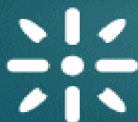

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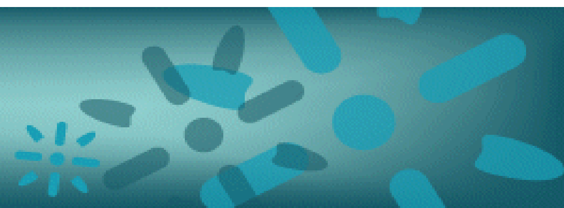

# National Primary Care Research and Development Centre

## Final Report: 2005-2010

**January 2010**


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# Lay Summary

The *National Primary Care Research and Development Centre* (NPCRDC) was established by the Department of Health in 1995 to help improve primary health care in England. The Centre's aims are to-

- Deliver high quality, policy-relevant research to inform the development of primary health care.
- Disseminate research findings to promote the development of evidence-based primary health care.
- Develop research capacity in primary care through the provision of support, training, and staff development.

In its most recent contract period (2005 to 2010 inclusive), the Centre sought to advance primary health care through research that aimed to:-

- Promote patient self-care
- Improve the quality of primary care
- Improve primary health care organisation and governance
- Make better use of available human resources

This report summarises the Centre's success in delivering on these aims and objectives.

NPCRDC has established an international reputation for leading edge research in primary health care. The quality of this research has been recognised in England by top scores in the national research assessment exercises (RAE) of 2001 and 2008; and through membership in the National Institute of Health Research National School for Primary Care Research which brings together the top-rated university departments of primary care in England.

NPCRDC has actively disseminated evidence from its research through: high quality scientific publications; newsletters and briefing papers written specifically for frontline decision-makers in the NHS; and conferences and presentations to both academic and clinical audiences - producing nearly 600 scholarly outputs in the period 2005-10.

Evidence from our research has had a significant impact on policy and practice in primary health care. Key achievements include the following:

- Managing public demand for more and better health care is an enduring challenge for the NHS. Early NPCRDC research showed that the NHS was itself a significant contributor to rising demand by inadvertently fostering a culture of dependency on

health professionals among patients and carers. Subsequent research focused on the development of better systems for supporting patient self-care, culminating in the development of the WISE model which gives prominence to lay methods of decision-making and self-care. The team showed that initiatives intended to support self-care which are based on short training courses for patients (such as the national Expert Patient Programme, EPP) are not associated with significant cost savings. In contrast, initiatives (such as WISE) that make use of the resources which patients bring with them to the consultation offer greater potential for cost savings and improved patient well-being. The WISE approach has received international acclaim for its innovative approach to personalising care for patients and managing public demand for health services.

- NPCRDC developed pragmatic methods for assessing the quality of care in general practice and developing ways to improve that quality. The findings laid the foundation for a pay-for-performance system in general practice (known as the Quality and Outcomes Framework or QOF) which was introduced into the NHS in 2004. NPCRDC former Director - Prof Martin Roland - was awarded a CBE in 2003 for his contribution to medicine in this field. NPCRDC went on the evaluate the impact of QOF on the quality and outcomes of care for patients, publishing this research in the world's leading medical journals and becoming one of the foremost authorities internationally on pay-for-performance in primary care. Responsibility for the development and testing of new QOF indicators in England remains with NPCRDC, working under contract to NICE.

- Early NPCRDC research showed that patients had little power or influence over decisions about how the NHS is run. This is because patients and the public do not have sufficient power or influence to change the views of managers and clinicians whose performance is judged by factors unrelated to meeting people's demands. To increase patient 'voice', NPCRDC developed the first NHS-approved national survey questionnaire to measure patients' experience of primary care in England – the General Practice Assessment Scale (GPAS) – and its successors - GPAQ (General Practice Assessment Questionnaire) and GPPS (General Practice Patient Survey). The instruments have been used widely in the NHS to monitor and improve the quality of care for patients; and by researchers to investigate the impact of policy reforms on patient experience.

- Fairness in the allocation of resources is a big challenge for state-funded healthcare systems such as the NHS. NPCRDC has played a vital role in describing the nature of inequalities in primary health care provision and developing possible solutions. The team have contributed to the development of fairer ways to distribute funds for primary health care in England (through resource allocation formulae) and evaluated how well the NHS uses that money to buy the services which patients want and need (a process known as commissioning). The findings have helped to shape current government policy in showing that commissioning by GPs is likely to be more

effective than commissioning by Primary Care Trusts (PCTs) in securing improvements in NHS quality and efficiency. In addition NPCRDC showed that inequalities in the distribution of GPs underlie inequalities in health care provision, and demonstrated how financial incentives and job redesign can be used to enhance the numbers of GPs willing to work in areas that have too few.

- NPCRDC workforce research has shown that shifting care from GPs to nurses, community pharmacists and other allied health professionals can be a useful strategy for improving patients' access to health services and quality of care, but may not reduce costs as doctor substitutes are often less productive/efficient. The findings have helped to inform workforce policy in the UK, France, Australia, New Zealand and Canada

NPCRDC has trained people at Masters, Doctoral, and Postdoctoral level to produce a substantial cadre of people able to undertake high quality health services research in primary care and related fields. The number of students graduating from our Masters level courses has increased year on year rising from 47 in 2009 to 71 in 2010. Fifty-five students have successfully completed doctoral degrees (PhD, MD, MPhil) supported by NPCRDC. Our two postdoctoral fellows successfully moved forward to obtain further prestigious training awards. Seven of our staff members have been promoted to professorial positions.

Upon closure of NPCRDC in December 2010, the knowledge and expertise developed by the Centre will be taken forward through the "Health Sciences" group of the University of Manchester. This group, founded in January 2010, brings Manchester's primary care researchers, including those in NPCRDC, together with experts in health research methodology (economics, statistics, informatics) and health psychology to form a powerful new unit dedicated to improving health care policy and practice through high quality research. Working collaboratively under its new head, Professor Anne Rogers, the Health Sciences group has already secured major research contracts that will sustain and grow its programmes of work for many years into the future.

# Executive Summary

The *National Primary Care Research and Development Centre* (NPCRDC) was established by the Department of Health in 1995 to inform the development of policy and practice in primary health care in England. The Centre's aims are to-

- Deliver high quality, policy-relevant research to inform the development of primary health care.
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- Develop research capacity in primary care through the provision of support, training, and staff development.

In its most recent contract period (2005 to 2010 inclusive), the Centre sought to advance primary health care through research that aimed to:-

- Promote patient self-care
- Improve the quality of primary care
- Improve primary health care organisation and governance
- Make better use of available human resources

This report summarises the Centre's success in delivering on these aims and objectives.

NPCRDC has established an international reputation for leading edge research in primary health care. The quality of this research has been recognised by top scores in successive research assessment exercises (RAE). In 2001, primary care in Manchester achieved the highest 5* grade, and in the 2008 RAE, 80% of our work was assessed as 3* or 4* (internationally excellent or world leading). This achievement has been recognised through membership in the NIHR National School for Primary Care Research which brings together the top-rated university departments of primary care in England.

NPCRDC has actively disseminated evidence from its research through: high quality scientific publications; newsletters and briefing papers written specifically for frontline decision-makers in the NHS; and conferences and presentations to both academic and professional audiences - producing nearly 600 scholarly outputs in the period 2005-10.

Evidence from our research has had a significant impact on policy and practice in primary health care. Key achievements include the following:

- Managing demand in the NHS remains an enduring problem. Early NPCRDC research was instrumental in showing that the NHS was itself a significant contributor to rising demand by inadvertently fostering a culture of dependency on professionals among patients and carers. Subsequent research focused on the development of better systems for supporting patient self-management, culminating in the development of the WISE model which gives prominence to lay methods of decision-making and self-care. The team showed that interventions to support self-care which are based on short training courses for patients (such as the national Expert Patient Programme, EPP) are not associated with significant cost savings. In contrast, interventions (such as WISE) that make use of the resources which patients bring with them to the consultation offer greater potential for reducing utilisation and cost. The WISE approach has received international acclaim for its innovative approach to care personalisation and demand management.

- NPCRDC developed pragmatic methods for assessing the quality of care in general practice, measured variations in quality, and investigated the impact on quality of paying GPs in different ways. The findings laid the foundation for the Quality and Outcomes Framework (QOF) of the national GP contract introduced into the NHS in 2004. NPCRDC former Director - Prof Martin Roland - was awarded a CBE in 2003 for his contribution to medicine in this field. NPCRDC went on the evaluate the impact of QOF on the quality and outcomes of care for patients, publishing this research in the world's leading medical journals (NEJM, BMJ) and becoming one of the foremost authorities internationally on pay-for-performance in primary care. Responsibility for the development and testing of new QOF indicators in England remains with NPCRDC, working under contract to NICE.

- Early NPCRDC research into patient 'voice' in NHS governance showed that users have little influence. This is because flawed policies assume that participation in committees, or mandatory public consultations, will give patients and the public sufficient power to counter professional interests or influence managers who face imperatives unrelated to meeting users' demands. To increase patient 'voice', NPCRDC developed the first NHS-approved national survey questionnaire to measure patients' experience of primary care in England – the General Practice Assessment Scale (GPAS) – and its successors - GPAQ (General Practice Assessment Questionnaire) and GPPS (General Practice Patient Survey). The instruments have been used widely in the NHS to monitor and improve the quality of care for patients; and by researchers to investigate the impact of policy reforms on patient experience.

