</sup> Cooksey D (2006) *A review of UK health research funding*. London: HM Treasury.

<sup>84</sup> Lancet (2006) *Reorganising research in the UK. Comments*, Lancet, 368: 2105.



It also advises on the development of incentives for research in the NHS and the progression of a research and innovation culture.

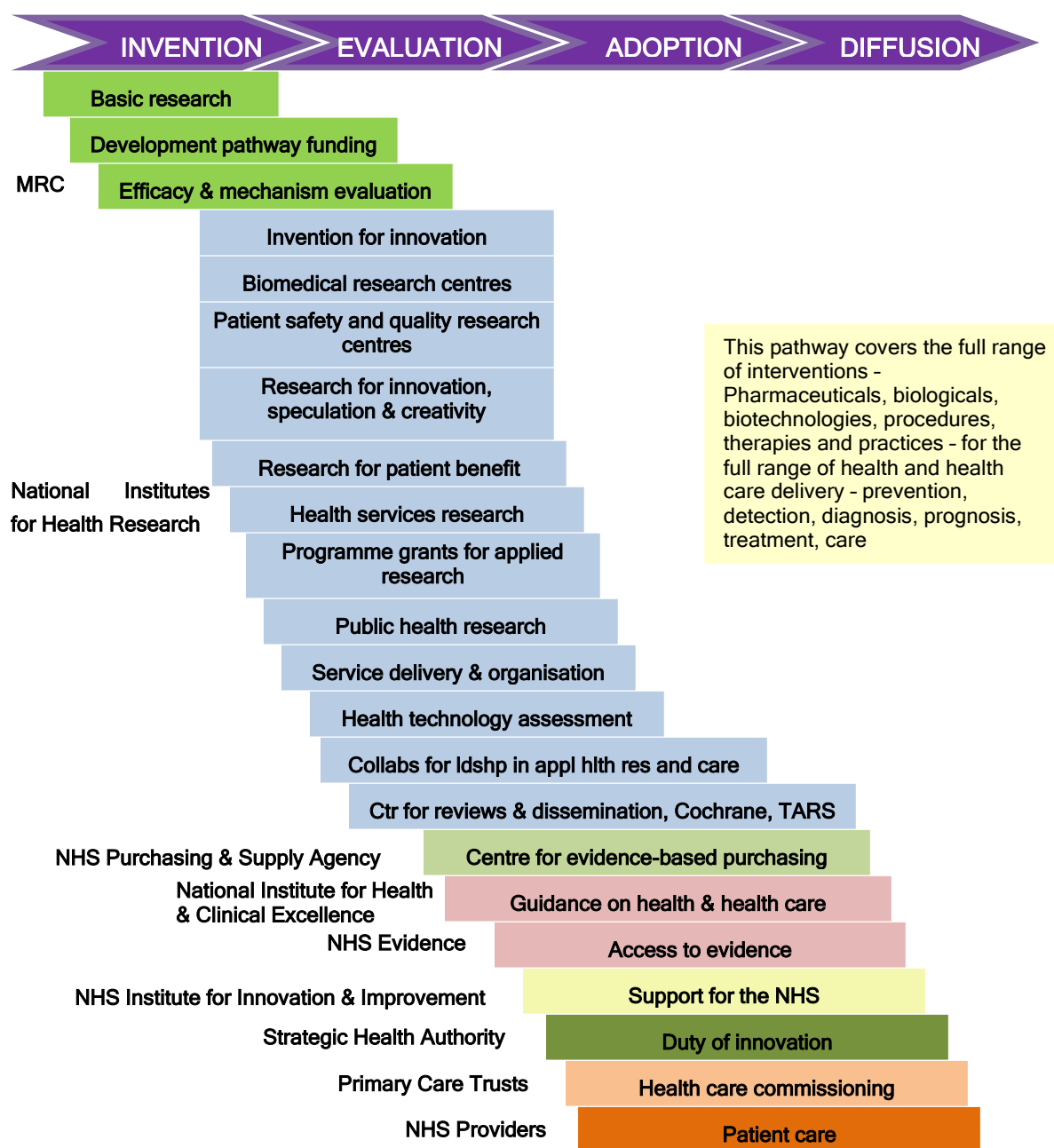
- 3) The NIHR commissions and funds a range of programmes addressing a broad range of health priorities for the NHS. Quality is maintained through open competition and peer review and research is funded that has the potential to provide evidence to support decision making by health professionals, policy makers and patients. Initiatives that make this evidence available, and that encourage its uptake and use are especially encouraged.
- 4) Through their infrastructure programme, the NIHR also provide the support and facilities that that results in high-quality care for patients and the public. Facilities include clinical research networks, research centres, experimental medicine facilities and technology platforms, research design services and so on.
- 5) The NIHR also focuses on streamlining the procedures underpinning research, for example through support for researcher networks, development of information systems to harmonise and simplify ethics approvals and permissions, They are also working towards a unified knowledge management system for the NIHR and its partners.



**Figure 9.1 Coordinated structure of the National Institute for Health Research UK**

The UK Research Innovation Pathway (Figure 9.2) shows the positioning of NIHR-funded programmes that address a broad range of health priorities in prevention, detection, diagnosis, prognosis, treatment and care. All of them focus on demonstrating benefits to patients and to the public, and offer rich learning for the development of health research in Ireland. For example, the Programme Grants for Applied Research are substantial awards (overall budget of up to £75 million per annum with individual grants of up to £2 million over three to five years) for leading applied health-research groups to tackle

high-priority health issues. Each programme funds a series of related projects that form a coherent theme in an area of priority or need for the NHS.



Source: UK National Institute for health Research

Figure 9.2 UK Research Innovation Pathway

The Service Delivery and Organisation Programme (SDO) develops and promotes the uptake and application of evidence on the organisation, management and delivery of health services. The areas of particular concern and relevance to service users and NHS staff are gathered through national Listening Exercises and online surveys. The Research for Patient Benefit (RfPB) programme is a nationally coordinated but regionally commissioned funding stream for quantitative or qualitative research arising from daily practice. In 1999, the existing Health Services Research Programme was supplemented with a further programme, which addresses the main dimensions of quality: patient

safety, patient experience and effectiveness of care. Funding is also provided for a wide variety of NIHR research-capacity development programmes.

The importance placed on translating research evidence into practice was shown by the investment in nine NIHR Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) in October 2008. Working with a budget of up to £10 million each over five years each CLAHRC involves collaboration between one or more universities and the local health service. This brings clinicians, researchers, patients and managers together to focus on improving patient outcomes through the conduct and application of applied health research, each creating and embedding a unique approach to research and its dissemination. The collaborations address a key recommendation of the Chief Medical Officer's High Level Group on Clinical Effectiveness: the need for the NHS to harness better the capacity of higher education to support initiatives to enhance the effectiveness and efficiency of clinical care.<sup>85</sup> The NHS achievements in supporting systematic reviews - the Cochrane Collaboration, the Centre for Reviews and Disseminations, and parts of the Health Technology Assessment Programme - are considered by many to mark the NHS's most important contributions<sup>86</sup>.

Despite these coordinated structures there is as yet no mechanism for ensuring that research is used to inform policy decisions in the UK, although there are a number of examples of good practice in this regard. The work of the National Institute for Health and Clinical Excellence (NICE) on HTA, and the development of the National Service Frameworks which identify evidence-based standards of care in priority areas such as the treatment of cancer, cardio-vascular disease or stroke to inform commissioners and providers of services, provide examples. The UK Department of Health Policy Research Programme (PRP) fund and commission evidence for policy development on public health and social care issues. Between 2011 and 2015 the PRP will provide £40 million to ten policy units to deliver research linked to priorities identified in Health Strategy and Public Service Agreements. In all of these, research teams are asked to provide ministers and policy staff with rapid responses to policy questions based on their ongoing research portfolios, individual expert knowledge of their specialist areas, and research projects or reviews especially devised to provide rapid results. Finally, researchers are often involved in policy-making. For example, UK parliamentary committees, such as the Health Select Committee in England, draw on research and testimony from researchers. Appraisal committees from NICE include researchers, especially health economists. The Department of Health is increasingly recruiting non-civil service professionals, mostly NHS managers but also economists and researchers, and also employs a small number of research liaison staff, whose role it is to coordinate the multiple research needs of policy-makers and to maintain contacts to the research community.

## 9.2.3 Scotland

Scotland shares a common agenda to the rest of the UK but with some important differences and inflections that require a country-specific approach. This is particularly the case since 1999, when responsibility for public health and NHS services within the UK was devolved to the administrations in Scotland, Wales and Northern Ireland.

While many countries are experiencing falling birth rates and an ageing population, the demographic challenges facing Scotland are particularly demanding and improvements in health have been slower than in many other comparable countries<sup>87</sup>. People in Scotland die younger on average than in almost

<sup>85</sup> Eccles MP et al. (2009) *An implementation research agenda*. Implement. Sci. 4:18. doi: 10.1186/1748-5908-4-18.

<sup>86</sup> Horton R (2006) *Health research in the UK: the price of success*. Lancet, 368:93-97.

<sup>87</sup> Scottish Government. (2010a) *The Annual Report of the Chief Medical Officer for Scotland 2009* (Web only publication) <http://www.scotland.gov.uk/Publications/2009/12/16103619/7>

any other Western European nation of similar stature. In particular, Scotland continues to have the highest death rates from heart disease and lung cancer and the second highest death rates for stroke in Western Europe<sup>88</sup>. NHS Scotland has made a series of commitments to address the significant inequalities that exist<sup>89</sup> and improve the health and quality of health care experience of everyone in Scotland<sup>90,91</sup>.

The Chief Scientist Office (CSO) of the Scottish Government Health Directorates is responsible for managing a budget of around £62 million (2007-8) to support and encourage research to improve the health of the people in Scotland and the services provided by the NHS. This money is spent both directly in support of individuals, projects, programmes and research Units, and indirectly by allocating money to support research in the health service through a number of streams including NHS Support for Science, Topic Specific Research Networks, Infrastructure funding, and the Scottish Academic Health Sciences Collaboration which aims to establish a world leading clinical research platform for patient-orientated, translational medicine research linking the four university teaching hospitals to Scottish Health Boards.

### ***Research Strategy***

In 2009 Scotland published its own research strategy, within the context of research priorities, structures and funding mechanisms across the UK and beyond.<sup>92</sup> The four broad aims of the Strategy are; securing benefits to patients and the population at large; improving population health; valuing and investing NHS research to ensure that the NHS provides high quality efficient structures to support clinical research; and building and sustaining skills. This will in part be achieved by a re-prioritisation of funding to look more closely at patient focused research and embed research findings within the NHS. The new Strategy will also help to drive economic development by fostering Scotland's efforts to develop a world leading biomedical R&D cluster comprising the NHS, universities and industry.

Throughout the first half of 2010 the CSO has been working with the research community to develop implementation plans for the strategy. It has refocused its two Research Advisory Committees to form the Experimental and Translational Medicine Research Committee and the Health Services and Population Health Research Committee, where there will be a stronger emphasis on the development of the evidence base for health improvement through population-based programmes as well as through health services. A key feature of the new CSO research strategy is the development of a single point of access to over five million inhabitants registered with NHS Scotland.

The new strategy also affords a timely opportunity for building on existing coordination and collaboration with other OSCHR Partners<sup>93</sup>. Examples include the £3.5m partnership to establish the MRC/CSO Scottish Collaboration for Public Health Research and Policy in 2008<sup>94</sup>. Led by Professor John Frank, recruited from Canada, it is a public health consortium of members drawn from research, policy and practice dedicated to identifying opportunities to develop novel public health interventions that will equitably address major health problems in Scotland. In 2008/09 the MRC invested more than

<sup>88</sup> Bromley, C and Shelton N. (2010) *The Scottish Health Survey: Topics Reports UK Comparisons*. A National Statistics Publication for Scotland. <http://www.scotland.gov.uk/Publications/2010/08/31093025/25>

<sup>89</sup> Scottish Government (2008) *Equally Well. Report of the Ministerial Taskforce on Health Inequalities*. Edinburgh.

<sup>90</sup> Scottish Government. (2010b) *The Health care Quality Strategy for NHS Scotland* (Web only publication) <http://www.scotland.gov.uk/Publications/2010/05/10102307/0>

<sup>91</sup> Scottish Government. (2007) *Better Health, Better Care: An Action Plan*. <http://www.scotland.gov.uk/Publications/2007/12/11103453/0>

<sup>92</sup> Scottish Government. *Investing in Health/ Improving Health. The research strategy for health and health care*. <http://www.cso.scot.nhs.uk/Publications/research.pdf>,

<sup>93</sup> The UK Office for Strategic Co-ordination of Health Research (OSCHR) partners are the NIHR, MRC and the Devolved Administrations of England, Scotland, Wales and Northern Ireland.

