Institution: University of Dundee
Unit of Assessment: UoA2 Public Health, Health Services and Primary Care
a. Overview

Research in Public Health, Health Services and Primary Care at Dundee uses advanced health informatics and novel clinical trials to address important health problems, delivering practical solutions leading to health improvement for individuals, communities and populations. We are part of the School of Medicine within the College of Medicine, Dentistry and Nursing (CMDN; Head, Prof. John Connell). Our research is primarily based in the Division of Population Health Sciences (PHS), co-led by **Sullivan** and **Williams**. PHS (**Colhoun**, **Crombie**, **Davey**, **Donnan**, **Grant**, **Guthrie**, **Looker**, **Marwick**, **Meng**, **Morales**, **Ogston**, **Smith**, **Sullivan**, **Torrance**, **Williams**) has cross-divisional affiliations with the Centres for Public Health Nutrition Research (**Anderson**) and Research into Cancer Prevention and Screening (**Steele**) in the Division of Cancer Research. We are an integral part of the School's Medical Research Institute (MRI) (co-Directors Wolf and Belch) and derive substantial benefit from being part of a wider structure that facilitates collaboration within the medical school and further afield, and supports core facilities, including the Health Informatics Centre (HIC) and the Tayside Medical Science Centre (TASC). Our unified aim is to deliver internationally recognised research that leads to better population health by improving measures for disease prevention as well as the quality and safety of patient care. The groups within the Unit achieve this aim by using appropriate blends of three types of research:

- ***Informatics and Epidemiology***. We use linked eHealth record-derived and research-derived data to address important questions about disease pathogenesis, prevention and treatment; including disease and health behaviour, epidemiology, pharmacoepidemiology, informatics, and quality and safety improvement.
- ***Clinical Trials***. We have a significant portfolio of work developing and trialling public and professional behavioural change interventions, other complex interventions and drug trials, particularly in the community and primary care, in order to improve health and well-being.
- ***Health Improvement***. An important part of our activity is to carry out applied translational research aiming to reduce the burden of disease or improve health through influencing individual health behaviours and community environments, changing professional practice and informing evidence based policy.

b. Research Strategy

Strategic aims

During the assessment period 2008-2013 we aimed to deliver internationally recognised research that would lead to better population health by improving measures for disease prevention as well as the quality and safety of patient care. To support these goals we developed: the highest standards in recruitment and development of all categories of staff; new areas of high quality multidisciplinary academic activity; sustainable national and international collaborations with leaders in their field of activity; partnerships with key UK and international funding agencies and academic institutes; and investment in the highest quality of facilities and services. These principles underpin our future strategy of positioning ourselves at the forefront of the current revolution in the exploitation of eHealth record data, focussing on the areas of health and healthcare which have greatest relevance to primary care and the population.

Significant changes over the period 2008-13: Significant strategic changes have been made in: (1) targeted recruitment (**Colhoun**, **Smith**, **Looker**, **Marwick**, **Morales**, **Grant**, **Meng**, **Torrance**); (2) focusing our research to maximise the benefits of collaboration and sharing of expertise across groups and themes; (3) the development of Medical School infrastructure, notably new investment and development of health informatics capacity and research. These are described below.

Future Strategy

- **Informatics and Epidemiology:** Robust methodology to create, link and manage large datasets, underpinned by robust and transparent data governance, is essential to our future strategy. Important aspects of this work are developing technologies, data warehousing and access mechanisms to accelerate the safe use of eHealth records, other NHS data and associated research datasets (including genetics and 'omics data). We will build on these strengths in our future development; over the next five years, we will expand the range of bioresource collections that we can routinely link to the extensive longitudinal eHealth record databases available to us across a wide range of diseases. These currently include major programmes in Types 1 and 2 diabetes (Genetics of Diabetes Audit and Research Study in Tayside, Scotland (GO-DARTS, currently ~9500 cases and 8000 controls) and the Scottish Diabetes Research Network Type 1 Bioresource), and Generation Scotland: the Scottish Family Health Study. We are building further resources in eczema as well as supporting related work across the Medical School (for example, BiostatCHF in heart failure). A major goal, in conjunction with NHS Scotland Information Services Division and other academic colleagues across Scotland, is the establishment of a national pharmacoepidemiology platform to facilitate rapid studies of drug efficacy, safety, prescribing quality and real-world cost effectiveness. This was one of the themes of the recent Health Informatics Research Centre (HIRC) award co-ordinated by the MRC (£19M), led by Dundee (Morris, UoA1; **Colhoun** and **Sullivan**), stimulated by a significant internal investment in health informatics by the University (£1.2M).