- Fairness in the allocation of resources is a big challenge for state-funded healthcare systems such as the NHS. NPCRDC has played a vital role in elucidating the nature of inequalities in primary care provision and developing possible solutions. The team have contributed to the development of fairer resource allocation formulae for primary care in England and evaluated how effectively the NHS deploys those

- NPCRDC workforce research has shown that shifting care from GPs to nurses, community pharmacists and other allied health professionals is a plausible strategy for enhancing patient access and the quality of care, but may not reduce costs as doctor substitutes are often less productive/efficient. The findings have helped shape workforce policy in the UK, France, Australia, New Zealand and Canada

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Upon closure of NPCRDC in December 2010, the knowledge and expertise developed by the research group will be taken forward through the "Health Sciences" group of the University of Manchester. This group, founded in January 2010, brings Manchester's primary care researchers, including those in NPCRDC, together with experts in health research methodology (economics, statistics, informatics) and health psychology to form a powerful new unit dedicated to improving health care policy and practice through high quality research. Working collaboratively under its new head, Professor Anne Rogers, the Health Sciences group has already secured major research contracts that will sustain and grow its programmes of work for many years into the future.

# Chapter 1. Introduction

Over the past two decades the National Health Service (NHS) has undergone radical reform as successive governments have tackled the problem of modernising services to improve effectiveness, efficiency and responsiveness to users. While these initiatives have varied widely in nature, all have stressed the centrality of primary care. Primary care plays a pivotal role in providing first contact, preventive, curative and palliative care for most people seeking health advice or treatment. It is able to provide continuity of care and it largely mediates access to high cost hospital care. Although primary care has undergone radical organisational reform – from GP fund-holding in the 1990s to the Primary Care Trusts of the 2000s and now to proposed GP Commissioning Consortia in the 2010s – it has maintained a pivotal role in the NHS, controlling budgets for defined populations and charged with improving the health of the population and reducing inequalities.

## Aims

The Department of Health (DH) established the *National Primary Care Research and Development Centre* (NPCRDC) in 1995 to inform the development of policy and practice in primary health care in England. The Centre's aims were to-

- Deliver high quality, policy-relevant research to inform the development of primary health care.
- Disseminate research findings to promote the development of evidence-based primary health care.
- Develop research capacity in primary care through the provision of support, training, and staff development.

## Objectives

NPCRDC was constituted in 1995 as a large multi-disciplinary centre with a ten year programme grant that was subsequently extended by six years, ending December 2010. The intention was to build and maintain the critical mass needed to sustain high quality multi-disciplinary research, undertake large scale and longitudinal projects, and so build over time a coherent body of knowledge able to support and guide the development of primary health care.

To realise this intention, the Centre has focused its research on selected 'themes' which best meet the following criteria:

- Research which addresses problems of enduring importance to the NHS.
- Research which is academically excellent in that it is-
  - Driven by theory
  - Gives priority to causation over description
  - Employs rigorous, leading-edge methods of investigation
  - Exploits the potential of inter-disciplinary working
- Research where the Centre has the potential to be an international leader in the field by exploiting the particular knowledge, skills and interests of its staff.

In its most recent contract period (2005 to 2010 inclusive), the Centre sought to advance primary health care through research that aimed to:-

- Promote patient self-care (chapter 2)
- Improve the quality of primary care (chapter 3)
- Improve primary health care organisation and governance (chapter 4)
- Make better use of available human resources (chapter 5)

## Structure of the report

This report shows how the Centre has delivered on its aims and objectives over the past 6 years (2005-2010 inclusive). Chapters 2 to 5 summarise the major findings of the research in each theme, their impact on policy and practice in the NHS, and key publications arising from the work. Subsequent chapters describe our achievements in building research capacity (chapter 6) and in disseminating knowledge gained from the research (chapter 7). The final chapter (chapter 8) looks to the future upon closure of NPCRDC.

# Chapter 2. Self-management

## Introduction

Self–management is of strategic relevance to the future development of effective chronic disease management within and outside of health service delivery. It has informed both the National Service Frameworks and the agenda aimed at involving the public and patients in health care. The overarching question for the self management programme has been: What can the NHS do to promote self-management?

## Synopsis of early research

Our early work aimed to gain a better understanding of the contemporary influences that shape the relationship between need and demand for care, and how primary care can be made more accessible and appropriate. The research undertaken drew attention to the diversity of help-seeking activities undertaken by individuals and highlighted the need to develop models of utilisation capable of acknowledging this diversity. We showed also that people's utilisation of NHS services is shaped by past experience of using a range of services and their own strategies for managing health and illness. Collectively our work indicated that, to improve service access and appropriateness, there was a need to:

- Acknowledge that knowledge, culture, attitudes, experience, and healthcare organisation are the key determinants of when, why, and how people access formal health care.
- Encourage some demand and promote alternative ways of managing other demand by building on the ways in which people already take responsibility for managing their health and illness, and base the design of new services on knowledge of how people's experience of services influences subsequent service use and management of health problems.
- Develop and evaluate interventions which maximise the self-management capabilities of individuals and local communities, and for this to be reinforced and reflected in service delivery and professional models of working.

Our project *Population Health Need and Demand* identified the patterns and processes of primary care use across the range of health problems presented within primary care and suggested the need to offer more graduated access to the health care system, through a more eclectic range of primary care services designed to meet differing demand and levels of need, and to harness the range of self- care activities undertaken

by people to more formal sources of care in constructing a whole systems approach to managing demand in primary care.

We assessed the musculoskeletal health needs of adults from ethnic minority communities in Greater Manchester originating from South Asian (India, Pakistan, Bangladesh and the Caribbean (African Caribbean). Several individual joint areas had a statistically significantly higher prevalence of reported pain in ethnic minority populations than amongst white people; for example shoulder pain among African Caribbean, Indian and Pakistani people. Ethnic minorities used general practice services more frequently than their white counterparts but there were indications of reduced use in relation to need at high levels of morbidity. Frequency of consultations was linked to high rates of pain and unemployment. The qualitative data indicated that that the way in which pain was expressed amongst some South Asian women respondents suggested the presence of unmet health and social need, which extended beyond a focus on musculoskeletal symptoms.

In 2000-2003 we undertook a study in another rapidly changing field - the Internet which was seen as holding the potential to provide access to new types of health care and information at the interface with primary care. By setting up an experimental clinic in an economically depressed area we found that there is likely to be difficulty in engaging people with the new opportunities the Internet offers. We also evaluated the potential for walk-in centres to manage demand for primary care.

Our evolving work on self management during this early period continued with two trials on how to support patients to manage their own conditions. We carried out randomised controlled trials (RCTs) in 2005/6 and looked at the application of guided self management for Irritable Bowel Syndrome (IBS) and Inflammatory Bowel Disease (IBD). The results suggested that patients reduced their use of health services and felt that their health had improved. Our research at this time also involved the development of self-help resources in the form of self-help manuals for people with gastro- intestinal and mental health problems which we subsequently evaluated.[E.g. 155,157]

Between 2005 and 2006, we completed an extensive *literature review on patient choice,* funded by SDO and led by a colleague at Manchester Business School.[50,342] The literature showed that, although patients wanted to be treated as consumers of health care with good access to information about treatment options and an involvement in decision making, how far they were actually able to behave as consumers depended on factors such as the severity of the illness, the nature of the procedure involved and individual circumstances. We found that most severely ill patients facing complex treatment decisions preferred decisions to be made on their behalf by a well-informed and trusted health professional. We found that there was little demand for choice among NHS patients unless local services were very poor, and introducing choice tended to increase inequalities. This was especially true unless policies were specifically introduced to enable choices to be made by groups in society who were less likely to take advantage of choices on offer. There is no evidence that giving patients greater

choice will, of itself, improve the quality of their care. Some studies suggest that increasing choice may result in a deterioration in the quality and cost-effectiveness of services.

## Synopsis of research 2005-10

Over this six year period we developed our conceptual approach to self care support - WISE (Whole System Informing Self management Engagement). Our work covered three key areas:

- evaluating the WISE approach to self management,
- evaluating policy initiatives together with their impact on inequalities,
- evaluating technological innovations for long term condition management

Self-management and outcomes in chronic conditions

The WISE approach is based on the idea that effective self management interventions need to operate across multiple levels.[175,176,199,261,282] It takes into consideration patients own lay practices and knowledge, the way in which professionals negotiate and interact with patients, the resources available to patients to manage their conditions and the organisational and access arrangements of health services. We have evaluated this approach using a range of methods.

- *Exploratory trial of the WISE model in primary care.* This initially involved an exploratory trial and qualitative research and was followed by a…
- *Definitive RCT with cost effectiveness study*. The intervention incorporated insights from a literature review, current training developments and our previous trials and qualitative analyses (undertaken in the previous period). This research enabled us to build on these, refine our existing WISE approach, test its delivery in primary care and provided a preliminary assessment of its acceptability, workability and effectiveness in changing the process of self management support delivered by professionals, supported by the general practice environments. Engaging those most likely to benefit from self-care support and engaging with the needs of those living in adverse or socially disadvantaged situations has been a priority in our ongoing work.