<sup>94</sup> Information on MRC/CSO Scottish Collaboration for Public Health Research and Policy is available online at <https://www.scphrp.ac.uk/>.

£65 million to support medical and health research in Scotland, including continued investment in the acclaimed MRC Social and Public Health Sciences Unit, a well-established research Unit addressing the social and environmental health<sup>95</sup>. A further relevant example of research expertise is the Aberdeen-based Institute of Applied Health Sciences, which is particularly strong in methodologies to evaluate health care interventions, delivery and organisation of care and health psychology of behaviour change<sup>96</sup>.

A strong relationship between Ireland and Scotland is underwritten by geographical proximity and a history of migratory movements resulting in social and cultural intimacy. Indeed its similar population size (approximately 5 million), large rural geography and unhealthy lifestyle make it a key comparator and collaborator for PHS and HSR in Ireland.

## 9.2.4 Finland

Since 1987 Finland has had explicit policies aimed at improving population health and reducing health disparities<sup>97,98,99,100</sup>. All departments are now required to report on population health to the Finnish parliament and policy implementation is accompanied by a government-funded health-research programme to monitor trends in health status, the occurrence of illness and socioeconomic disparities in health.

Finland, and its neighbour Sweden, have a world-leading position in supporting research. The Academy of Finland is the prime funding agency for research in Finland. It has an annual budget in excess of €287 million, representing 15 per cent of the government's total R&D spending. The Research Council for Health is one of four research councils within the academy. In 2008 a joint review of university-based clinical medical research by the Academy of Finland and the Swedish Research Council discovered a trend of declining supremacy in research output<sup>101</sup>. Recommended changes include a radical overhaul of the clinical research career lifecycle; an increase in the absolute amount of money dedicated to clinical research with a diversification of funding sources; the establishment of revised governance structures within Research Centres coupled with increased sharing of resource and expertise; and the establishment of a benchmarking system for measuring research productivity.

Other key players in health include the National Institute for Health and Welfare (THL). This is a research and development institute under the Finnish Ministry of Social Affairs and Health, which began operating on 1 January 2009, following the merger of STAKES and the National Public Health Institute (KTL). It is responsible for promoting the well-being and health of the population, developing health and social services, and providing and using statistical knowledge.

## 9.2.5 Sweden

In April 2003, when the Swedish Parliament adopted a national policy on population health, it formalised a 'whole-of-government' approach to addressing the determinants of health<sup>102,103</sup>. The

<sup>95</sup> Information on MRC Social and Public Health Sciences Unit (SPHSU) is available online at <http://www.sphsu.mrc.ac.uk/>

<sup>96</sup> Information on the Institute of Applied Health Sciences (IAHS), is available online at <http://www.abdn.ac.uk/iahs/>

<sup>97</sup> Kokko S (2000) *The Process of Developing Health for all Policy in Finland, 1981–1995*, Exploring Health Policy Development in Europe, World Health Organisation, Edited by Anna Ritsatakis et. al., pp.27–40,

<sup>98</sup> Ministry of Social Affairs and Health (Finland)(2001) *Government Resolution on the Health 2015*. Public Health Programme.

<sup>99</sup> Ministry of Social Affairs and Health (Finland) (2008) *National Action Plan to reduce health inequalities 2008–2011*.

<sup>100</sup> WHO Regional Office for Europe (2002) *Review of National Finnish Health Promotion Policies and Recommendations for the Future*.

<sup>101</sup> Academy of Finland (2009) *Clinical Research in Finland and Sweden*. Evaluation Report. Helsinki.

<sup>102</sup> Swedish National Institute of Public Health (2003) *Sweden's New Public Health Policy - National Public Health Objectives for Sweden*.

Minister for Public Health and Social Services now heads a national inter-sectoral population health executive with policy implementation responsibilities devolved to all levels of government and also to non-governmental organisations, trade unions and universities. The Swedish National Institute of Public Health monitors and reports on progress every four years.

Sweden has a wide variety of research funders, including public sector, non-profit, and industry funders. With an annual budget of over €1.32 billion, the pharmaceutical and biomedical industry is the largest funding body. In 2001, the Swedish Research Council was established to support high-quality national and international research across all academic disciplines, with an annual budget of €62 million for medical research. In addition, the Swedish Council for Social Sciences and Working Life (FAS) (with a budget of around €40 million) funds PHR- and HSR, work-related research and some types of policy-relevant research commissioned by the national government. Universities play a key role in conducting research with virtually no independent research institutes. Over the past decade research capacity, as measured in the number of research positions and the number of doctoral degrees taken, has greatly increased. However, as noted above, Sweden's position as one of the world's top medical research nations has been shown to be declining since the mid-1980s. Nonetheless, Swedish public health research achieved an overall 'very good' rating in a 2004 international evaluation<sup>104</sup>.

## 9.2.6 Australia

The Australian government, led by its Health Protection and Population Health Development Principal Committees, has a long history of seeking a national approach to population health<sup>105</sup>. Its strong knowledge base is evident in the early 1990 publication of its first social health atlas, the work of the national Health Inequalities Research Collaboration (1998-2004), and its equity-focused health impact assessment framework for policy development<sup>106</sup>.

Health research in Australia is coordinated by the National Health and Medical Research Council (NHMRC), established in 1992 within the Department of Health and Ageing. The NHMRC oversees three major programmes (research, ethics and advice) in its remit to increase knowledge, translate research into better health and increase knowledge-based industries in Australia. It has overseen a doubling of funds and a reshaping of its grant system to focus more on people than on institutions, and to enhance the national research capacity. In the May 2006 federal budget, the government allocated an additional €905 million for health and medical research over the following nine-year period. Other health-research funding agencies include the Australian Research Council and not-for-profit organisations such as the Heart Foundation and Cancer Council Australia. The NHMRC Performance Measurement Framework, which was established in 2003, shows that Australia has made an impressive impact in health and medical research across many performance aspects, such as the dissemination of scientific results, national and international collaborations, research breakthroughs, commercialisation, and developing research capacity<sup>107</sup>.

<sup>103</sup> Östlin P and Diderichsen F (2001) *Equity-Oriented National Strategy for Public Health in Sweden*, European Centre for Health Policy, World Health Organisation.

<sup>104</sup> Kamper-Jørgensen F et al. (2004) *International Evaluation of Swedish Public Health Research*, Swedish Council for Working Life and Social Research.

<sup>105</sup> National Public Health Partnership, <http://www.nphp.gov.au>

<sup>106</sup> Baum F and Simpson S (2006) *Building Healthy and Equitable Societies: What Australia Can Contribute to and Learn from the Commission on Social Determinants of Health*, Health Promotion Journal of Australia, 17, 3.

<sup>107</sup> NHMRC (2006b) *Summary Analysis End of Grants Reports*, Canberra: Australian Government, National Health and Medical Research Council.



An interesting example is the Sax Institute in New South Wales. Founded in 2002 as a bridge between researchers and policy-makers, the institute's aim is to increase the consideration of evidence from research as an integral part of the formulation and evaluation of health policy in Australia<sup>108</sup>. This independent, not-for-profit organisation helps health decision-makers to analyse how research can aid their decisions, access the best available research findings and answer critical questions with new research. Examples of mechanisms used include the development of *Evidence Check* reviews for government bodies, the development of networks such as The Hospital Alliance for Research Collaboration, which includes over 7000 clinicians, managers, researchers and policy-makers, and the hosting of an annual Health Policy and Research Exchange event involving policy-makers and researchers.

## 9.3 Europe-wide policy approach

Under the EU Territorial Principle, health policy remains a national responsibility. However, the EU's Health Strategy for 2008-13 firmly establishes public health policy within the Commission<sup>109</sup>, building on the 1993 EU Maastricht Treaty which first recognised the need for EU level action in specific areas such as 'prevention, major health scourges and drug dependence'<sup>110</sup>. Health research is now supported through the Commission's Directorate for Research<sup>111</sup>, the Directorate for Health<sup>112</sup> and other directorates for fields such as telecommunications, food safety and environment. A succession of European Commission (EC) Framework Programmes in public health has attempted to relate policy to the analysis of Europe's public health needs<sup>113,114</sup>.

The Sixth Framework Programme (FP6, 2002-2006) has been criticised for championing 'the traditional mix of basic science and biomedicine' with public health research separated organisationally from medical research, with a constrained budget and limited research tasks<sup>115,116</sup>. However, the Seventh Framework Programme (FP7, 2007-2013) has been deemed to have 'resuscitated' EU-funded population health research with its public health section, *Optimising the Delivery of Health Care to European Citizens*, funding HSR, health promotion and the transfer of research into practice studies. There have also been important public health studies undertaken at EU level in the past such as the FP6 Strengthening Public Health Research in Europe (SPHERE) study. This three-year study (2005-2007) stressed the importance of prioritising funding in the interests of populations, stepping beyond descriptive studies of ill-health to examine policy impacts, developing varied research methodologies, and sustainable population datasets for comparisons and longitudinal monitoring<sup>117</sup>.

The Health Service Research into European Policy and Practice (EU-FP7 HSREPP) project aims to identify, evaluate and improve the contribution of health services research to health policy-making in countries in Europe<sup>118</sup>. Led by a consortium of five major HSR institutes in Europe, this project will provide state-of-the-art reports for five overarching areas within HSR: (i) health (care delivery)

<sup>108</sup> See <http://www.saxinstitute.org.au>.

<sup>109</sup> Commission of the European Communities (2007) White Paper. In: *Together for health: a strategic approach for the EU 2008-2013*. Brussels, COM (2007) 630 final.

<sup>110</sup> Commission of the European Communities (1991) The Treaty of Rome, as amended at Maastricht (the Treaty on European Union), Article 129. Brussels.

<sup>111</sup> Directorate for Research: Seventh Framework Research Programme. [http://cordis.europa.eu/fp7/home\\_en.html](http://cordis.europa.eu/fp7/home_en.html)

<sup>112</sup> Executive Agency for Health and Consumers. <http://ec.europa.eu/eahc/about/about.html>

<sup>113</sup> Commission of the European Communities (1993) *Commission communication on the framework for action in the field of public health*. Brussels, COM (1993) 559 final.

<sup>114</sup> Directorate for Research: Seventh Framework Research Programme. [http://cordis.europa.eu/fp7/home\\_en.html](http://cordis.europa.eu/fp7/home_en.html)

<sup>115</sup> McCarthy M (2002) *Public-health research in Europe*. Lancet, 36:1439.

<sup>116</sup> Saracci R et al. (2005) *Health research policy in the European Union*. Br Med J, 330:1459-60.

<sup>117</sup> Strengthening Public Health Research in Europe (SPHERE) <http://www.ucl.ac.uk/public-health/sphere/spherehome.htm>

<sup>118</sup> The Health Service Research into European Policy and Practice (EU-FP7 HSREPP) project (<http://www.healthservicesresearch.eu/>)



systems; (ii) healthcare organisations and professional practices; (iii) HTA; (iv) benchmarking and performance indicators; and (v) relationships between research and policy. In April 2010 250 experts gathered in The Hague to inform this work, which is due to be completed in November 2010.