- **Clinical Trials**: Our record of achievement in clinical trial design and implementation supports the translation of our epidemiological work via new knowledge into clinical trials and health improvement. Building on the success of the Scottish Bell's Palsy study, we have funded and conducted large randomised trials, developing particular expertise in complex interventions, the conduct of trials in community and primary care settings, and methodological innovations such as the use of stepped-wedge designs. We have developed a framework for designing parallel process evaluations of complex intervention trials as well as creating and implementing novel desktop software to facilitate practice-based recruitment (Torrent Software; **Sullivan** *et al*).

  The development, trialling and real-world implementation of public and professional behavioural change interventions, other complex interventions and drug trials will remain a priority over the next five years. We will build on our existing expertise, particularly in the conduct of trials in community and primary care settings, to extend our portfolio to the management of chronic pain, interventions to improve prescribing safety and antibiotic use, and management/prevention of obesity, taking advantage of major funding opportunities from the EU (FP8, Horizon 2020), UK Research Councils (e.g. Lifelong Health and Wellbeing) and the National Institute for Health Research (NIHR). Recruitment will be supported by the development of the SHARE Scottish Health Research Register (Scottish Government (SG); **Sullivan** *et al*), a large-scale database of research volunteers which facilitates efficient, ethical and targeted recruitment. This PHS-led project, launched in 2012, is currently recruiting >1000/volunteers per month with a target of 100,000 registrants by the end of 2014. With more recent Wellcome Trust funding, SHARE is obtaining enhanced consent for research use of "spare blood" from routine samples for DNA extraction and other analysis (Go SHARE http://medicine.dundee.ac.uk/goshare-spare-blood-project), initially in Tayside and with a view to rolling out to other NHS Boards in Scotland.

- **Health Improvement:** During the assessment period, we have ensured the translation of our work to real-world practice by conducting directly relevant applied research aiming to reduce the burden of disease or improve health status and well-being at individual, community and population level. To ensure that our findings will influence public health and healthcare practice, we work closely with a wide range of stakeholders including NHS organisations (e.g. NICE and the Scottish Intercollegiate Guidelines Network, SIGN), clinicians, NHS managers, local authorities, third sector and policy makers. We collaborate in this endeavour with colleagues in Dentistry and Nursing (UoA3) and in the NHS in Tayside and Fife.

We will continue to work closely with NHS professionals and policymakers in the design and conduct of research and seek large-scale funding for such collaborations. A proposal for funding of a £2.75M Scottish Improvement Science Collaborative Centre has already been submitted

(**Guthrie**, **Davey**, with Renfrew, UoA3). We will use this platform to undertake research into methods that improve patient outcomes and quality of healthcare in real life settings that are capable of large-scale implementation.

c. People, including:

I. Staffing strategy and staff development

Our research achievements and strategy are driven and realised by our staff in line with our overall aims, which reflect those of the Medical School and CMDN. In order to provide the resource for attaining our ambitions and advancing further innovations we are committed to a sustainable approach to recruitment, retention and development of staff.

Recruitment of the best possible research staff: We are committed to recruiting internationally competitive researchers who will drive our strategic programmes, and attract significant external funding. We do so as part of the MRI, whose Recruitment Committee includes representation from PHS, and oversees the strategy and process of appointing research staff. Recent strategic appointments include chairs in Public Health (**Colhoun**; informatics, diabetes and genetic epidemiology) and Population Science (**Smith**; primary care epidemiology and chronic pain). Following a strategic review we also appointed Lecturers in Social Anthropology (**Grant**) and Genetic Epidemiology (**Meng**). We currently seek a Senior Lecturer in Health Informatics and a Lecturer/Senior Lecturer in Trial Methodology.