The Expert Patients Programme

In 2007 we published findings from our national evaluation of The Expert Patients Programme. [1,19,262,207,398] The programme included the national ‘roll out’ of lay-led generic courses which aimed to improve patients' self care skills for people with a wide range of self-defined long-term conditions. We conducted a two-arm pragmatic randomised

controlled trial with waiting list control in community settings in England. People who had immediate access to the course reported considerably greater self-efficacy (confidence in ability to undertake tasks or health related actions) and higher energy at 6-month follow-up. The EPP programme was found to be cost-effective. However there were no reported statistically significant reductions in people's routine use of health services over the same time period. Using mixed qualitative methods we found that some expectations and problems were not dealt with because the self-care skills training programme prioritised improvement of self-efficacy and did not engage with patients' material and social needs. [477] Attention to people's self-defined needs coupled to support from host organisations (e.g. voluntary organisations) might be as or more important in improving self-management than the structured content of chronic disease self-management programmes.

Online and new technologies for chronic illness management

The Department of Health had indicated that technology should be used in a variety of ways to help people with long-term conditions care for themselves. A growing focus for our research therefore centred on how patients use new technologies to support them in managing their long term conditions. Over recent years there has been a proliferation of online support groups and chat rooms and more people are now using new technology to find information about chronic health problems. We studied the online version of the EPP. Eleven groups of participants were invited to post discussions, using free text postings, to online discussion boards, about specific problems they faced.[475] The data have been analysed using content and discourse analysis techniques. We looked at how group members formed supportive ties and the roles and functions that online tutors played. Preliminary analysis showed the potential for online self-management training to generate supportive 'virtual' networks with the capacity for influencing positive self-management actions. Online tutors seemingly performed both a facilitative and monitoring role in online self management support. The need to connect these new developments to existing NHS services is a finding that has fed into our subsequent research (e.g. WSD below)

Lay health trainers: exploratory randomised controlled trial

We contributed to a feasibility study of the effectiveness of lay health training advice to individuals from deprived communities at risk of coronary heart disease. The project aimed to develop and evaluate a training programme for Lay Health Trainers and to explore the feasibility of testing the effectiveness of the intervention in patients who received advice and support from Lay Health over a 6 month period. Patients and Lay Health Trainers were recruited from the same communities and thus shared characteristics such as demography, life experiences, attitudes and knowledge/perceptions of the local area.[63]

Whole System Demonstrator Sites Pilot Evaluation: evaluating a new policy initiative

Multidisciplinary teams at PCT and Local Authority level with an established record of joint health and social care working have been designated as Whole System Demonstrator (WSD) sites and are implementing integrated care and other innovations as part of a whole systems redesign. Whole systems redesign is being supported through advanced assistive technology (AAT:Telecare and Telehealth) for individuals with long-term conditions (LTCs) and/or complex health and social care needs. The self management group formed part of a multicentre team of researchers (University College London, Imperial College, London School of Economics, Kings Fund and Oxford University) who evaluated the effectiveness of AAT to whole systems care for people with social care needs, and people with long term conditions (health failure, diabetes and chronic obstructive airways disease). The study funded by the Department of Health used a randomised controlled trial design and included a qualitative study of the adaptation and integration of patient / carers to this new form of managing long term conditions.

A key component of the exploratory trial was to gain greater understanding about the underlying mechanisms relating to the success (or lack) of the LHT intervention, & the patient-LHT relationship and factors associated with patient involvement and participation in this type of intervention.

In another project undertaken with Newcastle and Glasgow Universities we looked at the way in which patients are receptive to and integrate new devices for monitoring aspects of their condition. NPCRDC contributed a meta-synthesis review and a work package, which focused on the ways in which patient integrate tele-health devices into their lives.[345] Little was known about how people experience, understand and negotiate the transfer of technologies into their own homes. The purpose of this work-package was to critically examine the ways that telecare systems are incorporated into the life-world of patients and carers and the factors that promote or inhibit integration. Based on our previous work about self-care we sought to examine how telecare impacts on existing methods of coping, self-care and the development of expertise; to investigate how telecare shapes and transforms relationships between patients and professionals; to explore the social impact of telecare on patients/carers in terms of privacy, control, security and identity construction; to examine patients' and carers' perceptions of their preparation and support in relation to using telecare systems, and to evaluate patients' and carers' views of telecare systems compared to traditional ways of monitoring illness. The outcome of this work-package was an understanding from the patient's and carer's perspectives of the factors that inhibit or promote the integration of telecare into their lives and the self-management of their condition. This work-package itself is an important contribution to knowledge - there are few studies that have sought to understand (rather than evaluate) the impact of such technologies in their home contexts. We found that devising and introducing new systems needs to take account of how individuals currently manage conditions and the ways that they adapt to their chronic illness. Understanding the fit between the everyday routines of service users and

technologies in the home is essential if uptake and use of telecare is to develop. While professionals and service suppliers sought policy direction and resources, focusing on a service-centred model of telecare, patients and carers were already using these systems in unexpected ways.

## Key impacts on policy and practice

- Developed and published guidebooks on self-management which we have used in our trials and are used nationally in the NHS *Expert Patients Programme.*
- Developed training for primary care professionals and tools for patient engagement (PRISMS) which are being used nationally as well as internationally.
- Developed an implementable programme for comprehensive self care support in primary care.
- Research on the *Expert Patient Programme* informed subsequent government policy in the White Paper, *Our health, Our care, Our say.*
- Research on the integration of telecare into patients' lives contributed to the evaluation of the Whole Systems Demonstrator sites.
- Developed understanding of the need to engage community context, relationships resources and networks in looking to improve equity and chronic illness management of patients.

## Three key publications

1. Rogers A, Entwistle, V, Pencheon D. (1998) A patient led NHS: managing demand at the interface between lay and primary care. *British Medical Journal 316*, 13th June, 1816-19.
2. Kennedy A, Rogers A, Bower P. (2007) Support for self care for patients with chronic disease. *British Medical Journal 335*, November, 968-970.
3. Kennedy A, Reeves D, Bower P, Lee V, Middleton E, Richardson G, Gardner C, Gately C, Rogers A. (2007) The effectiveness and cost effectiveness of a national lay led self care support programme for patients with long-term conditions: a pragmatic randomised controlled trial. *Journal of Epidemiology and Community Health 6*, 254-261.

# Chapter 3. Quality

## Introduction

Our overarching aim has been is to combine a clinical perspective with theoretically informed applied social science to conduct research on quality of care which has an impact on primary care policy at national and international levels.

Our programme was specifically designed to inform and evaluate policymaking in the NHS.

Earlier work on health inequalities was expanded and merged with the quality programme.

Our specific objectives have been -

- to develop methods of measuring the quality of primary care in the NHS
- to use those methods to assess variations in quality, and
- to evaluate ways of improving the quality of care.
- to evaluate the impact of the new GP contract on quality of care
- to evaluate the place of public release of information on quality of care
- to evaluate ways of addressing patient safety in primary care.

We have also developed long-term relationships with leading international centres. Campbell and Roland have continued their highly productive collaborations with the RAND Corporation in California and with the Centre for Quality of Care Research at the University of Nijmegen. We have worked with EQUIP's research groups in Europe, and the Health Institute, New England Medical Centre, Boston developing measures of quality of care.

## Synopsis of early research

Public, political and professional concern about the quality of care in the NHS increased from the mid 1990s. Through research and dissemination, we sought to inform and guide developments in this area by-

- developing conceptual frameworks for quality assessment and improvement;

- devising methods to measure the quality of care;
- using those methods to assess variations in quality; and
- identifying and evaluating ways to improve the quality of care.

Informed by a simple conceptual model of quality of care (Campbell et al 2000), we used rigorous methods to combine evidence with expert opinion to develop measures of clinical effectiveness that can be applied to patient medical records (Marshall et al 2002). Valid and reliable indicators of quality were produced for a range of common clinical conditions and disseminated to the NHS. We additionally produced a questionnaire (Ramsay et al 2000) to capture patients' valuations of access to care and the interpersonal aspects of care (www.gpaq.info).

Through systematic review of the literature (Seddon et al 2001) and a large scale survey of English general practices we demonstrated that wide variation exists in the quality of primary care, and that different types of practice perform better with regard to different aspects of care.

Two studies – a longitudinal case-control study of first wave Personal Medical Service (PMS) pilots[34] and a case study of an ambitious quality improvement programme in Kent (Spooner et al 2001) - both demonstrated the ability of targeted additional investment to produce rapid improvements to the quality of general practice care. This work, together with our production of quality indicators, contributed to the development of a new General Practitioner (GP) contract which linked financial incentives to performance in order to generate improvements in the quality of general practice care (the Quality and Outcomes Framework).

A second strategy for quality improvement in the NHS is the public release of health care performance information. Our research showed that strategies are more likely to succeed if they are targeted at health care organisations rather than patients, since this is where action is most likely to be taken to address problems (Marshall et al 2000).

Avoiding harm to patients through medical intervention is a third strategy underpinning quality improvement in the NHS. We initiated a new strand of work on patient safety in primary care. This included the development of methods to assess safety culture, and co-foundation of an international network (LINNAEUS) to study the epidemiology of medical error in primary care.

## Synopsis of research 2005-10

Since 2005, a substantial part of our research programme has related to the evaluation of performance indicators and associated payments as a method of improving quality of care, with particular reference to the indicators within the Quality and Outcomes Framework (QOF) introduced in 2004.