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# Abbreviations and Acronyms

ACSTI	Advisory Council for Science, Technology and Innovation
BMJ	British Medical Journal
CIHR	Canadian Institutes of Health Research
CRF	Clinical Research Facility
CWTS	Centre for Science and Technology Studies, Leiden
DAFF	Department of Agriculture, Food and Fisheries
DALY	Disability Adjusted Life Years
DCU	Dublin City University
DCYA	Department of Children and Youth Affairs
DES	Department of Education and Science
DETE	Department of Enterprise, Trade and Employment
DoHC	Department of Health and Children
DoH	Department of Health
EC	European Commission
EI	Enterprise Ireland
EU	European Union
EPA	Environmental Protection Agency
ESRI	Economic and Social Research Institute
ETR	Education, Training and Research
FÁS	Foras Áiseanna Saothair (Training and Employment Authority)
FP7	7 <sup>th</sup> Framework Programme of EU
FTE	Full Time Equivalent
HBSC	Health Behaviours in School-aged Children
HDA	Health Development Authority UK
HEA	Higher Education Authority
HE(I)	Higher Education (Institution)
HIPE	Hospital Enquiry System
HIQA	Health Information and Quality Authority
HRB	Health Research Board
HRG	Health Research Group
HSE	Health Services Executive
HSR	Health Services Research
ICRIN	Irish Clinical Research Infrastructure Network
ICSTI	Irish Council for Science, Technology and Innovation
IDA	Industrial Development Authority
INIsPHO	Ireland and Northern Ireland Population Health Observatory
IPH	Institute of Public Health in Ireland
IRCSET	Irish Research Council for Science, Engineering and Technology
IRCHSS	Irish Research Council for Humanities and Social Sciences
IUA	Irish Universities Association
JAMA	Journal of the American Medical Society
MET	Medical Education and Training
MRCG	Medical Research Charities Group
NCRI	National Cancer Registry of Ireland
NDP	National Development Plan
NEJM	New England Journal of Medicine
NGO	Non-Governmental Organisation



NHMRC	National Health and Medical Research Council (Australia)
NHS	National Health Services (UK)
NI	Northern Ireland
NIH	National Institutes for Health
NIHR	National Institute for Health Research (UK)
NPIRS	National Psychiatric Inpatient Reporting System
NUI Galway	National University of Ireland Galway
NUI Maynooth	National University of Ireland Maynooth
OECD	Organisation for Economic Cooperation and Development
OMC	Office of the Minister for Children
OSCHR	Office for the Strategic Coordination of Health Research
PHIS	Public Health Information System
PHL/SNOMED	Public Health Language/ Systematised Nomenclature of Medicine Clinical Terms
PHR	Population health research
PPS	Personal Public Service Number
PRTL	Programme for Research in Third Level Institutions
QUB	Queens University Belfast
RCSI	Royal College of Surgeons in Ireland
ROI	Republic of Ireland
RCT	Randomised Control Trial
SFI	Science Foundation Ireland
SLÁN	Survey of Lifestyle, Attitudes and Nutrition
SPHERE	Strengthening Public Health Research in Europe
SSTI	Strategy for Science, Technology and Innovation
SWOT	Strengths, Weaknesses, Opportunities and Threats
TCD	Trinity College Dublin
UCC	University College Cork
UCD	University College Dublin
UL	University of Limerick
UPI	Unique Personal Identifier
UU	University of Ulster
WHO	World Health Organisation



# APPENDICES

# Appendix 1 Profile of major funding agencies

Table A summaries, for the major Irish funding agencies, the nature, statutory remit, scope of research funding activities and expenditure on health-related research projects in 2009.

**Table A** Profile of major funding agencies contributing to national health research landscape

Organisation name	Associated Department	Nature	Statutory remit	Funding Scope	Total health-related research expenditure <sup>1,2,3</sup>
<b>Health Research Board (HRB)</b>	<b>Department of Health and Children</b>	Research Funding Agency	Statutory agency with responsibility for funding health research to support policy formulation and improvement in health service delivery	Funds research across a broad range of basic and applied health-focused topics, including health services/systems and population health research.	Expenditure of €40.1M <sup>4</sup> in 2009 allocated under NDP and SSTI for health-related research, of which €10.3M was PHR and HSR focused
<b>Health Services Executive (HSE)</b>	<b>Department of Health and Children</b>	Health Services Provider	Established under the Health Act 2004 to provide health care to the population. Reports to DoH but receives its funding from Dept Finance	Primarily health care provision but proposed development of R&D functions to underpin primary objectives of the health services and contribute to other government policies.	Total budget of €9B (intended budget for education and training of 3% but research budget undetermined)
<b>Science Foundation Ireland (SFI)</b>	<b>Department of Enterprise, Trade and Employment</b>	Research Funding agency	Statutory agency with responsibility for enhancing economic development through new knowledge, leading edge technologies and competitive enterprises in the fields of science and engineering	Funds investigator-led and programmatic research in the fields of science and engineering underpinning biotechnology, ICT and sustainable energy and energy-efficient technologies	€171.3M in 2009 (Including Charles Parsons Awards of €5.6M) allocated under NDP & SSTI of which €73.6M <sup>5</sup> is targeted at health-related research
<b>Enterprise Ireland (EI)</b>	<b>Department of Enterprise, Trade and Employment</b>	Business Development and Promotion Agency	Statutory body set up under Industrial Development Act to accelerate the development of world-class Irish companies to achieve strong positions in global markets	No specific research areas but anything that companies need such as investment in R&D, building capacity of universities and ITs to establish start-up companies and commercialise ideas	Total R&D expenditure of €93.5M in 2009 of which €14.6M <sup>6</sup> was approved for health-related projects

Organisation name	Associated Department	Nature	Statutory remit	Funding Scope	Total health-related research expenditure <sup>1,2,3</sup>
<b>Industrial Development Authority (IDA)</b>	<b>Department of Enterprise, Trade and Employment</b>	Business Development and Promotion Agency	Statutory body set up under Industrial Development Act to encourage investment from multi nationals & to encourage Irish companies invest in R&D	Product development and platform technologies (Pharmaceuticals and Bio-pharmaceuticals, Medical technologies)	€56.7M expenditure on R&D in 2009, of which €23M <sup>7</sup> is targeted at health-related research
<b>Higher Education Authority (HEA)</b>	<b>Department of Education and Science</b>	Research Funding agency	Statutory agency with responsibility for planning and policy development for higher education and HE research in Ireland	Core recurrent and capital support across all HE institutions in Ireland. Research programmes (PRTL and other capacity building programmes) span all disciplines and HE institutions	€111.3M research expenditure in 2009 primarily funded through PRTL cycles of which approx. €36.9M <sup>8</sup> was on health-related projects. Of this an estimated €1.5M <sup>9</sup> was focused on PHR and HSR projects
<b>Irish Research Council for Science, Engineering and Technology</b>	<b>Department of Education and Science</b>	Research Funding Council	Statutory Council funded through NDP, to promote excellence in research across the sciences, engineering and technology in Ireland	Emphasis on early career researchers in: Computer Science, Mathematics, Chemistry, Physics, Engineering, Macro/Microbiology, Molecular Biology, Earth Sciences	Expenditure of €25.6M in 2009 of which approx. €3.5M <sup>10</sup> was on health-related research
<b>Irish Research Council for Humanities and Social Science</b>	<b>Department of Education and Science</b>	Research Funding Council	Statutory Council funded through NDP to promote excellence in research across the humanities, social sciences, business and law	Project grants and fellowships across the career path of scholars in the humanities, social sciences, business, law, theology and religious studies	Expenditure of €14.4M in 2009 of which approx. €1.1M was on health-related research
<b>Environmental Protection Agency</b>	<b>Department of the Environment</b>	Statutory Enforcement Agency, Research Funding Agency	Statutory agency with statutory role to coordinate environmental research (Section 71 of EPA Act) and responsibilities for a wide range of environmental licensing, enforcement, monitoring and assessment activities	Strategically driven research projects, fellowships/scholarships targeted at protecting and improving the environment through: sustainable development, cleaner production and environmental technologies and a health environment	Total budget of €100M (NDP, IDC-SSTI & co-funding) (2007-2013). €113.6M in 2009 on STRIVE & Climate Research of which €0.69M <sup>11</sup> on health-related research.

Organisation name	Associated Department	Nature	Statutory remit	Funding Scope	Total health-related research expenditure <sup>1,2,3</sup>
<b>Marine Institute</b>	<b>Department of Agriculture, Fisheries and Food</b>	Statutory Enforcement Agency, Research Funding Agency	Established under 1991 Marine Institute Act to undertake, coordinate, promote and assist in marine R&D and to provide R&D-related services to the marine community	Responsible for marine RTDI through strategic funding programmes and scientific services. Targets sub-sectors that can increase competitiveness through research, integrating new technology and developing innovative production systems	R&D expenditure of €9.7M in 2009, of which €1.5M <sup>12</sup> was spent on health-related projects. Of this €37K was on PHR and HSR focused projects

- Figures describe expenditure on research projects in the 2009 calendar year. For each funding provider, project/programme funding from all sources is included, while the operational costs associated with each funding provider are excluded.
- 'Health-related' research expenditure is defined broadly as research which benefits the health of an individual, group or population through the prevention, treatment and management of illness. Such direct interventions include the development of diagnostics, pharmaceuticals, vaccines and devices and the preservation of mental and physical well-being through the services offered by the medical, nursing, and allied health professions. Health related research may also benefit health through improvement in understanding of the mechanisms underlying ill-health (either physical or mental) or the influences and impact of environment (physical, social, cultural or occupational) and behaviour on health status and outcomes.
- Scope and focus of research on 'health-related' projects differs by funding provider and reflects their statutory remit.
- This excludes funding for national health information systems managed by the HRB
- Health related primarily medical biotechnology, pharma, medical engineering and health-relevant ICT. No clinical research funded. For larger investments, figures estimate relative split between health-related and non-health related activities..
- Industrial/commercial R&D including drug development, diagnostics and medical devices, innovation partnerships, SME R&D fund and academic commercialisation fund.
- Industrial/commercial bio-science projects and TRIL technology programme.
- Large proportion of expenditure is capital/infrastructure development. PRTL Cycle 3 amount estimated based on the percentage of health-related projects in original approval. Bioscience and Biomedical projects under PRTL Cycle 4 constituted 32 per cent of the overall Cycle 4 total.
- Estimate based on relative level of population health/HSR-related activities reported by University Research Offices for PRTL Centres and Institutes on their campus
- Describes projects in the following health-related themes: Therapeutic/pharmaceutical/diagnostic development; Health care applications of mathematical/information sciences; Research on pathogens/pathologies; Diet and lifestyle. Does not include fundamental (non-applied) research.
- Expenditure on health-related research on environmental impacts of health.
- Expenditure on health-related research, marine food safety and pharma products

## Appendix 2 Sample taught courses

Table B provides examples of taught courses offered by Irish universities at postgraduate or professional training level, in subjects relevant to PHR and/or HSR

**Table B Sample taught courses with specific relevant to PHR and HSR**

HEI	Course title	Course objectives/scope	Course type	Target students
NUI Galway	Postgraduate Diploma/MA in Arts (Health Promotion)	Provide students with a professional education and training in the principles and practice of health promotion	Full-time (1 yr) or Part-time (2 yr) with minor dissertation for MA students	Anyone with an interest in health promotion or health services
	Diploma Health Services Research /Master of Health Sciences (Health Services Research)	Improve the quality and organisation of health services.	Full-time (1 yr) or Part-time (2 yr) with minor dissertation for MA students	People working in the health service or wishing to develop evaluation function
	Postgraduate Diploma/MSc in Health Sciences (Primary Care)	Greater insight into the behaviour and needs of patients and other health care professionals, develop management skills in a healthcare environment	Face-to-face teaching (2-5d/month) and distance learning over 1 yr (Dip) with additional modules in Yr 2 (MSc)	Doctors and health professionals who provide primary care
	Diploma in Social Gerontology	Covers a broad range of economic, social and political theories relating to ageing and examines public policy for older people across a number of fields	2yr part-time	Mature students from all disciplines with an interest in issues relating to older people
	MSc in Health Psychology	Covers bio-psychosocial foundations of health and illness, health psychology in applied settings and research methods in health psychology	1 yr full-time	Psychology graduates who wish to pursue a career in a healthcare setting
	Graduate Diploma in Public Health Nursing	Develop the specific knowledge required to operate as a community practitioner in the provision of primary health care and targeting public health	1 yr full-time	Registered nurse midwives who wish to work in the community setting as a public health nurse
TCD	Essential Statistics for Medical and Health Professionals	To provide a clear, practical, focused and 'hands-on' introduction to basic biostatistics	Distance learning course	People presently engaged in, or planning to undertake research in health sciences



HEI	Course title	Course objectives/scope	Course type	Target students
	MSc in Health Services Management	Prepares students for middle and senior management positions in the health services through coverage of subjects relevant to health services management	2 yr part-time	Health service professionals and managers
	MSc in Global Health	Aims to prepare graduates to contribute on a broader scale to the design, implementation, and management of health programmes, health systems development and health policy	1yr full-time or 2yr part-time	People engaged in managerial and planning positions in public health systems, NGOs, governments, donor and international health agencies
	Drug and Alcohol Policy (M.Sc.)	Understanding of how society attempts to prevent or respond to problems associated with illicit drug use, as well as specific opportunities to develop research, management and policy-making skills	2 yr part-time	People in management or policy-making positions in any organisation that deals with drug and alcohol problems
	Clinical Health Sciences Education (P. Grad. Dip)	Joint venture between School of Nursing and Midwifery and School of Education to give health service professionals skills in teaching, assessment, curriculum design, development and evaluation	1 yr part-time	Currently registered health sciences professional working in a relevant area and with two year's clinical experience
UCD	Master of Public Health	Broad-based education and training in the basic disciplines which underlie the practice of Public Health	1 yr full-time or 2 yr part-time	Registered medical & dental practitioners or with professional background in health care or provision
	Master of Public Health (Nutrition)	Provide skills to work in nutrition-related health promotion, in the health service, industry, government, education & research in public health nutrition	1 yr full-time or 2 yr part-time including minor dissertation	Anyone with a primary degree in a nutrition related subject
	MSc in Child Health	Research methods, child development, child health & mental health, international child health and the organisation and provision of child health services	1 yr full-time or 2 yr part-time	Persons with primary degree or its equivalent, ideally with a background in child health.
	Diploma/MSc in Occupational Health	Theoretical knowledge and understanding in the core areas of occupational medicine	1 yr part-time (Dip) and 2 yr part-time (MSc) with thesis	Registered Medical Practitioners only
	Graduate Diploma in Public	Prepare registered nurse midwives to function as	1 yr full-time	Registered nurse midwives