Research staff support: Our commitment to personal development of research staff reflects the principles of the UK Concordat to Support the Career Development of Researchers (2008). Dundee has been recognised by the European Commission for "HR Excellence in Research", demonstrating continued development of an environment that supports research excellence and increases focus and impact. We are committed to recruiting the best researchers and fostering their development via needs-based supervised learning supported by a Training and Development Officer provided specifically for research staff by the University Staff Development Office.

In line with University policy we are committed to Equality and Diversity at all stages of recruitment and career development. Both sexes are well-represented at each level of seniority, and our staff and postgraduate students include several nationalities and a wide age range. The University is committed to the Athena SWAN charter: an application for the institutional bronze award is being prepared and a new University full-time position has been appointed to support this initiative. All staff must complete a training programme in equality and diversity, with modules including Diversity in the Workplace, Disability, Stress in the Workplace, and A Manager's Guide to Stress.

Staff development: All staff undergo a formal annual Objective Setting and Review appraisal which is managed by the Division, and conducted by specifically trained Line Managers. Annual Objective Setting and Review evaluations assess achievement of the previous year's objectives and identify measurable targets for the coming year and are reviewed by senior staff. Learning needs are identified and used as the basis for individual personal development, with protected time for learning, for example by accessing relevant internal and external courses. Research staff are encouraged and supported to have a clear intended career path, and senior colleagues assist in reviewing and enabling their performance and progress.

c. II. Research students

The development of future leaders of bioscience and health research is a major strategic aim of the University of Dundee. The Unit contributes to this aim by competitive recruitment of highly qualified and motivated students for high-quality and robustly supervised projects. To achieve this, principal investigators (PIs) are encouraged to apply for internal and external funding, with current funding from the University MRC Doctoral Training Account, the Cross-Council Lifelong Health and Wellbeing programme; the Health Foundation Improvement Science PhD programme; and the MRC Farr@Dundee programme. Priority is given to students whose research aspirations are cognate with one of the existing research groups and the Unit's strategic programmes.

The Unit currently has 21 doctoral research students (11 full-time PhD; 8 part-time PhD; 2 MD). All senior staff are registered as PhD supervisors. They are supported by the University and Division in various ways including accreditation by CMDN and the pairing of new supervisors with experienced ones to help them gain skills and confidence. Each student registered for a higher degree is assigned a thesis monitoring committee, which ensures independent academic overview of their progress and provides a safety net in case of difficulties. These processes are led by the Division in line with the policies of the CMDN Standards and Governance Committee.

CMDN provides an extensive, professionally delivered generic skills programme for research students, including an annual student symposium where work is presented within a supportive environment. There is also an active, informal research student/early researcher club which provides peer support and a forum for informal discussion of students' research projects and ideas.

We are committed to building strength in clinical academic development. The Dundee Clinical Academic Track was created to take this goal forward by providing elite academic opportunities for young health professionals at all stages of training. It provides a focus for the development and coordination of opportunities and enables support for academic training pathways. PHS participates fully in this initiative and prioritises the development of research opportunities, including Vacation Studentships, Student Selected Study Components of the curriculum and the Dundee Academic Foundation Year Programme, for academically-oriented medical students. New ventures include student-led Discovering Research events, a medical student research society (Dundee Research and Academic Medicine Society), and a programme of vacation studentships funded from various sources (including PHS internal resources, Medical Research Society, and Wellcome Trust). **Guthrie** and **Sullivan** were instrumental in the creation of new opportunities for early career clinical academic training (GP Scottish Clinical Research Excellence Development Scheme posts; post-Certificate of Completion of Training Clinical Academic Fellowships) and we have made good use of these to support early career academics. This has been a fruitful approach: **Morales** and Santiago exemplify recent transitions from academic trainee to Clinical Academic Fellowship (CSO), **Grant** from research assistant to MRC Postdoctoral Fellowship to Lecturer, and **Marwick** from Clinical PhD Fellowship to tenure-track Senior Lecturer.

d. Income, infrastructure and facilities

Income.

Most of the Unit's income is derived from external research grants, of which 179 were awarded during the assessment period. Research income increased from £1.87M in 2008/9 to £3.32M in 2012/3, a total of £13,595,441 over the five academic years.