Pay for performance in English general practices

We measured quality of care in a representative sample of 42 practices in six areas of England. Our first detailed assessment of quality was in 1998. We then collected data on visits to the practices in 2003 and 2005 and 2007 and this showed that quality was improving before pay for performance was introduced in 2004.[35] Most practices reported high levels of achievement in the first year of the scheme, with achievement generally increasing in the second and third years, before reaching a plateau for most indicators in the fourth year.[446]

We used workload diaries to investigate how practices generated quality improvements through changes to team size and skill mix. From 2003 to 2005 we found that practices increased nurse staffing levels far more than doctor staffing levels in order to meet the Quality-and-Outcomes (QOF) indicators.[463] The hours of work and complexity of work for nurses increased whereas those of doctors remained largely unchanged. Teams became larger, partly due to practices taking on more staff, and sometimes through mergers of smaller practices. This made it easier to deliver high quality for some of the technical aspects of care.

We found that, whilst there was some improvement above the underlying trend for many incentivized activities, there was no such improvement for non-incentivised activities, and in some cases quality declined.[214] Gaps in the quality of care might therefore develop between patients with QOF incentivised conditions and those with non-QOF conditions, particularly in practices with low baseline achievement for QOF-incentivised activities.

We investigated whether GPs had gamed their exception reporting of patients as a means of improving their QOF scores.[552] Comparison of practices which had less than maximum points in the first year of the QOF with those which achieved the maximum showed that those with less than the maximum had higher rates of exception reporting in the second year, suggesting that they had responded to the increase in the price per point between the first and second years by increasing their exception reporting.

The impact of QOF on equity of care was unexpectedly positive. In the first three years of the QOF, the worst performing practices improved at the fastest rate, and inequalities in the quality of care for incentivised activities therefore quickly narrowed.[337] Practices in deprived areas excluded more patients than practices in more affluent areas, but the difference was marginal and rates of exception reporting have generally been low.

Outcomes for patients have been mixed. Evidence is now beginning to emerge of the longer term health benefits for patients. For example, practices improving glycaemic control for their diabetic patients have achieved modest reductions in emergency hospital admissions for complications of diabetes.[546] In contrast, an unintended negative consequence for patients has been a decline in continuity of care, suggesting perhaps that QOF-related work may have diverted effort away from fulfilling patients' expectations regarding access.[532]

Between 2005 and 2006, we undertook a study to explore the motivational drivers of GPs and other groups of staff in the practice teams within the context of QOF.[273,322,363,377,381,465,495,541] We also examined the organisational and institutional context of general practices and in particular the approaches that they adopted to score QOF points.[220-222] We found that GPs and nurses were largely supportive of the new contract and the target-driven culture associated with it however the target based, standardised nature of QOF targets threaten to undermine claims by GPs to provide holistic, patient-centred care.[273] We concluded that, although QOF was associated with increasing hierarchy and surveillance there did not appear to be any 'crowding out' of intrinsic incentives and tensions associated with contract implementation appeared to be manageable.

Incentives and performance

Between 2001 and 2005, we undertook a study of the impact of National Service Frameworks (NSFs) on general practice (Checkland 2004; Checkland & Marshall 2002).[220,221] The research conceptualised general practices as small organisations, and sought to investigate the impact of these then new initiatives on them, and the effect of different internal organisational realities on approaches to implementing NSFs. We found that top-down government initiatives are interpreted by 'grass-roots' organisations such as general practices in ways that depend upon their previous histories and experiences, their beliefs and their values. Our data allowed us to present a major critique of conventional academic approaches to 'barriers' within organisations.

Between 2006 and 2008, we undertook a historical study of performance indicators in the UK and Netherlands health sectors from 1982-2006, funded by the Economic and Social Research Council, in collaboration with Erasmus University, Rotterdam.[578] The main focus was on performance indicators (PIs) in the acute hospital sector, though we also looked at more recent developments in primary care in England. We concluded that national differences in health system ownership and finance, and in type of democracy, had an impact on the development of PIs, probably accounting for the twenty-year lag in Dutch adoption. Once PIs have been adopted, they are likely to follow a 'logic of escalation', from formative to publicly available summative data that substitutes PIs for physical inspection, to targets associated with incentives or sanctions, perhaps leading to being seen as a source of information upon which patients and/ or primary care gatekeepers can base their choices.

Between 2008 and 2010 we undertook a study of the impact of incentives in primary care on the behaviour and performance of GPs, General Dental Practitioners, and Community Pharmacists.[567,568] The study was funded by the NHS Service Delivery and Organisation research programme and conducted in collaboration with The University of Manchester's Oral Health Unit and School of Pharmacy. We found that incentives acted as powerful levers to change professional behaviours, resulting in: a contribution to high levels of attainment of quality targets and a reduction in the variation in care quality related to deprivation in general medical practice; increasing volumes of the incentivised

activities in community pharmacy; and a shift towards dental treatments which pay more, relative to effort expended. In all settings there were unintended consequences. These varied between settings, but included 'tick box' care delivery, decisions taken based on remuneration rather than clinical factors and worsening relationships between provider organisations and commissioners.

Our international collaboration with Kaiser Permanente, looking at what happens to quality of care if indicators are removed from an incentive scheme, is now completed. We found that removing financial and reputational incentives from clinical indicators may mean that performance levels, and therefore patient care, may decline.[564]

Impact on hospital admissions

It has been suggested that better quality primary care will reduce unplanned hospital admissions for complications of conditions which can be managed in primary care. Between 2008 to 2009 we used the data on clinical quality indicators produced by the QOF and showed that practices which improved their diabetes management experienced a reduction in emergency admissions for glyceamic complications relative to other practices.[546]

In 2010 we extended this work to see if improvements in the quality of care for other major chronic diseases (as measured by population achievement in the QOF) was related to reduced admissions for these conditions, so called 'ambulatory care sensitive admissions'. For asthma, hypertension, stroke and COPD (but not for epilepsy), we found that improvements in the quality of primary care were associated with reduced admissions for these and related conditions, with no impact on admissions for conditions which were not incentivised in the QOF.

Patient Safety

The majority of people who have contact with health care providers will receive high quality care but unfortunately for some people this care will actually harm them or be potentially harmful to them. The potential for safety problems in primary care is significant, not least because of the volume of patient contacts that take place, the complexity of the interactions and the level of uncertainty associated with providing care in the community setting.

In order to further our research agenda in this area we have worked collaboratively with researchers from a range of disciplines both in Manchester, the UK and internationally. This was facilitated with an MRC network development grant.

We have completed and published, with our partners, work on the analysis of medico-legal databases, an ethnographic study into understanding errors in operating theatres, exploring the role of community pharmacists in reducing medication error and developing a framework for assessing patient safety culture in primary care.[190-91,265,550] The Manchester Patient Safety Assessment Framework (MaPSaF), developed as part of the programme, is used extensively in the NHS to assess patient safety culture in

community settings and has been translated into several European Languages for use in EU member states. In 2009 we obtained a major EU grant (€2.49 million) to develop a patient safety network for primary care in the EU.

Improving the quality of primary care organisation

During the past three years we have worked with the Royal College of General Practitioners to develop an accreditation scheme for non-clinical aspects of care called Primary Medical Care Provider Accreditation (PA). It is increasingly recognized worldwide that a quality improvement strategy needs a balance between quality assurance / regulation (summative) and educational (formative internal improvement) approaches. Our previous research found that quality improvement initiatives too often follow a 'logic of escalation', from formative to summative targets. For this reason, PA retains a strong underpinning focus on voluntary professionally-led quality development (which is formative in nature); while at the same time we have worked with the Care Quality Commission (CQC) to align attainment of PA with meeting new CQC registration requirements (which is summative in nature).[533] Our work on PA has built on our international experience of developing accreditation schemes, such as European Practice Accreditation,[45,46] and our international links are reinforced by the fact that some NPCRDC staff hold joint or honorary contracts at the Universities of Heidelberg and Nijmegan to create cross country collaboration and learning.

## Key impacts on policy and practice

- We were instrumental in developing the UK primary care pay for performance scheme - the Quality and Outcomes Framework - and have continued to provide ongoing developmental support, working from 2006-9 with NHS employers and from 2009 with the National Institute for Clinical Excellence. We develop and pilot all potential new indicators for the Framework and also advise on the general structure and content including how to remove indicators, consequences of doing so and the value of exception reporting.

- GPAQ is a patient questionnaire which was developed at the National Primary Care Research and Development Centre at The University of Manchester for the 2003 GP contract. Building on several years of development and testing, GPAQ helps practices find out what patients think about their care. It specifically focuses on aspects of general practice such as access, inter-personal aspects of care and continuity of care. GPAQ can either be administered by post or after consultations in the surgery.

- Based on our experience with GPAQ, we bid successfully with IPSOS-MORI to provide a new national survey (the GP Patient Survey www.gp-patient.co.uk) and continue to provide academic advice on the design, delivery and validation of the survey. The GP Patient Survey now provides the most detailed information on

patient experience in primary care of any country in the world, with detailed information on general practices available online.

- Our primary care practice accreditation (PA) scheme has now been formally adopted as the Royal College of General Practitioner's main accreditation scheme. PA will be implemented across England in early 2011 and we expect a high uptake since there are synergies between PA and the Care Quality Commission. Any practice with PA will receive a 'light touch' from the CQC when compulsory registration requirements are introduced 2012. Helen Lester continues Manchester's involvement with PA through her role as the research lead for the RCGP and member of the PA internal delivery group.