HEI	Course title	Course objectives/scope	Course type	Target students
	Health Nursing	effective public health/ community health nurses, by facilitating primary, secondary and tertiary health care		wishing to move into public health nursing
	Graduate Diploma in Medicine (Health care Informatics)	Training in information management and the utilization of associated technology in health care professions.	1 yr full-time	Health professionals and those working in ICT areas in the Health Sector
UCC	BSc in Public Health and Health Promotion	Broadly based training, reflecting the range of skills that are involved in keeping people healthy and preventing disease	4 yr full time	Minimum Grade HC3 in two subjects and passes in four subjects in Leaving Certificate
	Master's in Public Health	Broad-based education and training in the basic disciplines underpinning Public Health including Epidemiology, Health Promotion and Health Protection	1 Year Full Time / up to 5 Years Part-Time with dissertation	Primary degree in relevant subject or any primary degree and relevant health care experience
	Master's in Occupational Health	Covers both conventional health and safety issues and modern psychosocial factors at work. Taught from a population health perspective and based on a bio-psychosocial model of health	2 yr part-time	People working in occupational safety and health
	Graduate Diploma in Public Health Nursing	Develop the specific knowledge required to operate as a community practitioner in the provision of primary health care and targeting public health	1 yr full-time	Registered nurse midwives who wish to work in the community setting as a public health nurse
RCSI	Masters in Ethics, Health Care, and Law	Gain a deeper and more systematic understanding of ethical and legal issues relevant to health care	2 yr part-time	Health care professionals and those working in fields related to health care
	Diploma/MSc in Health Care Management	Gain knowledge and understanding of the complexity of health care, business processes, finance, economics and information technology	1 yr part-time (Dip) and 2 yr part-time (MSc)	Health care professionals, managers, administrators and people in allied health businesses
	Diploma/MSc in Health Care Management (Community Pharmacy)	Develop leadership and management skills to improve patient care, embrace innovation and deliver new services as envisaged in the new contract with the Health Services Executive	1 yr part-time (Dip) and 2 yr part-time (MSc)	Community pharmacists
QUB	MSc in Public Health	Develop a systematic evidence-based approach to understanding population health issues and	1 yr full-time with minor dissertation	Primary degree in relevant subject or any primary

HEI	Course title	Course objectives/scope	Course type	Target students
		problems, and how to support implementation of policy, programmes or interventions		degree and relevant health care experience
UU	Diploma/MSc Applied Psychology (Mental Health)	Enhance skills and knowledge in areas of applied psychology related to mental health. Aims to provide a foundation for further professional training in Health Psychology	1 yr full-time or 2 yr part-time (Dip and MSc) + major dissertation for MSc	Primary degree in psychology
	Diploma/MSc in Health Promotion and Population Health	Public health promotion, planning for population health, advanced methods in health and social care research, epidemiology, evidence informed health care, policy, leadership and management	2 semesters full-time (Dip) or 3 semesters full-time (Msc) 18 month part-time (Dip) or 30 month part-time (MSc)	Primary degree or equivalent in a relevant subject and at least two years' full-time equivalent experience as a health promotion or public health specialist
	Dip/MSc in Health and Social Care (Primary Care & General Practice & Medical Revalidation Framework - Primary and Secondary Care) Pathways	Equip members of the primary care professions with the skills, knowledge and attitudes necessary for provision of high quality-based care to patients/clients in primary care and community settings	Distance learning. 2 yr part-time (Dip) or 3 yr part-time (MSc)	Primary degree in relevant area and normally have a minimum of one year's post-registration experience

# Appendix 3 OECD Categorisation System (Frascati)

The OECD Frascati Categorisation System describes 6 Broad Areas of activity, which are in turn broken into more specific research activities. The 5 most relevant are as described below (humanities excluded):

## 1. Natural sciences

### 1.1 *Mathematics*

Pure mathematics, Applied mathematics; Statistics and probability (. This includes research on statistical methodologies, but excludes research on applied statistics which is classified under the relevant field of application (*e.g.* Economics, Sociology, etc.))

### 1.2 *Computer and information sciences*

Computer sciences, information science and bioinformatics (*hardware development is 2.2, social aspect is 5.8*);

### 1.3 *Physical sciences*

Atomic, molecular and chemical physics (physics of atoms and molecules including collision, interaction with radiation; magnetic resonances; Moessbauer effect); Condensed matter physics (including formerly solid state physics, superconductivity); Particles and fields physics; Nuclear physics; Fluids and plasma physics (including surface physics); Optics (including laser optics and quantum optics), Acoustics; Astronomy (including astrophysics, space science);

### 1.4 *Chemical sciences*

Organic chemistry; Inorganic and nuclear chemistry; Physical chemistry, Polymer science, Electrochemistry (dry cells, batteries, fuel cells, corrosion metals, electrolysis); Colloid chemistry; Analytical chemistry;

### 1.5 *Earth and related Environmental sciences*

- Geosciences, multidisciplinary; Mineralogy; Palaeontology; Geochemistry and geophysics;
- Physical geography; Geology; Volcanology; Environmental sciences (*social aspects in 5.7*);
- Meteorology and atmospheric sciences; climatic research;
- Oceanography, Hydrology, Water resources;

### 1.6 *Biological sciences*

- Cell biology, Microbiology; Virology; Biochemistry and molecular biology; Biochemical research methods; Mycology; Biophysics;
- Genetics and heredity (*medical genetics to be 3*); reproductive biology (*medical aspects in 3*); Developmental biology;
- Plant sciences, botany;
- Zoology, Ornithology, Entomology, Behavioural sciences biology;
- Marine biology, freshwater biology, limnology; Ecology; Biodiversity conservation;
- Biology (theoretical, mathematical, thermal, cryobiology, biological rhythm), Evolutionary biology; other biological topics;

### 1.7 *Other natural sciences*

## 2. Engineering and technology

### 2.1 *Civil engineering*

Civil engineering; Architecture engineering; Construction engineering, Municipal and structural engineering; Transport engineering;

### 2.2 *Electrical engineering, Electronic engineering, Information engineering*

Electrical and electronic engineering; Robotics and automatic control; Automation and control systems; Communication engineering and systems; telecommunications; Computer hardware and architecture;

### 2.3 *Mechanical engineering*

- Mechanical engineering; Applied mechanics; Thermodynamics;
- Aerospace engineering;
- Nuclear related engineering; (*nuclear physics in 1.3*);
- Audio engineering, reliability analysis;

### 2.4 *Chemical engineering*

Chemical engineering (plants, products); Chemical process engineering;

### 2.5 *Materials engineering*

Materials engineering; Ceramics; Coating and films; Composites (including laminates, reinforced plastics, cermets, combined natural and synthetic fibre fabrics; filled composites); Paper and wood; textiles; including synthetic dyes, colours, fibres; (*nanoscale materials in 2.10; biomaterials in 2.9*);

### 2.6 *Medical engineering*

Medical engineering; Medical laboratory technology (including laboratory samples analysis; diagnostic technologies); (*Biomaterials in 2.9 [physical characteristics of living material as related to medical implants, devices, sensors]*);

### 2.7 *Environmental engineering*

Environmental and geological engineering, geotechnics; Petroleum engineering, (fuel, oils), Energy and fuels; Remote sensing; Mining and mineral processing; Marine engineering, sea vessels; Ocean engineering;

### 2.8 *Environmental biotechnology*

Environmental biotechnology; Bioremediation, diagnostic biotechnologies (DNA chips and biosensing devices) in environmental management; environmental biotechnology related ethics;

### 2.9 *Industrial biotechnology*

Industrial biotechnology; Bioprocessing technologies (industrial processes relying on biological agents to drive the process) biocatalysis, fermentation; bioproducts (products that are manufactured using biological material as feedstock) biomaterials, bioplastics, biofuels, bioderived bulk and fine chemicals, bio-derived novel materials;

### 2.10 *Nano-technology*

- Nano-materials [production and properties];
- Nano-processes [applications on nano-scale]; (*biomaterials in 2.9*);

### 2.11 *Other engineering and technologies*

- Food and beverages;
- Other engineering and technologies;

### 3. Medical and Health sciences

#### 3.1 *Basic medicine*

Anatomy and morphology (*plant science in 1.6*); Human genetics; Immunology; Neurosciences (including psychophysiology); Pharmacology and pharmacy; Medicinal chemistry; Toxicology; Physiology (including cytology); Pathology;

#### 3.2 *Clinical medicine*

Andrology; Obstetrics and gynaecology; Paediatrics; Cardiac and Cardiovascular systems; Peripheral vascular disease; Hematology; Respiratory systems; Critical care medicine and Emergency medicine; Anaesthesiology; Orthopaedics; Surgery; Radiology, nuclear medicine and medical imaging; Transplantation; Dentistry, oral surgery and medicine; Dermatology and venereal diseases; Allergy; Rheumatology; Endocrinology and metabolism (including diabetes, hormones); Gastroenterology and hepatology; Urology and nephrology; Oncology; Ophthalmology; Otorhinolaryngology; Psychiatry; Clinical neurology; Geriatrics and gerontology; General and internal medicine; other clinical medicine subjects; Integrative and complementary medicine (alternative practice systems);

#### 3.3 *Health sciences*

- Health care sciences and services (including hospital administration, health care financing);
- Health policy and services;
- Nursing; Nutrition, Dietetics;
- Public and environmental health; Tropical medicine; Parasitology; Infectious diseases; epidemiology;
- Occupational health; Sport and fitness sciences;
- Social biomedical sciences (includes family planning, sexual health, psycho-oncology, political and social effects of biomedical research); Medical ethics; Substance abuse;

#### 3.4 *Medical biotechnology*

Health-related biotechnology; Technologies involving the manipulation of cells, tissues, organs or the whole organism (assisted reproduction); Technologies involving identifying the functioning of DNA, proteins and enzymes and how they influence the onset of disease and maintenance of well-being (gene-based diagnostics and therapeutic interventions (pharmacogenomics, gene-based therapeutics); Biomaterials (as related to medical implants, devices, sensors); Medical biotechnology related ethics;

#### 3.5 *Other medical sciences*

- Forensic science
- Other medical sciences

### 4. Agricultural sciences

#### 4.1 *Agriculture, Forestry, and Fisheries*

Agriculture; Forestry; Fishery; Soil science; Horticulture, viticulture; Agronomy, plant breeding and plant protection; (*Agricultural biotechnology in 4.4*)

#### 4.2 *Animal and Dairy science*

- Animal and dairy science; (*Animal biotechnology to be 4.4*)
- Husbandry; Pets;

#### 4.3 *Veterinary science*

#### 4.4 *Agricultural biotechnology*

Agricultural biotechnology and food biotechnology; GM technology (crops and livestock), livestock cloning, marker assisted selection, diagnostics (DNA chips and biosensing devices for the early/accurate detection of diseases) biomass feedstock production technologies, biopharma; agricultural biotechnology related ethics;

#### **4.5 Other agricultural sciences**

## **5. Social sciences**

### **5.1 Psychology**

- Psychology (including human - machine relations);
- Psychology, special (including therapy for learning, speech, hearing, visual and other physical and mental disabilities);

### **5.2 Economics and Business**

- Economics, Econometrics; Industrial relations;
- Business and Management;

### **5.3 Educational sciences**

- Education, general; including training, pedagogy, didactics;
- Education, special (to gifted persons, those with learning disabilities);

### **5.4 Sociology**

- Sociology; Demography; Anthropology, ethnology,
- Social topics (Women.s and gender studies; Social issues; Family studies, Social work);

### **5.5 Law**

Law, criminology, penology;

### **5.6 Political science**

Political science; public administration; organisation theory;

### **5.7 Social and economic geography**

Environmental sciences (social aspects); Cultural and economic geography; Urban studies (Planning and development); Transport planning and social aspects of transport (*transport engineering in 2.1*);

### **5.8 Media and communications**

Journalism; Information science (social aspects); Library science; Media and socio-cultural communication;

### **5.9 Other social sciences**

- Social sciences, interdisciplinary;
- Other social sciences;



# Appendix 4 Survey methods, recipients and instruments

## Appendix 4.1 Survey of health research funding providers

### Objectives of survey

The objective of the survey was to identify:

- What agencies and organisations are funding health research
- The types of research activity that their funding supports
- Who they are supporting in terms of research performer organisations
- The modes of funding with which they are supporting research (project-based, career development etc.)
- The level of funding that they contribute to research in the areas they fund (either as a per cent of total, or as actual figures, if these are available)
- Specific funding in the area of PHR and HSR (activity funded, total funding) if any (either as a per cent of total, or as actual figures, if these are available)

### Recipients

Research funding providers were identified through website searches, via lists of statutory agencies published by relevant government departments (Department of Health and Children, Department of Agriculture, Department of the Environment) and through voluntary organisations such as the Medical Research Charities Group and the Citizens Information Bureau. From these searches an Excel database of potential agencies/organisation was created and a total of 49 organisations were surveyed (see Table A5.1). Responses were received from all of the major funding agencies and statutory bodies and from all member organisations of the Health Research Group. The response rate from the Voluntary sector was lower (12/23). However, in this case, their umbrella body, the Medical Research Charities Group, had conducted a comprehensive survey of its members in 2009, which included expenditure on research, and this data was made available to the review.