Income from specific bodies that fund health research was £3,985,365, i.e. £246,010/submitted staff FTE (£234,433/headcount). This includes £3,586,195 from the Chief Scientist Office (CSO) which was misallocated to BIS Research Councils in the HESA returns and therefore is not shown in the health research category in Ref4b (the remaining £399,170 in this category is correctly allocated income from the NIHR). Excluding the CSO income, BIS Research Council income for the period was £2,743,655 equating to £169,361/FTE (£161,391/headcount).

Several large and very large grants were secured from a range of national and international sources during the assessment period, often in collaboration with other centres of excellence. Dundee-led European and UK national examples include:

- **SUrrogate markers for Micro- and Macro-vascular hard endpoints for Innovative diabetes Tools** (SUMMIT; EU Innovative Medicines Initiative, €13M, £1.7M to University of Dundee); PI **Colhoun**), a collaboration between six of the major pharmaceutical companies and 14 academic research centres across Europe, has the aim of developing biomarkers of complications for diabetes.
- **Generation Scotland:** (CSO, £8.9M and the Scottish Funding Council, £3.8M; executive leadership by **Smith** in collaboration with the Universities of Aberdeen, Dundee, Edinburgh and Glasgow). **Smith** played a lead role in the development of this unique world-class resource for researching the genetics of health and illness, which has recruited >30,000 individuals, collected extensive phenotype/genotype data with consent for re-contact and on-going linkage

to routine NHS records, and already produced 20 original research papers in peer reviewed journals, including two in Nature Genetics.

- **The I2S2 trial** (MRC/NIHR £3.2M; UoD lead (£1.9M) **Williams**), Oxford-led multi-centre randomised controlled trial of iodine supplementation in extreme preterm infants, aims to determine whether such supplementation can improve neurodevelopmental outcome at two years of age.
- **Engaging with Older People in developing and designing Interventions for the management of Chronic pai**n (EOPIC; MRC, £1.2M; Chief Investigator **Smith** with the Universities of Aberdeen, Greenwich, Northumbria, Teesside) explores the self-management of chronic pain by older adults and the attitudes and approaches of GPs, primary care teams, pain clinics and older adults towards pain management in older age.
- **BodyWEight and physicaL activity** (BeWEL; MRC, £1.1M and ActWell: CSO, £221K; PI **Anderson**, with **Donnan** and **Steele**, in collaboration with Universities of Aberdeen, Stirling, Strathclyde and London (UCL) addresses the contribution of lifestyle and weight improvement to cancer prevention in adults at risk of developing colorectal adenomas.
- **Translational Research and Patient Safety in Europe** (TRANSFoRm; EU FP7 €7M; UoD lead (£315K) **Sullivan**) and **Electronic Health Records for Clinical Research** (EHR4CR; EU Innovative Medicines Initiative, €16M; UoD lead (£289K) **Sullivan**) are large international research collaborations developing innovative informatics to facilitate the use of electronic healthcare data, with Dundee leading key work packages in each.
- **Data Driven Quality Improvement in Primary care** (DQIP; CSO, £1M; **Guthrie**) is a randomised controlled trial of an intensive complex intervention to improve prescribing safety in primary care, complemented by the evaluation of a lower intensity intervention in the **Effective Feedback to Improve Primary care Prescribing Safety** project (EFIPPS, CSO, £225K; **Guthrie**), involving almost 300 (30%) Scottish general practices between them.

Individual researchers are supported by a range of personal fellowships; for example **Grant** (MRC, £400K); Baldie (CSO, £109K); Santiago (CSO, £233K); **Morales** (CSO, £241K). A number of standard grants from the MRC, NIHR, CSO and charities including the Wellcome Trust fund pump-priming projects, in preparation for further large grants or fellowship applications.

Infrastructure

A major re-structuring of the Medical School in 2011 created two bodies, the Medical Research Institute (MRI) and the Medical Education Institute. Each academic staff member was assigned to one of these, leading to an enhanced focus on research. The MRI provides a clear management structure, and streamlined policies and procedures, as well as opportunities for cross-disciplinary collaboration with other cognate areas such as cardiovascular and diabetes medicine, neurosciences, imaging and technology. The purpose built Mackenzie Building accommodates PHS on the Ninewells Hospital and Medical School Campus adjacent to the other MRI Divisions including the Division of Cancer Research led by **Steele**. It also houses the academic infrastructure for the Scottish School of Primary Care and the Scottish Primary Care Research Network. PHS is led by **Sullivan** and **Williams** supported by an executive group and a Divisional administrator, while human resources and finance support is provided by CMDN.