## Three key publications

1. Lester H; Schmittdiel J; Selby J; Fireman B; Campbell S; Lee J; Whippy A; Madvig P. The impact of removing financial incentives from clinical quality indicators: longitudinal analysis of four Kaiser Permanente indicators *British Medical Journal* 2010; 340 7755 1072
2. Campbell SM; Reeves D; Kontopantelis E; Sibbald B; Roland M. Effects of pay for performance on the quality of primary care in England *New England Journal of Medicine* 2009; 361 4 368 -378
3. Doran T; Fullwood C; Kontopantelis E; Reeves D. Effect of financial incentives on inequalities in the delivery of primary clinical care in England: analysis of clinical activity indicators for the quality and outcomes framework *Lancet* 2008; 372 9640 728 -736.

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*primary care health professionals and managers.* London: Royal Society of Medicine Press.

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# Chapter 4. Organisations

## Introduction

Our Organisations programme aims to investigate the impact of innovations in primary care organisations and in health care commissioning. In particular, we seek to understand the organisational processes and other characteristics that produce effects (such as effectiveness, efficiency, equity, service innovation and user/public responsiveness) that are of interest for public policy, and how these are influenced by broader social, professional, political and economic contexts.

## Synopsis of early research

Prior to the period covered by the present report, research by the Organisations team largely fell into three broad categories:

- Investigations of new forms of organisation in primary care, including contracting for primary care, 'total purchasing', PMS contracts, PCAPs, primary care resource centres, and GP out-of-hours co-operatives.
- Research focusing on continuing and social care, with a particular focus on partnerships, but also covering guidelines, carers, residential homes and direct payments.
- Economic topics, conducted in collaboration with the NPCRDC economists at the University of York. Studies included economies of scale and scope in primary care, patient transfers between general practices, discounting health effects, and inequalities in the distribution of community pharmacies.

From 1999 until 2009 we maintained the *National Primary Care Database,* which provided underpinning information for our research programme by linking data from NHS primary care with data on population characteristics from the Census. The database was accessible free of charge to all NHS and academic users; and was set up at a time when similar information was not widely available. As there are now many websites offering access to comprehensive primary and secondary data care we have decided to no longer provide data via our website.

## Synopsis of research 2005-10

Partnerships, hierarchies and networks

Between 2006 and 2010, we undertook a study of *Professional partnerships and non-hierarchical organisations,* funded by the NHS Service Delivery and Organisation research programme and conducted with colleagues at the University of Plymouth. The project sought to categorise forms of professional partnership and non-hierarchical organisation and to build theories about how and why they may affect policy outcomes. We found that the goals of such organisations are to break even, do high quality work, and provide services for their locality. Their structures involve either direct democracy of small workplace teams, or the workforce electing top managers. Coordination relies primarily on concertive control, whilst production processes in National Health Organisations (NHOs) and partnerships tend to produce an upward shift in the expertise and skills, satisfying members' and partners' intrinsic motivations to work. In the NHS, partnerships and NHOs are capable of adherence to external performance targets when these are clear, specific, perceived as legitimate, incentivised and compliance is transparent.

Between 2006 and 2010, we undertook a study of the *management and effectiveness of professional and clinical networks*, funded by the NHS Service Delivery and Organisation research programme and conducted with colleagues at the University of Plymouth.[583, 584] The project aimed to identify which methods of networking are most effective in co-ordinating care. We found that members' engagement with networks depended on whether participation enabled them to satisfy external targets and incentives; financial incentives played little part. Coordination was non-hierarchical. The more medicalised the networks were, the more important was knowledge management as a means of coordination. Inclusion of service users had little effect on activity except where they were involved in providing the network's core activity. Network outputs were predominantly intangibles (guidance, policies etc) but some service changes also resulted, and more highly connected organisations showed a greater reduction in referrals.

New models of care

Between 2003 and 2006 we undertook the *national evaluation of 'Evercare'*, a scheme for the case management of frail elderly people with long term conditions introduced in nine pilot sites in 2003.[14,15,120,183,244,289,294,409,519] The research was resourced from NPCRDC core funds. Our evaluation showed that Evercare provided a range of new services to vulnerable elderly people and was very popular with patients and carers. However, it did not achieve the policy goal of reducing emergency admissions. More radical redesign of the system (e.g. better risk profiling, better integration between primary and secondary care and better organisation of out-of-hours services) will be needed if case management is to have a greater impact on admissions.

Between 2005 and 2008, we studied initiatives for *Bringing care closer to patients' homes*, a key NHS objective. [206,295,412,519] We carried out a detailed literature review which showed that transferring hospital services to primary care, and interventions to modify GPs' referral behaviour can reduce outpatient activity. Moving care from specialists to generalists may reduce quality of care unless there is adequate support for staff who take on new roles, but it can also improve access to specialist care for people who would otherwise have a long wait. Relocating medical specialists in primary care settings, and joint working between primary and acute care services improved access without loss of quality. However, such changes rarely reduced outpatient numbers and tended to be more expensive, because of loss of economies of scale. We then studied the relocation of specialists to community settings in 30 demonstration sites in England and found that patients reported significantly shorter waits, easier access and high satisfaction. They also reported a high level of technical competence from the doctors and nurses they saw in the community. However, these improvements were at the expense of high initial investments. The new services dealt with less complex conditions at prices lower than the national outpatient tariff, and there was some concern that hospital departments might be destabilised as a consequence

Local authority scrutiny

Between 2003 and 2006, we undertook a study of *local authority scrutiny of primary care organisations,* resourced from NPCRDC core funds.[30,113,115,224,225,226] The introduction of overview and scrutiny of health in January 2003 aimed to introduce a greater degree of democratic oversight to the NHS whilst promoting constructive engagement amongst local agencies responsible for the health of the population. The project examined the implications of scrutiny for democratic accountability and local governance in primary care, and the implications of the scrutiny process for local authority/PCT partnerships. Two implied philosophies of health scrutiny were identified: 'scrutiny-as-democracy' sought to increase public involvement, directly and indirectly via councillors, in health related decision making, whilst 'scrutiny-as-integration' (which we found to be more common ) sought to promote local wellbeing through involving a wide range of local agencies. Despite the policy being in its infancy some positive outcomes could already be identified. However, we concluded that the ultimate goals of scrutiny (eg improving health and reducing inequalities) would take much longer to achieve.

Between 2004 and 2007, we undertook a further study of *local authority scrutiny of the NHS*, funded by the Centre for Public Scrutiny and carried out with colleagues in the University of Manchester School of Social Sciences and the Manchester Business School.[104,326] The project aimed to describe and understand the impact of health scrutiny on organisations and communities, and to describe and understand the range of approaches being used and to examine their effectiveness. We found that whilst the use of working groups was common, a few localities had adopted a more novel approach involving a more collaborative approach with stakeholders and the public. More generally, relationships with NHS bodies were considered productive, though relationships with Patient and Public Involvement Forums had been hampered by

resource constraints, and involvement of the general public had in general been low. The main impact of scrutiny that we observed consisted of modest changes to plans and services, though these were generally valued by participants.

Organisational culture

Between 2005 and 2008, we undertook a study entitled *Cultural change in NHS organisations: understanding the dynamics,* funded by the NHS Service Delivery and Organisation research programme and conducted with colleagues at the University of York, King's College, London, and Manchester Business School.[488,566] The overall aim of the project was to understand the nature and dynamics of change in terms of changing NHS organisational cultures and their relationships to performance across health economies. We identified a decline in Clan cultures (bonded on loyalty and tradition, with an emphasis on morale) and a rise in rational cultures (with an emphasis on being competitive and winning) in both hospitals and PCTs. The study confirmed earlier findings study of a contingent relationship between organisational culture and performance in NHS hospitals. However, we identified a range of unintended and dysfunctional side effects induced by the scale, frequency and rapidity of organisational change, that were creating increased anxiety and stress for staff. We concluded that these effects have the potential to overshadow many of the positive aspects of culture change.

Between 2006 and 2007 we undertook a project on *Improving the measurement and assessment of organisational culture,* funded by the SDO programme and building on earlier joint work between NPCRDC and the University of York that identified weaknesses in contemporary quantifiable concepts of organisational culture. This study was linked to a larger empirical study of changing organisational culture and performance in NHS primary and secondary care organisations (see above).

Commissioning

With colleagues in the DH funded Health Policy Team in the Centre for Health Economics we examined trends in the concentration of commissioning and showed that the abolition of fundholding led to an increase in concentration, suggesting that the introduction of GP commissioning consortia may lead to more active commissioning and greater dispersal of admissions across providers.[235,340,460]

Between 2007 and 2009, we undertook a major study of *practice-based Commissioning*, resourced from NPCRDC core funds.[205,326,433, 448,449,494,544] We found that most GPs undertook PBC as part of local groups rather than as single practices. However, engagement depended on GPs perceiving specific local PBC arrangements as legitimate, a perception sometimes undermined by tight control by PCTs and by GP concern that the policy might be abolished. We found that positive impacts of PBC included: the development of new services; engagement in the redesign of patient pathways; the development of systems to review and reduce hospital referrals; and a new willingness amongst GPs to engage in peer-review of performance. Areas of

difficulty or contention included: how budgets and savings were calculated; what managerial and information support were available; how PBC was integrated into the wider commissioning agenda of the PCT; levels of patient and public involvement. We found confusion as to how health inequalities might be approached through commissioning. We concluded that if these areas of difficulty were addressed, PBC has the potential to contribute significantly to the effectiveness of commissioning.