### Survey distribution

The survey instrument was initially piloted with 10 funding agency personnel in March 2008 and distributed to the full recipient list on 15<sup>th</sup> April 2008, with a reminder after 10 and 20 days. Where no response was obtained, information on funding agencies was obtained from their websites and annual reports, and subsequently verified with agency personnel. Expenditure figures on total and health-related research funding for the major funding providers were update in July 2009.

For the purposes of the survey, research funding activity was categorised according to the OECD Frascati Categorisation System as described in Appendix 3, and in particular: natural sciences, engineering and technology, medical and health sciences, agricultural sciences, social sciences and

humanities. Medical and health sciences and social sciences and humanities were further broken down into sub-areas, as defined by the Frascati model.

**Table C Organisations in receipt of a survey of potential research funding providers and commissioners**

Organisation Type	Organisation Name	Response
Research Funding Agency	Environmental Protection Agency	Yes
	Enterprise Ireland	Yes
	Higher Education Authority	Yes
	Health Research Board	Yes
	Industrial Development Agency	Yes
	Irish Research Council for Science, Engineering and Technology	Yes
	Irish Research Council for Humanities and Social Science	Yes
	Marine Institute	Yes
	Science Foundation Ireland	Yes
Statutory Body	Combat Poverty Agency	Yes
	Crisis Pregnancy Agency	Yes
	Children's Act Advisory Board	Yes
	Health Services Executive	Yes
	Health Information Quality Assurance	Yes
	Health and Safety Authority	Yes
	National Disability Authority	Yes
	Teagasc	Yes
Professional Association	Irish Council for General Practice	Yes
	Royal Irish Academy	Yes
Health Research Group Member	Department of Agriculture, Food and Fisheries	Yes
	Department of Education & Science	Yes
	Department of the Environment	Yes
	Department of Enterprise, Trade & Employment	Yes
	Department of Health and Children	Yes
	Forfás	Yes
Voluntary Sector Organisation	Medical Research Charities Group	Yes
	Alpha One	
	Alzheimer Society of Ireland	Yes
	Arthritis Ireland	Yes
	ASH Ireland	
	Asthma Society of Ireland	
	Brainwave: Irish epilepsy Association	Yes
	Children's Leukaemia Research Project - Carmichael Centre	Yes
	Cork Cancer Research Centre	
	Cystic Fibrosis Ireland	
	DEBRA Ireland	Yes
	Diabetes Federation of Ireland	Yes
	Fighting Blindness	
	Heart Children	
	Irish Cancer Society research division (Cancer Research Ireland)	Yes
	Irish Chronic Pain Association	Yes
	Irish Hospice Foundation	Yes
	Meningitis Research Foundation	
	Muscular Dystrophy Ireland	
	Parkinson's Association of Ireland	
	Research and Education Foundation, Sligo General	Yes
	Research Institute for a Tobacco Free Society	Yes
	The Mater Foundation	
Other	Atlantic Philanthropies	Yes

The survey was distributed via email as a Microsoft Word Form attachment. The Frascati Categorisation System Guidelines were also attached. Recipients included Irish funding agencies, statutory bodies, global health/aid agencies, professional associations, individual voluntary sector organisations, and the Medical Research Charities Group (MRCG), the umbrella body for medical charities in Ireland.

## Survey instrument

### Survey of Research Funding Providers

#### **Health Research Board Review of Population health research (including Public Health and Health Promotion) and Health Services Research**

Please find in the following pages a request for information on funding of research by your organisation. This information is being collected by us as part of a Review of Population health research (including Public Health and Health Promotion) and Health Services Research.

#### **Objectives of the review**

- a. Establish a baseline of research capacity in PHR and HSR in Ireland
- b. Map the state of the art in terms of strengths and weaknesses of PHR & HSR
- c. Assess the outputs and impacts of PHR & HSR
- d. Provide recommendations for infrastructure and research investment, for both the HRB and other national agencies, in the areas of PHR and HSR

The HRB Review is being overseen by an International Steering Group and the Review will be published by the HRB in 2009.

#### **Where this survey fits in**

The aim of this survey is to build up a picture of the research landscape in Ireland with particular reference to funding of research in population health research and health services research.

The objective of the survey is to gain a better understanding of:

- what agencies and organisations are funding research in these areas
- who they are supporting in terms of research performers
- with what modes of funding are they supporting research
- the types of research activity that their funding supports
- the level of research funding that they contribute to research in these areas (either as a per cent of total, or as actual figures, if these are available)

The outcomes of the HRB Review, of which this survey is an important part, will be used to guide the HRB in setting funding priorities in these areas over the next 3-5 years and in planning strategic partnerships, where these could address weaknesses and barriers to research in these areas.

The survey consists of 2 parts:

- **Sections 1 and 2** should be completed if you provide research funding in **any** area of research. This will help us to place activities in population health research and health services research in a broader research context.
- In addition, if you provide funding for activities in population health research and health services research please also complete **Section 3**.

The Guideline Document describes the two categorisation schemes used in the survey. The Frascati Categorisation System for broad areas of research will allow us to map our results to Forfás and OECD data. The research activity categorisation is adopted from a similar Finnish Review of Public Health and will allow us to make more a focused comparisons of activity.

Thank you for assisting us and for taking the time to provide this information.

## 1. Organisation and Contact Information

### 1.1 Organisation name

### 1.2 Organisation contact details:

Contact name:

Phone no.:

Email address:

Website:

### 1.3 Organisation type

If statutory agency, please specify government department

## 2. Your funding activity

### 2.1 Broad areas in which you fund research

*[OECD Frascati Manuel 2006 categorisation: See Guidelines for more detailed description]*

- |           |                                    |                          |
|-----------|------------------------------------|--------------------------|
| <b>a.</b> | <b>Natural Sciences</b>            | <input type="checkbox"/> |
| <b>b.</b> | <b>Engineering and Technology</b>  | <input type="checkbox"/> |
| <b>c.</b> | <b>Medical and health sciences</b> |                          |
|           | 3.1 Basic medicine                 | <input type="checkbox"/> |
|           | 3.2 Clinical medicine              | <input type="checkbox"/> |
|           | 3.3 Health sciences                | <input type="checkbox"/> |
|           | 3.4 Medical biotechnology          | <input type="checkbox"/> |
|           | 3.4 Other medical sciences         | <input type="checkbox"/> |
| <b>d.</b> | <b>Agricultural sciences</b>       | <input type="checkbox"/> |
| <b>e.</b> | <b>Social sciences</b>             |                          |
|           | 5.1 Psychology                     | <input type="checkbox"/> |
|           | 5.2 Economics and business         | <input type="checkbox"/> |
|           | 5.3 Educational sciences           | <input type="checkbox"/> |
|           | 5.4 Sociology                      | <input type="checkbox"/> |
|           | 5.5 Law                            | <input type="checkbox"/> |
|           | 5.6 Political sciences             | <input type="checkbox"/> |
|           | 5.7 Social and economic geography  | <input type="checkbox"/> |
|           | 5.8 Media and communications       | <input type="checkbox"/> |
|           | 5.9 Other social sciences          | <input type="checkbox"/> |
| <b>f.</b> | <b>Humanities</b>                  | <input type="checkbox"/> |

**2.2 Research performing organisations supported by your research funding**

- |   |                          |
|---|--------------------------|
| Universities                                  | <input type="checkbox"/> |
| Institutes of Technology                      | <input type="checkbox"/> |
| Research Centres affiliated with universities | <input type="checkbox"/> |
| Research centres affiliated with hospitals    | <input type="checkbox"/> |
| Other research organisations                  | <input type="checkbox"/> |
| Hospitals (teaching)                          | <input type="checkbox"/> |
| Hospitals (voluntary)                         | <input type="checkbox"/> |
| Other primary care settings                   | <input type="checkbox"/> |
| Medical charities                             | <input type="checkbox"/> |
| Companies                                     | <input type="checkbox"/> |
| Other (please specify):                       |                          |

**2.3 Modes of research funded by your organisation**

Please select all modes of funding that your organisation supports:

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| <b>2.3.1 Training</b>                                      | Training workshops                  | <input type="checkbox"/> |
|  | Training fellowship                 | <input type="checkbox"/> |
|  | Conferences                         | <input type="checkbox"/> |
|  | Summer school (undergraduate )      | <input type="checkbox"/> |
|  | Summer school (postgraduate)        | <input type="checkbox"/> |
|  | Masters project (individual)        | <input type="checkbox"/> |
|  | Masters programme (group)           | <input type="checkbox"/> |
|  | PhD scholarship (individual)        | <input type="checkbox"/> |
|  | PhD Programme/Graduate School       | <input type="checkbox"/> |
|  | Other (please describe):            |                          |
| <b>2.3.2 Career Advancement</b>                            | Fellowship scheme                   | <input type="checkbox"/> |
|  | Senior fellowship scheme            | <input type="checkbox"/> |
|  | Clinician scientist fellowship      | <input type="checkbox"/> |
|  | Professional development fellowship | <input type="checkbox"/> |
|  | Other (please describe):            |                          |
| <b>2.3.3 Research</b>                                      | Basic research project              | <input type="checkbox"/> |
|  | Applied research project            | <input type="checkbox"/> |
|  | Principal Investigator scheme       | <input type="checkbox"/> |
|  | Research Professor                  | <input type="checkbox"/> |
|  | Research programme                  | <input type="checkbox"/> |
|  | Research partnership (general)      | <input type="checkbox"/> |
|  | Academia-Industry partnership       | <input type="checkbox"/> |
|  | Other (please describe):            |                          |
| <b>2.3.4 Infrastructure</b>                                | Equipment grant                     | <input type="checkbox"/> |
|  | IT support/development              | <input type="checkbox"/> |
|  | Centre/Institute development        | <input type="checkbox"/> |
|  | Specialist facility                 | <input type="checkbox"/> |
|  | Building                            | <input type="checkbox"/> |
| Other (please describe):                                   |                                     |                          |
| <b>2.3.5 Other Supplemental support (please describe):</b> |                                     |                          |

**2.4. Level of research funding provided**

Research expenditure refers to monies distributed to the research providing organisations in the fiscal year.

**2.4.1 2007**

What was your total research funding expenditure in 2007? €

How was this funding distributed between the broad areas of research that you support (either as a monitory figure or an estimated per cent of total funding)?

a.	Natural Sciences	€	or	%
b.	Engineering and Technology	€	or	%
c.	Medical and Health Sciences	€	or	%
d.	Agricultural Sciences	€	or	%
e.	Social Sciences	€	or	%
f.	Humanities	€	or	%

**2.4.2 2006**

What was your total research funding expenditure in 2006? €

How was this funding distributed between the broad areas of research that you support (either as a monitory figure or an estimated per cent of total funding)?

a.	Natural Sciences	€	or	%
b.	Engineering and Technology	€	or	%
c.	Medical and Health Sciences	€	or	%
d.	Agricultural Sciences	€	or	%
e.	Social Sciences	€	or	%
f.	Humanities	€	or	%

**2.4.3 2005**

What was your total research funding expenditure in 2005? €

How was this funding distributed between the broad areas of research that you support (either as a monitory figure or an estimated per cent of total funding)?

a.	Natural Sciences	€	or	%
b.	Engineering and Technology	€	or	%
c.	Medical and Health Sciences	€	or	%
d.	Agricultural Sciences	€	or	%
e.	Social Sciences	€	or	%
f.	Humanities	€	or	%

**2.4.4 Future plans**

If you are not currently funding in the areas of population health and health services research, do you have any plans to do so in the future?

## Thank you completing Sections 1 and 2

If you **DO NOT** provide funding in the areas of population health research (including public health and health promotion) and health services research this completes your survey.

If you **DO** provide funding in the areas of population health research and health services research please proceed to **Section 3**.

### 3. Specific funding activities in the areas of population health research and health services research

#### NOTE:

IF YOU ARE UNABLE TO GROUP YOUR RESEARCH PROJECTS THAT YOU FUND INTO THE ABOVE CATEGORIES, PLEASE SEND ME A LIST OF PROJECT TITLES FUNDED IN 2005-2007.