Core facilities

Health Informatics: The Health Informatics Centre (HIC) is a core research facility fully integrated with PHS and:

- exploits Tayside and Scotland's exceptional data resources and long tradition of excellence in eHealth informatics to support data linkage projects at scale for research groups
- manages a widely used research safe haven for the secure analysis of non-consented datasets
- writes bespoke software applications for research groups
- supports recruitment to clinical trials, with projects funded on a cost recovery basis

High quality datasets are vital to all aspects of our research and over the last two years, substantial internal investment by CMDN (£1.22M) has funded eight new programmers and the installation of enhanced high performance computing infrastructure, training and equipment. This investment has allowed us to expand the scope and usability of our unique range of longitudinal datasets combining routine health services data for the entire regional population with survey data on diet and other health behaviours, specialist clinical datasets for common diseases such as diabetes, coronary heart disease and heart failure and research cohorts with detailed additional phenotypic and genotypic data. The uses of these data include clinical, health behaviour, genetic and 'omic epidemiology, pharmacovigilance and drug safety, the development of predictive and diagnostic algorithms for stratified medicine, and examination of variation in healthcare quality and safety.

The inward investment by CMDN has allowed us to leverage substantial further external support. In 2012 the School of Medicine (Morris, Macdonald (UoA1), and **Sullivan**) led a bid on behalf of six Scottish centres and a UK wide consortium to the MRC and nine other funders resulting in £19M to fund the establishment of four Health Informatics Research Centres located in Scotland (Lead Institution University of Dundee), Wales, London and Manchester. A further £20M of capital funding from the MRC to create a single UK institute (the 'Farr Institute for Health Informatics Research') has been coordinated from Dundee in 2013 (Morris) and will be achieved through the development of this existing investment supplemented with leveraged funding from the Scottish Government and NHS National Services Scotland. The Scottish consortium has raised £5M of capital funding from the MRC and an additional £2.5M of leveraged funds to create Farr@Scotland (coordinated by the School of Medicine; Morris, **Sullivan**, **Colhoun**). We will use this investment to establish a vibrant interdisciplinary research centre, Farr@Dundee, including HIC as a core service and based in new accommodation on the Ninewells Campus by the end of 2013.

These resources have allowed us to deliver a number of ground-breaking studies; for example, Generation Scotland was supported as a priority by PHS with the appointment of a clinical senior lecturer and a team of research nurses. Dedicated informatics support from HIC, including volunteer recruitment and management systems, data storage and access solutions, and linkage of individual research data to routine NHS datasets including prescribing and hospital admissions, has provided the template for development of other similar research support. The additional investment described above will lead to a major step change in capability for our programmes of population based research and pharmacoepidemiology.

Clinical research support: The Tayside Medical Science Centre (TASC; www.tasc-research.org) manages the >£7M per annum that goes into developing and supporting our excellent patient-oriented research infrastructure to facilitate research for all health professionals in Tayside and promotes a strong culture of patient-oriented research within the NHS. TASC was established in January 2010, is led by Connell and Belch (UoA1), and oversees the Clinical Research Centre, Clinical Imaging Centre, Tayside Clinical Trials Unit (TCTU), Tayside Bioresource and Tayside Tissue Bank as well as providing a supportive governance framework for all clinical research carried out in Dundee. The TASC R&D office manages research advice, project registration, University of Dundee & NHS Support cost calculation at funding application stage, generic and local review of research governance issues, contracts, site agreements, R&D approval, pharmacovigilance, QA and GCP monitoring. Within TASC, PHS members lead the Dundee Epidemiology and Biostatistics Unit (Director: **Donnan**) that provides statistical support across CMDN, and leadership to TCTU (Co-Director: **Donnan**). All clinical trials expertise in Tayside is co-ordinated by TCTU, which supervises the Tayside Clinical Research Facilities, first-class areas for the conduct of patient-based research and clinical trials. TCTU supports the development and management of the community-based and cluster randomised trials in which our researchers specialise, as well as clinical trials of investigational medicinal products, and offers scientific, funding, technical and computing expertise from conception of the trial to analysis and reporting.