Between 2009 and 2010 we undertook a study of the *commissioning roles of middle managers in Primary Care Trusts* (PCTs), funded by the NHS Service Delivery and Organisation research programme. We found 'commissioning' to be an ill-defined concept, with no clear consensus as to how it should be organised. Although middle managers undertook some roles comparable to those in other types of organisation, PCT middle managers also networked outside their organisation, with PBC groups, providers and other commissioning managers. We also described a novel role for managers with responsibility for practice-based commissioning, which we termed the 'animateur'. We found that GPs adopting managerial roles emphasised a continuing identity as doctors, and resisted the label of either 'manager' or 'leader'. Organisational practices such as office geography and the organisation of meetings had a significant impact on the roles and behaviour of middle managers.

During 2010, we undertook a preliminary study of *Alternative Providers of Primary Care* (APPC), resourced from NPCRDC core funds. APPC is the provision of family medical services by organisations other than traditional NHS general practices, including corporate commercial providers. Our study focused both on the experiences of Primary Care Trusts in *commissioning* primary medical services from such organisations, and on the *operation* of APPCs in order to understand how they are organised and operated in the provision of primary medical care to the NHS. We found that the APPC procurement process was experienced by PCTs as costly in both time and monetary terms, with costs only partially met by the resources allocated by the DH. There was also concern about the possibility of legal challenge associated with procurement. APMS contracts were much more tightly monitored than their GMS counterparts, a process regarded as time consuming by both PCT and practice staff. We also found, however, that the experience of tightly monitoring APMS contracts had caused PCT staff to think about standard GMS performance in a different way, and some felt that the existence of the new practices had caused existing GPs to 'raise their game', by, for example, extending their opening hours. Virtually all of the new practices that we studied had struggled to meet their target list sizes, even those in areas identified beforehand as 'under-doctored'.

Professionalism

Between 2008 and 2009, we undertook a study of the *professional attitudes and behaviours of doctors in the United Kingdom and the United States*, funded jointly by the US Institute for Medicine as a Profession and the UK Nuffield Trust, conducted with colleagues at Harvard University.[434,593] We undertook focus groups and a survey (in parallel with a similar survey in the USA) to discover the extent that values espoused in

policy documents from bodies such as the General Medical Council and Royal College of Physicians were widely supported by doctors, and whether reported behaviours might be in conflict with those values. We found that the great majority of doctors agreed with the values endorsed in leading professional documents such as *Doctors in Society* and *Good Medical Practice*. The results also show that the majority of behaviours which might be regarded as running counter to the values espoused by professional societies were reported infrequently, and for the great majority of these behaviours, very few doctors reported that they happened often.

Between 2008 and 2009 we undertook a study of *Professionalism in Pharmacy Education*, funded by the Pharmacy Practice Research Trust and conducted with colleagues at the University of Manchester Centre for Pharmacy Workforce Studies. We examined the curriculum in three schools of pharmacy, and investigated staff and student perceptions about how professionalism is taught and assessed. Role models, particularly when constituted by practising pharmacists, were regarded as critical for 'learning' professionalism. All three schools explicitly covered the topic in curricula, including role-play of patient-professional interactions, but there were differences in the strength with which the topic was integrated into the organisational philosophies of the respective courses.

In 2010 we commenced a study of *patient-centred professionalism among early career pharmacists*, funded by the Pharmacy Practice Research Trust in collaboration with colleagues at the University of Manchester Centre for Pharmacy Workforce Studies. The project aims to understand the link between early undergraduate professionalisation and its subsequent development during the early years of pharmacy practice through identifying the components of professionalism in pharmacy, along with the key influences on the development of professionalism, and the main enablers and barriers to its development. The project will report in early 2011.

Resource allocation

Building on the work in the 2001 AREA report which was adopted as the basis for allocation of budgets to PCTs from 2003 to 2009, we and colleagues in CHE and the Nuffield Trust, investigated the factors determining hospital expenditure of individual patients for the Person Based Resource Allocation (BBRA) project.[485] The PBRA work has been used to devise budgets for general practices for practice based commissioning.

Complementary and alternative medicine (CAM)

Between 2006 and 2009, we undertook a study entitled *Exploring the concept of efficacy within complementary and alternative medicine: Views of therapists and their patients*, funded as a Faculty doctoral award, focusing on homeopathy, acupuncture and Reiki. The study found that the efficacy of treatment is understood in terms of symptom relief and a return to full health, but that this formed only part of therapists' and patients' understandings, which were also based on interpretations of numerous `signs' that serve

to instigate and reinforce conviction and belief in CAM efficacy. Belief in CAM efficacy is often intertwined with meanings and interpretations associated with the personal qualities of therapists. Understandings of CAM efficacy involve elements spanning a spectrum from the pragmatic to the esoteric and spiritual.

## Key impacts on policy and practice

- Our staff led the development of the funding formula used within the NHS, including the AREA formula used for allocation of budgets to PCTs from 2003 to 2009, the CARAN formula used from 2009 and the RAMP formula from 2010. Most recently this has included a major contribution to work which shows how resource allocation could move away from traditional methods using area based information to formulae based on information on health service use by individual patients. This PBRA work is currently used to devise budgets for general practices for practice based commissioning.
- Successive governments have seen the potential benefits of moving more care into the community. Our evaluation of community matrons showed that, while highly valued by patients, they did not have the expected effect of reducing admissions. Our work on moving care traditionally provided in hospitals has shown that transferring care can sometimes be cost effective. However, this is not guaranteed and moving care into the community can sometimes be more expensive and sometimes result in a loss of quality.
- Providing evidence to policy makers on the early performance of PBC. The findings of our research have been widely disseminated in print via peer-reviewed journals and shorter practitioner-oriented reports; they have also been presented to the Department of Health, the National Audit Office and the Audit Commission, given in written evidence to the Health Select Committee's 2009 inquiry into NHS commissioning, and presented to several PCTs at local research conferences and invited events. The work also resulted in an invitation to give oral evidence to the Health Select Committee's 2010 inquiry into NHS commissioning.
- We have pioneered in several studies the use of ethnographic methods in qualitative primary care research, radically changing the conventional balance between interview and observational data in favour of the latter in order better to understand the everyday working of the organisations that we study. Whilst this is not a policy impact literally, it is a broader impact and we can already see other research teams adopting this approach.

## Three key publications


1. Checkland K, Coleman A, Harrison S, Hiroeh U. (2009) We can't get anything done because…: Making sense of "barriers" to practice-based commissioning. *Journal of Health Services Research and Policy* 14(1): 20-6

2. Checkland K, Harrison S, Coleman A. (2009) Structural interests" in health care: Evidence from the contemporary National Health Service' *Journal of Social Policy* 38(4): 607-25.

3. McDonald R, Checkland K, Harrison S, Coleman A. (2009) Rethinking collegiality: Restratification in English general medical practice. *Social Science and Medicine* 68: 1199-1205.

# Chapter 5. Workforce

## Introduction

The NHS was established as a primary care-centred system with general practitioners (GPs) as the principal providers of primary care and gatekeepers to other health services. This model has undergone substantial change with the introduction of alternative provider organisations, the replacement of solo GPs with large multi-disciplinary teams, the introduction of new roles, increased specialisation, and the removal of primary and secondary care boundaries. These reconfigurations have been expected to enhance quality, reduce demand for doctors and reduce costs. But the evidence-base on whether these gains are achieved or achievable is surprisingly modest.

The aim of this programme has been to increase the understanding of how primary care workers can be influenced to locate and configure into teams that improve the accessibility, quality and cost-effectiveness of care provided in primary care and at the interface with secondary care. It has sought to evaluate policy changes and develop more effective strategies to enhance workforce participation and promote equity in distribution. It has: undertaken evaluative work on new types of professional and new roles for existing staff; examined the long term impact of the GP contract; developed more effective strategies to promote equity in distribution of the NHS workforce; and evaluated the success of overseas recruitment strategies.

## Synopsis of early research

### Skill Mix

Our early controlled trials and case studies showed that shifting care from GPs to nurses, community pharmacists and mental health counsellors is a plausible strategy for enhancing patient access and the quality of care, and could reduce GP workload. However, they did not necessarily save the NHS money. Increases in the size and complexity of primary care teams may increase transaction costs and reduce the co-ordination and continuity of care.

### Workforce supply

Our early work showed that, while demand for general practice services rose throughout the 1990s, the supply of GPs remained static leading to marked workforce shortages by 2000. This problem was exacerbated by the rising proportion of women doctors whose

lifetime work effort is lower than that of men, a trend towards early retirement, and the move towards part time working among men as well as women.

Many have attributed problems with GP retention to the negative impact of successive NHS reforms on GP job satisfaction. Job satisfaction fell markedly following the GP contract reforms of 1990, and again following the introduction of Primary Care Groups and Trusts. GP intentions to quit direct patient care rose significantly between 1998 and 2002.

Rising workload was reported to be the principal source of discontent for GPs but, since our systematic reviews showed that there was little objective evidence, the increased workload reported by GPs may be related more to increases in the complexity of their work. The lack of flexibility inherent in GP principal posts appeared to be the more pervasive and enduring problem. We predicted that the new GMS contract may go some way to alleviating this problem by giving GPs more control over their individual hours of work and scope of practice.