*See Guidelines for examples of study types that would fall into each category*

#### 3.1 Research activity supported by you in population health (inc. public health and health promotion) and health services research (if any):

<b>a. Theory/Method</b>	Aetiology theories	<input type="checkbox"/>
	Behavioural change theories	<input type="checkbox"/>
	Psychological theories	
	Sociological theory and health	<input type="checkbox"/>
	Intervention methods	<input type="checkbox"/>
	Knowledge dissemination	<input type="checkbox"/>
	Quantitative methods	<input type="checkbox"/>
	Qualitative methods	<input type="checkbox"/>
	Other:	
<b>b. Aetiology/Incidence</b>	Health determinants	<input type="checkbox"/>
	Health status	<input type="checkbox"/>
	Protection factors	<input type="checkbox"/>
	Risk factors	<input type="checkbox"/>
	Incidence of protection or risk factors	<input type="checkbox"/>
	Morbidity & mortality	<input type="checkbox"/>
	Distribution of ill-health in the population	<input type="checkbox"/>
	Other:	
<b>c. Intervention</b>	Health promotion measures	<input type="checkbox"/>
	Primary prevention	<input type="checkbox"/>
	Secondary prevention	<input type="checkbox"/>
	Evaluation of health care interventions	<input type="checkbox"/>
	Community health development	<input type="checkbox"/>
	Other:	
<b>d. Health Policy</b>	National and regional health policy	<input type="checkbox"/>
	Preventative health policy in health services	<input type="checkbox"/>
	Health promotion policies	
	Health economics	<input type="checkbox"/>
	Preventative measures in the health services	<input type="checkbox"/>
	Other:	

#### Studies that should be EXCLUDED from all categories:

- Purely biomedical, toxicological, microbiological, genetic or general pharmacological research
- Animal experiments
- Physiological, biochemical, pathological, psychological or social processes not linked to



prevention or health care

- Clinical evaluation of treatment effects
- Research into diagnostics or pathology not linked to prevention
- Medical treatment/rehabilitation and nursing care research
- Pure social welfare research not linked to health or well-being
- Behavioural science research not linked to health or well-being
- Patient experience of disease or care services
- Welfare research with no link to prevention

### 3.2 Further Information

If there are research activities supported by your organisation that you consider would fall within population health research and health services research, but have not been captured here, please describe:

### 3.3 Level of research expenditure in these areas

Research expenditure refers to monies distributed to the research providing organisations in the fiscal year.

#### 3.3.1 2007

Of your total research expenditure for 2007, how much was distributed in the areas of population health and health services research? €          or          %

Of the total provided above, would it be possible to say how much was distributed in the following categories (either as a monitory figure or an estimated per cent of total funding)

a.	Theory/Method	€	or	%
b.	Aetiology/incidence	€	or	%
c.	Intervention	€	or	%
d.	Health policy	€	or	%

#### 3.3.2 2006

Of your total research expenditure for 2006, how much was distributed in the areas of population health and health services research? €          or          %

Of the total provided above, would it be possible to say how much was distributed in the following categories (either as a monitory figure or an estimated per cent of total funding)

a.	Theory/Method	€	or	%
b.	Aetiology/incidence	€	or	%
c.	Intervention	€	or	%
d.	Health policy	€	or	%

#### 3.3.3 2005

Of your total research expenditure for 2005, how much was distributed in the areas of population health and health services research? €          or          %

Of the total provided above, would it be possible to say how much was distributed in the following categories (either as a monitory figure or an estimated per cent of total funding)

a.	Theory/Method	€	or	%
----	---------------	---	----	---

b.	Aetiology/incidence	€	or	%
c.	Intervention	€	or	%
d.	Health policy	€	or	%

## Appendix 4.2 Survey of heads of major PHR and HSR academic units

### Objective of survey

The aim of the survey of Heads of Academic Units was to gain a better understanding of:

- What organisations are carrying out research in PHR or HSR?
- What units/departments/centres within these organisations are carrying out research in these areas?
- What types of research activity are being undertaken by these units/ departments/ centres?
- Who, within these units/departments/centres, is carrying out the research?

Recipients were also invited to complete a SWOT analysis of PHR and HSR in Ireland, either individually or in collaboration with colleagues in their unit.

### Recipients

Academic Units of interest to the survey were defined as those departments, centres or schools whose core research activities include PHR and HSR. In addition, a number of units and centres have, as part of their research portfolio, activities that fall within these areas of activity, and these units were also included. Academic units were identified through a thorough investigation of university and institute websites and through the HRB list of host institutions. From these sources a database of potential academic units was created. These units spanned all universities on the island of Ireland, Institutes of Technology, private and other non-higher education research organisations and relevant government department research units. A total of 79 Heads of Unit received the survey as follows:

- 8 Universities in Republic of Ireland (48 Academic units)
- 2 Universities in NI (10 Academic units)
- 5 Institutes of Technology (6 Academic units)
- 4 private research organisations (5 Academic units)
- 1 professional association
- HRB (4 units) and Department of Health and Children (6 units)

Responses were received from 25 relevant academic units, representing all of the core schools and centres on the island of Ireland. A list of all recipients in the university sector and their level of response to the survey is presented in Table D.

Responses were received from two of the six Institute of Technology (Waterford and Sligo); from two of the four private research organisations (ESRI and IPH); from the professional association (ICGP); from three of the four research units of the HRB (DDU, MHRU, ADRU) and from the Department of Health. Where no response was obtained, information on personnel and research activities was obtained from relevant web-sites. Through a re-scan of all institution web-pages between June 2009 and August 2009 a number of units, not identified in the original survey were subsequently contacted in 2009.

Table D Units in the Irish university sector included in the survey

Institution	Department/school/centre	Response to invitation?	Completed Survey	Completed SWOT	Provided Publications	Comments
Dublin City University	School of Nursing	Yes	Yes	No	Yes	
NUI Galway	Dept of Health Promotion	Yes	Yes	Yes	Yes	
	Department General Practice	Yes	Yes	No	Yes	
	Irish Centre for Social Gerontology (Business School)	No				Further information obtained from Centre website
	School of Medicine	No				Further information obtained from School website
	Dept of Bacteriology	No				
	School of Nursing	No				Further information obtained from School website
	Dept of Psychology	Yes	Yes	No	Yes	
	Dept. of Mathematics & Statistics	Yes	Yes	No	No	No further information sought
NUI Maynooth	NIRSA	Yes	See below			Part of consolidated response
	Dept. of Psychology	Yes	NA			Did not consider review area relevant to their activities
	Dept. of Anthropology	Yes	See below			Part of consolidated response
	Dept of Maths	Yes	See below			Part of consolidated response
	Dept. of Geography	Yes	See below			Part of consolidated response
	Dept. of Sociology	Yes	See below			Part of consolidated response
	School of Business and Law	Yes	See below			Part of consolidated response
	Research Office	Yes	Yes	No	No	Validated choice of departments and schools
Royal College of Surgeons in Ireland	Epidemiology & Public Health Medicine	Yes	Yes	Yes	Yes	
	Dept. of General Practice & Family Medicine	Yes	Yes	Yes	Yes	
	Health Services Research Centre	Yes	Yes	Yes	Yes	

Institution	Department/school/centre	Response to invitation?	Completed Survey	Completed SWOT	Provided Publications	Comments
Trinity College Dublin	Dept of Public Health and Primary Care	Yes	Yes	Yes	Yes	Included Centres for Global Health, and Health Policy and Management
	School of Medicine	Yes	NA			Did not consider review area relevant to their activities
	Clinical Microbiology	No				
	Trinity Centre SJH	Yes	No			
	Haughton Institute SJH	Yes	NA			Did not consider review area relevant to their activities
	School of Social Work and Social Policy	No				Individual researchers included in researcher survey
	School of Dentistry	Yes	Yes	No	No	
	School of Nursing	Yes	Yes	No	Yes	
	Dept. of Psychology	Yes	NA			Referred survey to Health Policy and Management
	School of Linguistics, Speech & Communication Science	Yes	NA			Did not consider review area relevant to their activities
	School of Computer Science	No				
	Research Office	Yes	No			Validated choice of departments and schools
University College Cork	Dept of Epidemiology and Public Health	Yes	Yes	Yes	Yes	
	Dept of General Practice	NA				Included in Public Health response
	School of Medicine	No				Further information obtained from School website
	School of Dentistry	Yes	Yes	No	Yes	
	Oral Health Services Research Centre	Yes	Yes	Yes	Yes	
	School of Nursing	No				Further information obtained from School website
	Food and Nutritional Science	No				Further information obtained from School website
	Statistics	No				

Institution	Department/school/centre	Response to invitation?	Completed Survey	Completed SWOT	Provided Publications	Comments
	Centre for Policy Studies	Yes	-	-	-	Included in Oral Health Services Research Centre response
	Dept of Economics	Yes	Yes	No	Yes	
	Health Economics Group	Yes	Yes	No	Yes	
<b>University College Dublin</b>	School of Public Health and Population Science	Yes	Yes	Yes	Yes	
	School of Medicine and Medical Sciences	No				Further information obtained from School website
	Dept. General Practice	No				Further information obtained from Dept website
	School of Nursing	Yes	Yes	Yes	No	
	School of Agriculture, Food science and Veterinary Medicine	Yes	Yes	No	Yes	Includes Centre for Food Safety response
	School of Applied Social sciences	No				
	School of Psychology	No				
	School of Physiotherapy and Performance Science	Yes	Yes	No	No	
	Geary Institute	Yes	Yes	No	No	
<b>University of Limerick</b>	Department of Economics	Yes	No	No	No	Further information obtained from School website
	Strategic Health Care Management Research Group	Yes	Yes	No	No	Further information obtained from School website
	Health Systems Research Centre	Yes	Yes	No	No	Further information obtained from School website
	Research Office	Yes	No			Validated choice of departments and schools
<b>Queens University Belfast</b>	Centre for Clinical and Population Sciences	Yes	Yes	No	Yes	
	School of Medicine	No				
	School of Nursing & Midwifery - research unit	Yes	Yes	No	Yes	
	School of Pharmacy	Yes	Yes	No	No	

Institution	Department/school/centre	Response to invitation?	Completed Survey	Completed SWOT	Provided Publications	Comments
	School of Psychology	Yes	Yes	Yes	No	
	School of Sociology, Social Policy and Social Work	No				
University of Ulster	Faculty of Life and Health sciences	Yes	Yes	No	No	
	Nursing Research Institute	Yes	Yes	No	Yes	
	Health & Rehabilitation Research Institute	Yes	No			
	Psychology Research Institute	Yes	Yes	No	No	

## Survey distribution

The survey was initially piloted with the heads of 5 academic units in March 2008 and distributed to the full recipient list in April 2008 as a Microsoft Word attachment to an email. Non-respondents were followed up at 10 and 20 days.

For the purposes of the survey, research activity was categorised according to the Swedish Review of Public Health Research<sup>119</sup> framework as modified for this review to suit Irish research concerns. A table outlining the 4 Categories, along with examples of the types of studies that would be included in each category was provided to the Heads of unit as an email attachment. Heads of unit were also asked to provide:

- a list of publications for their unit, from 2003-2008
- a list of research staff working within their unit (name, post type, employment status and email address)

## Survey Instrument

### Survey of Heads of Unit/Department/Centre

#### Health Research Board Review of Population health research (including Public Health and Health Promotion) and Health Services Research

Dear Head of Unit/Department/Centre

Please find in the following pages a request for information on the research activities and researchers in your unit/department/Centre. This information is being compiled by us as part of a *Review of Population health research (including Public Health and Health Promotion) and Health Services Research*.

### Objectives of the review

- a. Establish a baseline of research capacity in PHR and HSR in Ireland
- b. Map the state of the art in terms of strengths and weaknesses of PHR & HSR
- c. Assess the outputs and impacts of PHR & HSR
- d. Provide recommendations for infrastructure and research investment, for both the HRB and other national agencies, in the areas of PHR and HSR

### Where this survey fits in

The aim of this survey is to build up a picture of the research landscape in Ireland with particular reference to research in population health research and health services research.

The objective of this survey is to gain a better understanding of:

- what organisations are carrying out research in these areas
- what units/departments/centres within these organisations are carrying out research in these areas
- the types of research activity with which the unit/department/Centre is involved
- who, within these units/departments/centres, is carrying out that research

<sup>119</sup> Källestål C and Swanberg I (2005) *Part 2: An inventory of Swedish public health research*. Scandinavian Journal of Public Health. 33(Supp 65), 17-45.