e. Collaboration and contribution to the discipline or research base

Collaboration

We collaborate extensively with local, national and international colleagues in our research activity. Within the University, our three areas of research overlap with those of the other Divisions of MRI

and the Centre for Medical Education and we have strong links to the other two schools in CMDN. In particular, our strong link with the School of Nursing is mediated via the Social Dimensions of Health Institute, a joint institute of the Universities of Dundee and St Andrews. We benefit from very close links with the NHS in Tayside and other Scottish Health Boards, and through our leadership of the Scottish School of Primary Care (**Sullivan**). The development of the Tayside Academic Health Sciences Network, which will bring much closer alignment of the University with NHS Tayside, and is supported by a pump priming grant from the Scottish Government, will facilitate our research, particularly in relation to Health Improvement. Beyond CMDN, we are developing shared Safe Haven and high performance computing informatics infrastructure with the College of Life Sciences for the analysis of very large routine and biological datasets. Nationally, we work in partnership with other academic centres of primary care and public health in Scotland and the UK. Internationally, we lead several EU grants and are major partners on others. Examples of collaborative research, in which we are leaders or major partners, include the large programmes mentioned above (SUMMIT, Generation Scotland, I2S2, EOPIC, TRANSFoRm/EHR4CR, DQIP, EFIPPS and GP-POLY) as well as:

- Diabetes programmes, including: The Scottish Diabetes Research Network Epidemiology Group Programme, a network of researchers across Scotland focused on utilising the national diabetes dataset linked to other data (**Colhoun**, **Guthrie**); the Scottish Diabetes Research Network Type 1 Bioresource, a Scotland-wide project establishing a bioresource for research and related data for utilisation (CSO and Diabetes UK; PI **Colhoun**); and Diabetes and Cancer Research Collaboration, an EU-wide group of researchers funded in part by the European Foundation for the Study of Diabetes (**Colhoun** leading on development of a meta-analysis platform for combining the data across centres in a uniform way).
- The Scottish Health Informatics Programme (SHIP) and the MRC Farr Institute (Farr@Dundee) where Unit investigators lead significant elements of each programme and lead on infrastructure information governance and pharmacoepidemiology (**Sullivan**, **Colhoun**).
- Applied work with the NHS including policy development and implementation in prescribing safety (**Guthrie**) and antibiotic stewardship (**Davey**), improving clinical guidelines to better account for multimorbidity (**Guthrie**), chronic pain (**Smith**), nutrition (**Anderson**) and bowel cancer screening. **Steele** initially chaired the UK Colorectal Screening Executive Committee that oversaw the piloting and introduction of the National Bowel Cancer Screening Programme, and is now the Clinical Director of the Scottish Bowel Screening Programme.

The Scottish School of Public Health Research, a Scottish Funding Council initiative aiming to create world-class public health research collaborations across Scotland, has four main themes addressing national priority areas in Scotland including one on alcohol which is led from Dundee (**Crombie**). We currently lead the seven Scottish Universities undertaking primary care research in Scotland (the Scottish School of Primary Care; Aberdeen, Dundee, Edinburgh, Glasgow, Robert Gordon, Stirling and St Andrews) and host the Scottish Primary Care Research Network. Dundee leadership of this network has facilitated successful research across Scotland (e.g. the Bell's Palsy study; **Sullivan**, **Donnan**, **Smith**) and contributed to UK collaborative studies, supporting 50-60 studies annually.

Wider influence and contributions to the discipline or research base

We support contributions, jointly and individually, to national and international initiatives, based on our research and clinical/academic expertise. For example:

- **Anderson** chairs the MRC National Prevention Research Initiative Scientific Committee, chaired the Health Research Board (Ireland) Health Services Research Awards Committee in 2012, and is a member of the Scottish Government Chief Scientist Office (SG CSO) Health Services and Population Health Research Committee. She regularly provides national policy advice, including as a member of the UK Scientific Advisory Committee on Nutrition and as a workstream lead for the SG National Food and Drink policy. She has been a member of two nutrition-focused NICE Guideline Development Groups and the SG Maternal Nutrition Intervention Working Group. She is a member of the International Agency for Research on Cancer working group on diet, obesity alcohol, and physical activity, for the European Code Against Cancer review panel.