Geographical distribution

We showed that inequities in GP distribution have persisted for some decades and are accentuated, not offset, by inequities in the distribution of other primary care clinicians, notably nurses. Urban deprived areas generally experience the greatest problems in recruiting and retaining GPs.

We showed how financial inducements and job redesign could be used to enhance GP workforce participation, particularly in deprived inner city areas. Surveys, case studies, and quasi-experimental trials showed that extra payments for service in deprived areas, coupled to more flexible salaried contracts, had the ability to enhance GP job satisfaction, recruitment and retention in under-served areas.

We concluded that the challenge was to improve the fit between job attributes and provider characteristics by increasing work-time and career flexibility, labour mobility and better match between effort and reward.

## Synopsis of research 2005-10

We continued to evaluate the impact of new types of workers on effectiveness and efficiency.[E.g. 59,114,251,318] We investigated how increasing specialisation and team size, affect the quality of different aspects of care provision in general practice. We also developed more effective strategies for enhancing workforce participation and promoting equity in distribution through job redesign and the appropriate use of financial incentives.

Skill Mix: Impact on quality of care

This programme of work has emphasised that other members of the primary health care team may work either as 'substitutes' or 'supplements' for general practitioners. Doctor substitution is intended to reduce cost, increase service capacity and reduce physician workload whilst maintaining quality of care. Doctor supplementation is primarily intended to improve both the quality and range of service provision without necessarily reducing physician workload or costs.

In partnership with colleagues at the University of Nijmegen and elsewhere, we conducted primary research and systematic reviews of nurse-doctor substitution and supplementation in primary care.[166,186,187,365,411,414,457,479,480,502,505,560] The substitution research suggested that appropriately trained nurses can produce as high quality care as doctors but do not always save money or reduce doctors' workload. The supplementation research suggested that the addition of nurses to physician teams generally improves quality of care with modest health gains for patients but also increases costs.

Job satisfaction

Job satisfaction is known to affect absenteeism and retention and may also affect performance. We established a longitudinal series of GP job satisfaction surveys going back to 1989. These have enabled us to track GP hours, remuneration, job satisfaction, alternative contracts, and job preferences. Surveys in 2004[21], 2005[193] and 2008[435] enabled us to monitor the impact of the new GMS contract and improve our understanding of GP job satisfaction. The value of the work was enhanced by establishing a panel element, so increasing our ability to investigate the determinants of job satisfaction and the stability of satisfaction over time.

Our national surveys of GP job satisfaction in 1998 and 2001 showed a rise from 14% to 22% in the proportion of doctors intending to quit associated with decreased job satisfaction. However, subsequent surveys in 2004 showed that job satisfaction had improved, and rose again in 2005 following the introduction of the new GP contract.[194] GPs reported that they worked shorter hours for higher pay and had improved the quality of their care. However they also reported that their work intensity was high, thus raising concerns that high levels of satisfaction may not be sustainable in the longer term.

Our 2008 survey[435] suggested that GPs' working lives remain improved since the introduction of the new GMS contract in 2004, but drifted below the peak reported in 2005. Job satisfaction declined significantly from 2005 to 2008, with the biggest declines reported in satisfaction with hours of work and remuneration. Respondents reported working an average of 40-42 hours per week. This was an hour a week more than 2005 but three hours per week less than 2004. GPs reported substantially higher job stress than they did in 2005 particularly with respect to adverse publicity from the media and an unrealistically high expectation of their role by others. However, compared to the 2005

respondents, the 2008 respondents reported greater choice in deciding what to do at work and felt that they had greater clarity about their responsibilities.

Workforce Participation

The GP workforce reflects wider societal trends in its movement towards early retirement and part time working. Such changes exacerbate the problem of workforce shortages. Using data from the national GP census and our longitudinal surveys of GP job satisfaction, we followed-up GPs who participated in the 2001 national job satisfaction survey to see what proportion of those who intended to quit or reduce their work commitment actually did so.[184,554] We found that dissatisfied doctors were more likely to leave practice than satisfied ones. However, dissatisfaction and satisfaction do not appear to act as though they were opposite ends of the same scale in their effect on leaving. Increasing dissatisfaction increases the likelihood that doctors will leave practice and never return but increasing job satisfaction does not reduce the likelihood of leaving. This suggests that the factors that promote dissatisfaction are not the same as those which promote satisfaction.

We also considered whether salaried contracts provide a vehicle for redesigning jobs to improve the fit between NHS needs and GP aspirations. Using data from the national census of GPs, salaried GPs were compared with non-salaried GPs to identify (a) which types of people choose salaried over non-salaried status, (b) movements between salaried and non-salaried status over time and (c) comparative retention rates.[332] Salaried GPs tended to be either younger or older, female, or overseas-qualified and favoured part-time working. They were more mobile than GP principals, and have become increasingly so, despite a trend towards reduced overall mobility in the GP workforce. However, since practices with salaried GPs were more likely to be located in affluent areas, introduction of a salaried contract option is unlikely to have relieved inequalities in GP distribution. Moreover, in complementary qualitative work[465] we found that whilst the introduction of a salaried option improved the working lives of principals they also created a hierarchical structure within practices that led to resentment among salaried doctors. Many salaried GPs felt disenfranchised and disillusioned by the difference in status and autonomy in decision making and the type of work they performed in the practice.

Workforce Distribution

The geographical distribution of GPs is important because we have shown that, all other factors being equal, increasing the supply of GPs is associated with improved measures of population health.[143,169,350,384] In a series of analyses, we have shown that GPs are unevenly distributed across the country, and that there are relative shortages in deprived areas. Although these inequalities improved between 1977 and 1991, they got progressively worse between 1991 and 2003. The ending of the central regulation of GP supply by the Medical Practices Committee in 2002 was associated with increased inequality.

We evaluated policy initiatives to attract additional GPs into 30 PCTs designated as 'under-doctored'. We showed that the selection of priority areas was sensitive to how 'under-doctoredness' was measured and we recommended broadening the definition to cover other members of the primary health care team.[361] We examined the effect of increases in the total supply of GPs and the ending of entry restrictions in 2002.[550] We found that equity improved between 1974 and 1994 but then decreased, and in 2006 it was below the 1974 level. After 2002, England had a greater percentage increase in GP supply than Scotland and a smaller increase in inequity. The increase in per capita supply between 2002 and 2006 was not significantly associated with morbidity, deprivation or amenities. Reducing geographical inequity in the provision of GPs therefore requires better targeted area-level policies and consideration of the unintended consequences for equity of other primary care policies.

In 2005 we produced an international overview of strategies to improve equity and concluded that the UK might benefit by using a wider range of both financial and non-financial incentives.[20] Research elsewhere points to a number of affinity factors that increase the likelihood that a physician will work in an underserved area. We explored potential affinity factors of GPs and practice nurses working in urban deprived areas compared with those working in non-deprived areas and found that the type of location in which GPs trained emerged as a consistent factor in determining current location choice. Future research should look to how GPs' exposure to deprived areas during training could be exploited to enhance recruitment to underserved urban deprived areas.

Differential rates of pay may influence where GPs locate. In partnership with the Health Economics Research Unit of the University of Aberdeen, we investigated geographic variations in general practitioner income and estimated what level of financial compensation may be needed to offset inequalities in distribution.[135]

Available financial compensation may have unintended consequences on the geographical distribution of GPs. Since the introduction of the new GMS contract, we found that voluntary out-of-hours work has now become a flexible option, akin to overtime, and that the decision to take on out-of-hours work was related to household expenditure needs and levels of income from other sources.[464] We also examined differences in GP pay by gender and found that, allowing for hours worked, the average income of female GPs is 70% of that for males.[354] Comparison of incomes in all-male, mixed and all-female partner practices suggest that the male GPs generate more income than females and that pay differences were not due to within-practice discrimination but rather due to preferences of male and female GPs for different kinds of activities, with different income generating potential. Most recently we have reviewed the incentives offered to GPs for various forms of immunisation and suggested that the system be simplified and made more consistent.[528]

Medical supply

We have added to our longstanding work on recruitment and retention with a focus on the employment and distribution of overseas doctors. Doctors who qualified overseas comprised 26% of the medical workforce in 2000 and more were needed to compensate for projected workforce shortages through to 2005. We undertook a critical review of England's position in the global labour market in order to assist the government in developing its overseas recruitment strategies. We described the origins and distribution of overseas' doctors in the NHS and investigated how overseas' qualification affects doctors' length of stay and promotion prospects in the NHS.[356] Doctors who qualified overseas tend to have shorter lengths of stay and worse promotion prospects than UK trained doctors but career histories vary markedly with country of origin. We found that doctors from poorer countries, with fewer doctors per head of population but stronger economic growth tend to stay longer in the NHS than domestically-trained doctors. This is consistent with the theory advanced some time ago that such countries have the resources to train doctors but cannot then offer them good enough job/lifestyle opportunities to keep them.

Through a postal survey and eight case studies, we explored whether a period of intensive international recruitment by the English NHS achieved its objectives of boosting workforce numbers.[591] Most respondents had undertaken or facilitated international recruitment between 2001 and 2006 and believed that it had enabled them to address immediate staff shortages but were more equivocal on longer-term implications. Most organisations had made only limited assessments of value-for-money and 'hidden costs', such as pressures on existing staff, time spent on induction/pastoral support, and human resource management and workforce planning challenges. Should such approaches be attempted in future, a clearer upfront appraisal of all the potential costs and implications will be vital.