The outcomes of the HRB Review, of which this survey is an important part, will be used to guide the HRB in setting funding priorities in these areas over the next 3-5 years and to make the case for targeted funding where weaknesses and barriers have been identified. In addition, the Review will be published and distributed to other key funders to inform their thinking on funding strategy in these areas and in planning strategic partnerships with the HRB. We will contact all researchers identified in this survey for a more detailed analysis of their research activities, so it is important that we capture as many researchers as possible.

### The Survey consists of two parts

**Part A:** Seeks information on the research activity and personnel in your unit/department/centre. In order to clarify the types of research activity with which the Review is concerned I have also provided you with a Guideline Document that describes these.

**Part B is optional:** In surveying individual researchers, they will be asked for their opinions on the strengths, weaknesses, opportunities and barriers to research in population health research and public health. However, you may wish to carry out this analysis on an 'all staff' basis and Part B provides the framework to do so.

## PART A:

### TO BE COMPLETED BY HEAD OF UNIT/DEPARTMENT/CENTRE

#### 1. Organisation and Contact details

##### 1.1 Organisation name

##### 1.2 Organisation type

If statutory agency of government, please specify government department

##### 1.3 Your name and contact details:

Name:  
Unit/department/Centre  
If Centre, primary department/  
School of affiliation:  
Phone no.:  
Email address:  
Website:

#### 2. Publications

Many units, departments and Centres produce annual reports of activity, or compile research metrics on their activities for internal reports etc. It would be very helpful to us to have a list of your publications for the past 5 years (2003-2007).

Can you provide us with a list of relevant publications, produced by your unit/department/centre?

YES ☐ NO ☐

If **yes**, for what years can you provide a list of relevant publications?

2003 ☐

2004 ☐  
 2005 ☐  
 2006 ☐  
 2007 ☐

If **yes**, how are you providing this information to us?

Electronic file attachment(s)\*: ☐ Name of file(s):  
 (\*Preferred option)

Hard copy report(s): ☐

Printed list(s) (not formatted for publication): ☐

#### **NOTE**

If you have supplied a list of your unit/department/centre publications for the last 5 years you may go directly to Section 4.

You may however, wish to indicate the breadth of research activity in your unit/department/centre by completing Section 3 (this applies especially if you are unable to supply a list of publications).

### **3. Research activities in your unit/department/centre**

#### **3.1 Research activities type**

Please indicate research activities in population health research and health services research with which researchers within your unit/department/centre are involved.

See Guidelines for examples of study types that would fall into each category. Tick any that apply:

<b>A</b>	<b>Theory/Method</b>	Aetiology theories	<input type="checkbox"/>
		Behavioural change theories	<input type="checkbox"/>
		Psychological theories	<input type="checkbox"/>
		Sociological theory and health	<input type="checkbox"/>
		Intervention methods	<input type="checkbox"/>
		Knowledge dissemination	<input type="checkbox"/>
		Quantitative methods	<input type="checkbox"/>
		Qualitative methods	<input type="checkbox"/>
			Other:
<b>B</b>	<b>Aetiology/Incidence</b>	Health determinants	<input type="checkbox"/>
		Health status	<input type="checkbox"/>
		Protection factors	<input type="checkbox"/>
		Risk factors	<input type="checkbox"/>
		Incidence of protection or risk factors	<input type="checkbox"/>
		Morbidity & mortality	<input type="checkbox"/>
		Distribution of ill-health in the population	<input type="checkbox"/>
			Other:
<b>C</b>	<b>Intervention</b>	Health promotion measures	<input type="checkbox"/>
		Primary prevention	<input type="checkbox"/>
		Secondary prevention	<input type="checkbox"/>
		Evaluation of health care interventions	<input type="checkbox"/>
		Community health development	<input type="checkbox"/>
			Other:
<b>D</b>	<b>Health Policy</b>	National and regional health policy	<input type="checkbox"/>
		Preventative health policy in health services	<input type="checkbox"/>
		Health economics	<input type="checkbox"/>

Health promotion policies ☐  
 Preventative measures in the health services ☐  
 Other:

**Research activities that should be EXCLUDED from all categories:**

- Purely biomedical, toxicological, microbiological, genetic or general pharmacological research
- Animal experiments
- Physiological, biochemical, pathological, psychological or social processes not linked to prevention or health care
- Evaluation of treatment effects (clinical)
- Research into diagnostics or pathology not linked to prevention
- Medical treatment/rehabilitation and nursing care research
- Pure social welfare research not linked to public health
- Behavioural science research not linked to health or well-being
- Patient experience of disease or care services
- Welfare research with no link to prevention

**3.2 Further information**

If there is research activity carried out within your unit/department/Centre that you would consider fall within population health research (including public health) and health services research, but have not been captured here, please describe:

**4. Researchers in your unit/department/centre who should be included in this researcher survey**

Please include ALL relevant research personnel types: PhD student, contract researcher, technician, postdoctoral researcher, research fellow, research officer, temporary or permanent academic staff, clinician researcher, medical consultant, research advisor, other.

Data on employment status, as well as post type, is being compiled by us to provide a picture of human capacity demography in these research areas.

Name:  
 Post type: PhD Student  
 If other, please describe:  
 Employment status: Student  
 If other, please describe:  
 Email address:

Name:  
 Post type: PhD Student  
 If other, please describe:  
 Employment status: Student  
 If other, please describe:  
 Email address:

*Please copy and paste this page if you wish to list more than 20 relevant researchers:*

## Appendix 4.3 Survey of PHR and HSR research performers

### Survey objectives

This survey had two sets of objectives; the first was to gain a better understanding of:

- 1) The type of research activity in which researchers are primarily engaged
- 2) The career pathway and skills/competencies of researchers who are engaged in research activities relevant to PHR and HSR.
- 3) Skills/competencies they are using to conduct their research and how these were gained

Secondly, data on the extent to which Irish-based researchers in PHR and HSR considered themselves to be active in influencing developments in health policy and practice in Ireland was collected by the inclusion of questions relating to research impact. The objective of this part of the survey was twofold:

- 1) To determine the degree to which researchers considered that their research has contributed to health policy and practice
- 2) To identify mechanisms and strategies utilised by researchers to disseminate their research

Questions that looked at the impacts of research covered:

- The drivers or motivations for initiating research project
- The mechanisms used by researchers, as a result of the evidence generated by their research, to
  - influence:
    - population/public health developments or the formulation of policies for health
    - the organisation, delivery or reform of a health service
    - changes to health services provision and practice
- the strategies researchers use to bring their research results to the attention of a wider audience

### Recipients

Researchers of interest to the survey were defined as persons whose research activities fell within the scope of the review as defined in Appendix 1. Researchers were initially identified through the HRB database of applicants and through searches of university and organisation websites. The list of researchers identified for specific academic units was further verified through the Head of Unit Survey and heads of unit were asked to identify other relevant researchers whose research activities were relevant to this review. From this a database researchers (fixed-term and permanent) in 27 institutions and organisations across the island of Ireland currently holds 604 entries, and their position within their organisation has been recorded. The information in this database has been updated on a number of occasions over 2008 and 2009.

## Distribution

For the purposes of the survey, research activity was categorised according to the Swedish Review of Public Health Research<sup>120</sup> framework as modified for this review to suit Irish research concerns (see Appendix 1). Suggested strategies for policy and practice impacts were based on the payback framework developed by the Health Economics Research Group (HERG) in the 1990s to assess the benefits of health research<sup>121</sup>.

The survey was initially piloted with 20 randomly chosen academic staff in April 2008 and distributed to the full recipient list of researchers in May 2008 as an email containing a link to the on-line survey, created through SurveyMonkey. Non-respondents were followed up at 10 and 20 days. The survey was distributed to contract research and academic staff only, and was not distributed to undergraduate or postgraduate students. Qualifying researchers recorded in the Excel database of researchers in May 2008 (515) received the on-line survey.

## Profile of researchers responding to survey

The survey of research performers achieved an overall response rate of 69 per cent (329 respondents), of which approx 2/3 of respondents were female and 1/3 were male. A maximum of 309 recipients responded to the policy/practice impact questions in the survey, representing a response rate of 64 per cent.

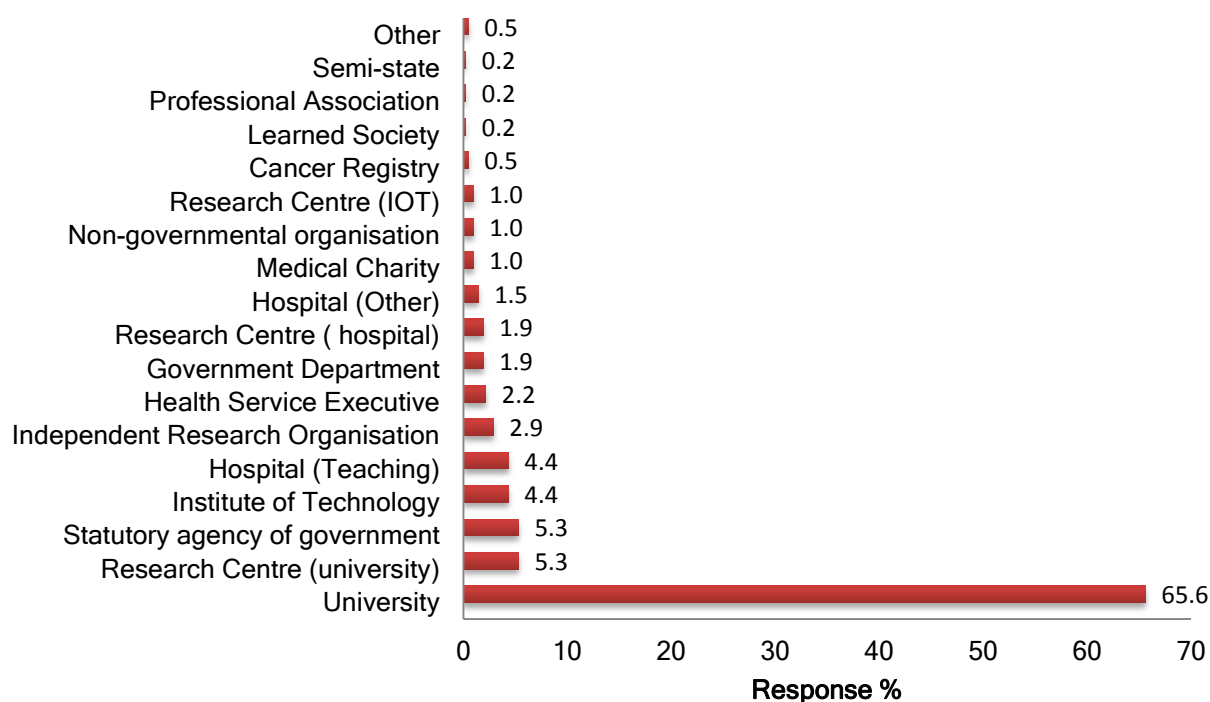
65.6 per cent of respondents were from universities or research centers affiliated with a university. A further 13.1 per cent of respondents were affiliated with a teaching or voluntary hospital or research centre associated with a hospital, while 4.4 per cent of respondents were based in an Institute of Technology. The remaining 16.9 per cent of respondents were spread across non-higher education research organisations, statutory agencies, government departments and voluntary organisations (Figure A).

Analysis of these respondents showed that 48 per cent were qualified to Masters level, 44 per cent were qualified to doctoral level, 37 per cent held positions as senior lecturer or lecturer, 20 per cent held positions at Professor or Associate Professor level, while 18 per cent held a clinical post with an academic element (e.g. academic medical or nursing position).

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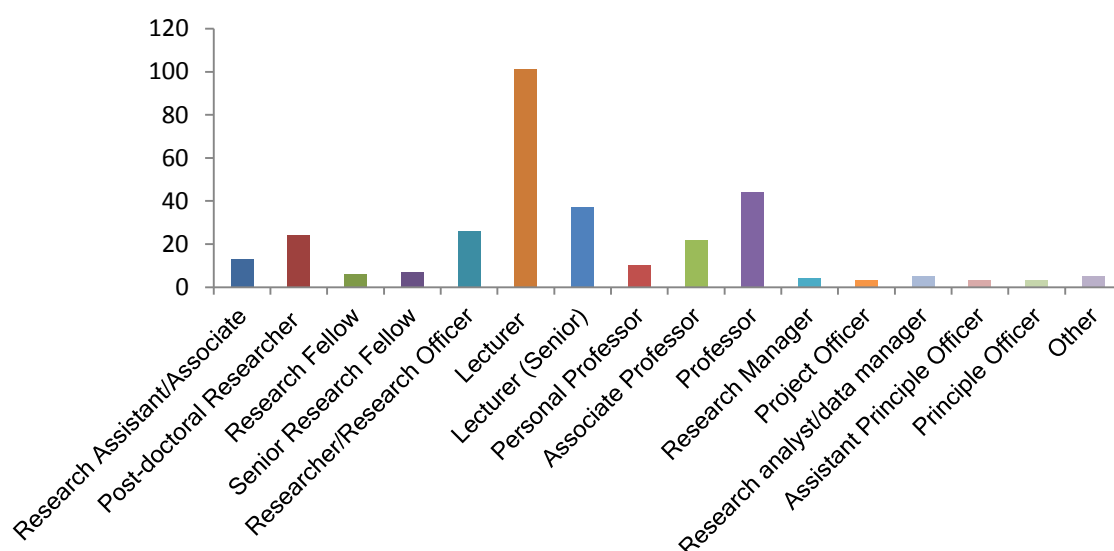
<sup>120</sup> Källestål C and Swanberg I (2005) *Part 2: An inventory of Swedish public health research*. Scandinavian Journal of Public Health. 33(Supp 65), 17-45

<sup>121</sup> Buxton M. and Hanney S. (1996) *How can payback from health services research be assessed?* Journal of Health Services Research and Policy. 1:35-43.