- **Colhoun** was associate editor of *Diabetologia* from 2008-2011. She sits on the Access Committee for the Centre for Longitudinal Studies Cohorts (Wellcome Trust, MRC) and has acted as expert advisor to MHRA drug safety reviews and as external expert to Wellcome Trust Strategic Awards reviews.
- **Crombie** leads the Alcohol Research Group of the Scottish School of Public Health Research. He referees regularly for NIHR PHR and HTA programmes.
- **Davey** is Education Secretary of the British Society for Antimicrobial Chemotherapy and was President of this Society from 2006-2009. He is a member of the Scottish Antimicrobial Prescribing Group, which is part of the Scottish Medicines Consortium.
- **Donnan** is a member of the New Drugs Committee of the Scottish Medicines Consortium.
- **Guthrie** is a member of several funding boards including the RCGP Scientific Foundation Board, the CSO Clinical Academic Fellowship panel, the Health Research Board of Ireland and the NIHR HTA Primary Care Interventions Panel. He is a member of the NICE Quality and Outcomes Framework Indicators Advisory Committee where he chairs the Methods, Retirement, Thresholds and Review sub-group; the NHS Scotland National Clinical Data Advisory Group; the Scottish Patient Safety Programme in Primary Care Core Group, and several NHS Scotland working parties relating to quality improvement and polypharmacy.
- **Smith** chaired the Scottish Government/NHS Chronic Pain Steering Group, and continues to chair its research subgroup. He is Treasurer of the Neuropathic Pain Special Interest Group, International Association for the Study of Pain, and sits on the WHO ICD-11 Task Force for the Classification of Pain Diseases. He was on the NICE Guideline Development Group for Neuropathic Pain (2009-2011), and for the SIGN Guidelines for Chronic Pain (2011 to present). He is on research awards panels including Arthritis Research UK (Fellowships), and the German Federal Ministry of Education and Research (Healthcare Research). He sits on the Access Committee for Centre for Longitudinal Studies Cohorts (Wellcome Trust, MRC).
- **Steele** has, over the past five years, advised the Health Departments of Australia, Ireland, the Netherlands, Portugal, Spain and Hong Kong on the introduction of Bowel Cancer Screening. He is a council member of the Royal College of Surgeons of Edinburgh where he chairs the College Research Committee and the Standards Committee and is Editor of *The Surgeon*. He currently chairs the CSO Health Services and Population Health Research Committee. He was recently elected as President of the Association of Coloproctology of Great Britain and Ireland. His other contributions include Chair of the Screening and Prevention Subgroup of the NCRI Colorectal Clinical Studies Group, recent past Chair of the SIGN Colorectal Cancer Guideline Development Group, member of the Intercollegiate Specialty Board in General Surgery and Chair of the Board of Directors of the Scottish Cancer Foundation.
- **Sullivan** chaired the UK Heads of Department group (Society for Academic Primary Care), the RCGP Research Paper of the Year committee and several Trial Steering Committees. He is the Director of Scottish School of Primary Care and has acted as an advisor to the Irish Primary Care Research Network and the Australian Primary Health Care Research Initiative 2010. He is a Senior Research Fellow of the International Prevention Research Initiative, Lyon, and a member of the editorial board of *Informatics in Primary Care*, the *Health Informatics Journal*, *Decision Making* and *BMC Health Services Research*. He served as a member of the Office for Strategic Co-ordination of Health Research eHealth Records Board and was a member of the external reference group of the Research for Patient Benefit Connecting for Health work programme as well as several UK, Irish and Australian Grant awarding bodies.
- **Williams** is a member of the UK Standing Committee on Screening for congenital hypothyroidism: Joint Congenital Hypothyroidism Expert Group and a member of the Preterm Repeat Policy Implementation Group, UK (sub-group of UK Standing Committee on Screening for congenital hypothyroidism).