**Figure A** Organisational affiliation of respondents to survey

A comparison of the distribution of current academic and research positions reported by respondents, against those identified in the master-list of researchers compiled for the survey indicates that responses were reasonably representative (Figure B). The largest discrepancies were at more junior levels (research assistants and postdoctoral researchers), where fewer researchers responded to the survey. The 'Other' category included a researcher with the WHO, but seconded to an Irish university. In addition, the survey was not distributed to personnel identified as PhD students by their heads of unit.



**Figure B** Career stage of researcher survey respondents

## Survey instrument

### 1. Introduction

This survey forms part of a Health Research Board (HRB) Review of Population health research (including Health Promotion) and Health Services Research. The aim of the Review is to build up a picture of the research landscape in Ireland as it relates to these areas and to identify priorities for funding that address the current gaps and weaknesses, as well as supporting areas of strength.

This survey has two objectives:

- to gain a better understanding of the type of research activity in which you are engaged and the skills/competencies you are using to conduct your research
- to get an indication of the impact of your research findings on policies and practices in populations health sciences and health services research.

Your name and contact details have been identified through your institution website and through a Heads-of-Unit survey carried out by the HRB over the summer months. Information on individual researchers will NOT be published or made available to anyone else.

The survey has 7 questions and should take no more than 10 minutes of your time to complete. We really appreciate your contribution and thank you for taking the time to return this survey to us. When you are ready to start, click on the NEXT button below.

### 2. Some information about you

An aim of the HRB Review is to look at human capacity within the Irish research system, with regards to population health research and health services research. Therefore, we'd like to get some demographic information about you (this information is strictly for HRB use and will not be distributed to others).

#### 2.1 Please indicate your gender

☐ Female ☐ Male

#### 2.2 Choose the organisation type(s) with which you are primarily affiliated for research purposes:

- ☐ University
- ☐ Institute of Technology
- ☐ Research Centre (affiliated with a university)
- ☐ Research centre (affiliated with an IT)
- ☐ Research centre (affiliated with a hospital)
- ☐ Independent Research Organisation
- ☐ Hospital (Teaching)
- ☐ Hospital (Other)
- ☐ Medical Charity
- ☐ Non-governmental organisation
- ☐ Health Service Executive
- ☐ Government Department
- ☐ Statutory agency of government
- ☐ Learned Society
- ☐ Professional Association
- ☐ Other

### 3. Your research position

We'd also like to learn about the type of research position you currently hold.

If you hold a clinical appointment with an academic element, choose the Clinical Post option in Q2.2 and specify the post type in Q3.3.

#### 3.1 Your current research position (Academic post):

Choose the post that most closely describes your current research position:

- ☐ Clinical Post (see Q3 below)
- ☐ PhD Student
- ☐ Research Assistant
- ☐ Researcher
- ☐ Postdoctoral Researcher (1-4 yrs post PhD)
- ☐ Research Fellow (5-9 yrs post PhD)
- ☐ Senior Research Fellow (10 or more yrs post PhD)
- ☐ Research Officer
- ☐ Lecturer (Junior/below the bar)
- ☐ Lecturer (College/above the bar)
- ☐ Lecturer (Senior)
- ☐ Personal Professor
- ☐ Associate Professor
- ☐ Professor
- ☐ Clinical Scientist
- ☐ Principle Officer
- ☐ Assistant Principle Officer
- ☐ Project Officer
- ☐ Research Technician
- ☐ Research Manager
- ☐ Other

#### 3.2 Your current research position (Clinical post with academic element):

Choose the post that most closely describes your current research position:

- ☐ Clinical Therapist
- ☐ Clinical Nurse
- ☐ Clinical Research Fellow
- ☐ Clinical Lecturer (below/above the bar)
- ☐ Clinical Lecturer (Senior)
- ☐ Clinical Professor
- ☐ Clinical Associate Professor
- ☐ General Medical Practitioner
- ☐ Medical Consultant/Specialist
- ☐ Other

#### 3.3 In terms of funding for your research work, do you:

- ☐ Work on a research project(s) for which someone else received funding (not eligible to be Principal Investigator yourself)
- ☐ Work on a research project(s) for which you received funding (eligible to be Principal Investigator)
- ☐ Do not conduct externally funded research
- ☐ None of these describe how my research work is funded



#### 4. Your research expertise/experience

This question seeks to identify the training and expertise of researchers in the Irish system who work in the fields of population health research and/or health services research.

We would like to know about the area in which you completed your primary degree and about any further training you have undertaken.

##### 4.1 Firstly, in what area did you take your primary degree?

- ☐ Biological sciences
- ☐ Chemical sciences
- ☐ Commerce
- ☐ Computer sciences
- ☐ Dental studies
- ☐ Engineering
- ☐ Environmental sciences
- ☐ Health Sciences
- ☐ Humanities
- ☐ Languages
- ☐ Law
- ☐ Management sciences
- ☐ Medicine
- ☐ Nursing
- ☐ Pharmacology
- ☐ Physical sciences
- ☐ Politics
- ☐ Psychology
- ☐ Social sciences
- ☐ Therapies
- ☐ Other

##### 4.2 In what area(s) have you received further formal qualifications (Masters, PhD) or gained experiential learning? (For specialist clinical training see Q4.3 below)

	Formal (Masters)	Formal (PhD)	Further training (experiential)
Applied statistics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical trials methods/conduct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Complex intervention methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epidemiology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethics in health care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General medical practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health care policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health economics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health informatics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health promotion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health psychology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health services organisation and management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health services research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health technology assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inequality and social care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
International health sciences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Medical anthropology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical geography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical sociology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mental health and disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microbiology/bacteriology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Modelling in health care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occupational health medicine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participatory/action research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Primary care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programme development and evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public health medicine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public health sciences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risk analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social sciences relevant to health care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**5 If you are clinically trained, please describe the specific specialism(s) you pursued following your general training:**

**5. Your research activities**

This question seeks to capture the research activities and study types that are primarily undertaken by you in population health research and/or health services research. These have been grouped under 4 broad headings, with associated study types within each heading. Tick all that apply to your research.

**5.1 Theory/Method (Studies that explore/develop the theories that underpin a research area)**

- ☐ Aetiological theories
- ☐ Behavioural change theories
- ☐ Sociological theories
- ☐ Psychological theories
- ☐ Development of intervention methods
- ☐ Knowledge dissemination theory/methods
- ☐ Quantitative methods
- ☐ Qualitative methods
- ☐ Other
- ☐ Don't undertake research in this area

**5.2. Aetiology/Incidence (Studies that examine the determinants, incidence and outcomes of health and disease, human behavior and lifestyle in Ireland or globally)**

- ☐ Health determinants
- ☐ Protection factors
- ☐ Risk factors
- ☐ Incidence of protection or risk factors
- ☐ Morbidity and mortality studies
- ☐ Distribution of ill-health in the population
- ☐ Lay perspectives
- ☐ Health and social care impacts
- ☐ Genetic epidemiology
- ☐ Other
- ☐ Don't undertake research in this area

**5.3 Intervention (Studies that examine the process and outcomes of health and social care interventions on an individual, group or population level in Ireland or globally)**

- ☐ Health promotion measures
- ☐ Implementation of evidence
- ☐ Primary prevention
- ☐ Secondary prevention
- ☐ Prevention measures in health services
- ☐ Programme/project evaluation
- ☐ Other
- ☐ Don't undertake research in this area

**5.4. Policy for Health (Studies that examine the formulation, inputs, outcomes and impacts of policy-making/service provision for health and social care regionally, nationally and globally)**

- ☐ National health policy
- ☐ Regional health policy
- ☐ Global health policy
- ☐ Preventative health policy
- ☐ Economic policy analysis
- ☐ Economic evaluation
- ☐ Health services implementation
- ☐ Other
- ☐ Don't undertake research in this area

**6. Drivers of your research**

This question explores how people shape their research questions, in other words, the drivers of research - what makes you want to become involved in a research project or prompts you to ask questions that might have solutions through research? Choose all that apply:

**6.1. Which of the drivers for research listed below might describe your motivations for initiating a research project? Indicate the importance of this driver to your research activity.**

	<u>Never</u>	<u>Rarely</u>	<u>Sometimes</u>	<u>Always</u>
Curiosity- or hypothesis-driven research idea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To address a major national or international health issue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Issue of policy gap identified by engaging informally with policy-makers or health service providers/practitioners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Input from stakeholders through a formal mechanism such as an advisory committee or steering group (e.g. comprising policy-makers, health services providers, health managers etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Issue identified through other means (e.g. government reports, media reports, conference attended, international research networks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Response to tender for commissioned study in your area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Response to call from funding agency or government department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Response to strategic initiative by government or health agency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 7. Impacts of your research

This question explores how, as a result of the evidence generated by their research, researchers have tried to influence:

- population/public health developments or the formulation of policies for health
- the organisation, delivery or reform of a health service
- changes to health services provision and practice

A number of mechanisms are suggested but we would also like to hear about others not listed here that you may have used.

### 7.1. Indicate how you, as a result of your research, have potentially contributed to or influenced population/public health developments or the formation of policies for health.

	<u>Never</u>	<u>Once</u>	<u>More than once</u>
Member of Advisory Committees/Groups to government or policy-makers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contributed to government discussion papers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carried out research that was cited in policy/strategy document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participated in policy workshops/seminars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wrote commissioned report for a policy-maker e.g. government department, statutory agency, service provider	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Made submission to consultation on new/revised Act	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contributed to evidence base for public health promotion/advocacy campaign	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other mechanism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 7.2. Indicate any mechanisms that you have used to ensure that the results of your research might potentially have an impact on the organisation, delivery or reform of a health service or bring about changes to health services provision.

	<u>Never</u>	<u>Once</u>	<u>More than once</u>
Contributed to the development of practice/treatment guidelines or protocols	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evaluated the evidence for a new intervention e.g. health technology assessment, systematic review, feasibility study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Involved in the introduction of a new intervention, service, process or system in the health services e.g. as a result of a randomised control trial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contributed to the planning or organisation of health service provision e.g. future needs assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Influenced the provision, content or approach taken to training and education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other mechanism used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 8. Strategies for knowledge transfer and exchange

This question explores the strategies researchers use to bring their research results to the attention of a wider audience. A number of strategies are suggested but we would also like to hear about others not listed here that you have used.

### 8.1 Indicate whether you use, or have used any of the strategies listed below to engage with potential end-users of your research.

Never Once More than once

Publish in professional association Bulletins/Newsletters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Publish in national journals relevant to your field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Publish in international journals relevant to your field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Present your research findings at conferences relevant to your field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Informal networks or contacts with policy-makers or professional bodies that represent practitioners and that play a key role in guideline/policy development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Formal or structured linkages with policy-makers or professional bodies to engage key stakeholders in the research process from initiation to completion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meetings with policy-makers or practitioners prior to design of a research study to identify a policy or practice-relevant problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy briefing document, booklet or other communiqué submitted to policy-makers, describing the policy-relevance of your research findings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seminar or workshop involving researchers and policy makers/health service managers/practitioners to discuss the relevance or impact of your research to them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Article submitted to bulletin/newsletter of government body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Article submitted to local, regional or national newspaper or health supplement <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engagement with patient organisation or advocacy group for whom your research findings would be of interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Qualitative follow-up study on knowledge transfer

As a follow-up to the survey findings described above further information was sought from a subset of respondents, with the aim of gaining greater insight into the barriers and enablers of effective knowledge transfer across the research-policy interface. In total, 12 Principal Investigators (PI's) were contacted from the list of respondents who had indicated policy or practice impacts of their research in the original survey, of whom seven responded. Respondents were asked to provide a clear, specific example of how their research findings influenced a health policy or practice and to indicate how they disseminated their research findings.