We also undertook collaborative work with Johns Hopkins (USA) on research into the role of 'specialist' physicians in the USA.521[521,522] This identified what types of care were currently provided by specialists that could instead be provided by generalists. The findings suggested that the outpatient activity of specialists is focused mainly on routine and preventive care for self-referred patients. This raises the possibility that shortages of specialists in the USA could be alleviated by transferring a substantial part of their work to primary care.

## Key impacts on policy and practice

- Since 1998 we have carried out regular national GP job satisfaction surveys allowing us to track GP hours, working conditions, job satisfaction and experience of health care reforms. This has provided evidence on the impact of changes in NHS organisation on GPs and has fed directly into evidence for the Review Body on

Doctors' and Dentists' remuneration. Our work has been quoted in Review Body reports on a number of occasions.

- Our work has had a direct influence on the development of government policies, e.g. the 'golden hello' used to incentivise GPs to move to socially deprived areas and the development of a Costs of Recruitment and Retention adjustment to the pay formula. Our work analysing international experience on interventions that can be used to increase recruitment and retention to underserved areas has been widely quoted and led to a number of invitations to give keynote addresses in the UK and abroad.

- Since the earliest days of the Centre, we have carried out research showing the impact of substituting other health professionals into roles traditionally provided by GPs. This shows, for example, that nurses can effectively substitute for doctors in many roles. Our staff have developed international reputations in this field, with invitations to present our work in Europe, North America and Australia.

## Three key publications


1. Whalley D, Gravelle H, Sibbald B. Effect of the new contract on GPs' working lives and perceptions of quality of care: a longitudinal survey. *British Journal of General Practice* 2008; 58(546):8-14.

2. Gravelle H, Morris S, Sutton M. Are family physicians good for you? Endogenous doctor supply and individual health. *Health Services Research* 2008; 43(4):1128-44.

3. Scott, A., Gravelle, H., Simoens, S., Bojke, C., and Sibbald, B. Job satisfaction and quitting intentions: a structural model of British general practitioners. *British Journal of Industrial Relations* 2006; 44(3):519-540.

# Chapter 6. Capacity Building

The Centre aims to increase research capacity in primary care through the provision of support, training, and staff development. This is achieved by three means. First, Centre staff support national and regional committees charged with developing and/or implementing strategies to enhance the research skills and activities of primary care professionals. Second, the Centre provides graduate training in research to primary care professionals and academics. Third, the Centre enters into national and international collaborations with other organisations to exchange knowledge and skills in primary care research.

## Support for capacity building

As indicated in the table below, members of staff from the Centre have served on a number of national and regional committees with responsibility for enhancing the quality and quantity of health service-related research, particularly in primary care.

Oral Health Unit (OHU)

NPCRDC additionally played a pivotal role in helping to establish the Oral Health Unit. In 2004 the National Co-ordinating Centre for Research Capacity Development and the Chief Dental Officer (CDO) recognised the shortcomings in the knowledge base of dentistry and provided funding (£25k per annum for 3 years) to establish the Oral Health Unit (OHU) housed within NPCRDC.

The aims of the OHU were to:-

1. Expand research capacity in dentistry.
1. Develop research infrastructure in primary dental care.
2. Increase research outputs to improve dental services for patients.

The OHU proved remarkably productive and successful in terms of capacity and infrastructure building and the delivery of important policy-related projects. The OHU rapidly grew to independence from NPCRDC, following its initial 3 years pump-priming. It was able to sustain and grow its research portfolio bidding competitively to a range of research funders, and is today an internationally well recognised centre for policy-relevant research in primary dental care.

| **Research-related committees on which NPCRDC staff have served from 2005** |
|---|
| ***International***<br>Advisory Group, Scottish School of Primary Care<br>Board of Directors, Academy Health, Washington<br>COST European Union (European Cooperation in Science and Technology - Health and Humanities Board)<br>Health Research Board Health Service Research Awards Eire<br>International review panel, Centre for Evidence-Based Practice, University of Nijmegen.<br>Scientific Advisory Board, Competenz Zentrum, University of Heidelberg<br>Strategic Health Services and Policy Research Awards Committee, Canadian Institutes of Health Research. |
| ***National***<br>NIHR Research for Patient Benefit<br>NIHR Programme Grant Boards (mental health, cancer)<br>NIHR: Research Training Fellowships Awards Committee (chairman), National Coordinating Centre for Research Capacity Development.<br>NIHR: Clinician Scientist Awards Committee (chairman), National Coordinating Centre for Research Capacity Development<br>NIHR: School for Social Care Research, Advisory Board<br>NHS: national R&D Programme Methodology Group<br>NHS: Review committee for research networks, National Coordinating Centre for Research Capacity Development.<br>Department of Health: CERAG (Clinical Effectiveness Research Agenda Group) set up by Department of Health to produce an agenda for research into implementation science.<br>ESRC (small and large grants committee)<br>MRC: Health Services Research and Public Health Panel of the Medical Research Council research training awards panel.<br>MRC: MRC College of Experts<br>Academic Careers Sub-Committee (Walport Committee), UK Clinical Research Collaboration<br>Academy of Medical Sciences: Fellowship Committee (section seven),<br>Higher Education Funding Council Research Assessment Exercise: Deputy Chair, Sub-panel 8 (Primary Care)<br>Health Services Research Network Executive (Chairman)<br>Royal College of General Practitioners: Research Group<br>Royal College of General Practitioners: Practice Accreditation<br>UK-CRN Primary Care Research Strategy Group |

## Postgraduate research training

The Centre provides graduate training in research to primary care professionals and academics, including its own staff.

<u>Masters training</u>

Staff from NPCRDC worked jointly with the Graduate School of Economics and Social Science to develop a Master in Research (MRes) for health professionals and others wishing to acquire the range of skills needed to conduct good quality health services research. The course was later merged with a highly successful web-based Masters in Public Health (MPH), managed within the primary care research group. NPCRDC staff contributed significantly to the development of core modules that provide basic training in qualitative and quantitative research methodologies and introduce students to the practical considerations of conducting research in health service settings. Students then follow one of a number of pathways where they receive specialised training in specific health-related fields, including public health and primary and community care. Those wishing to pursue the Masters in Research also undertake a research project. Further details can be obtained from [www.mphe.man.ac.uk](http://www.mphe.man.ac.uk).

The MRes contributes to our capacity development programme in two ways. First, it contributes to the development of potential research leaders by acting as a feed for our PhD programme (based on a 1 year plus 3 year model), where students are expected to have achieved Master's level standard in research training before registering for their doctoral degree. Second, it contributes to the development of research-interested and research-active practitioners by providing research training for practicing providers of health and social care.

In 2006, there were approximately 120 students taking the web-based MPH/MRes course, which rose to 300 in 2008 and has been steady since then. The majority of students are registered for the MPH, though a growing number of students register for the MRes (now well used by Academic Clinical Fellows countrywide). Most students register part time and take 3-5 years to complete their programme; two-thirds of students are from the UK or EU and one-third are international students. The number of students graduating has increased year on year rising from 47 in 2009 to 71 in 2010.

<u>Doctoral training</u>

The Centre also trains students at doctoral level. Candidates for doctoral study are expected to have a Masters degree with a substantial element of research work in it; but for those who do not have one, NPCRDC chooses one of two options. Either the fellow begins by taking the MRes (one year full time or two years part time) and then proceeds to the PhD (three years full time or five years part time); or s/he registers for a three-year (five-year part time) PhD but is expected to attend selected MRes courses during the first year. All doctoral students must complete a successful 'continuation viva' at the end

of their first year, a process designed to ensure that s/he will have produced a sound and original piece of research by the time s/he comes to submit the thesis. For those attending MRes courses in their first year, satisfactory completion of those courses is a condition for proceeding to the rest of the PhD. Each student is assigned to one of our Research Themes which broadens the work of those themes and enables the student to benefit from the support of other researchers working in the same area. In addition, NPCRDC has had an active PhD student group, which meets monthly and provides students with an informal forum to discuss common issues and to share experiences.

PhD studies have been funded by a variety of sources e.g. NPCRDC cores funds, the University of Manchester strategic studentship awards, NCCRCD funded fellowships and a diverse range of external funding sources. PhD studentships funded by NPCRDC from its core programme or its NCCRCD grant are awarded on the understanding that students will apply for an external award to support their programme of study. If such an application is successful, NPCRDC adds £2K per annum to the value of the external award and withdraws the balance of its funding to reinvest in a new studentship. This strategy has proved effective in increasing overall investment in our doctoral studies programme.

The number of students pursuing doctoral studies in recent years has remained constant at around twenty students at any one time. Fifty-five students have successfully completed their doctoral (PhD, MD, MPhil) studies during the NPCRDC contract of which 25 were awarded in 2005-10.

| **Doctoral students with year of graduation** | | | |
|---|---|---|---|
| ***Current contract (2005-10)*** | | | |
| Robert Varnam | 2010 | Gillian Bracegirdle | 2008 |
| Mark Dushieko | 2010* | Robert Bowen | 2008 |
| Robert Owen | 2010 | Muna Ahmead | 2007 |
| Gillian Green | 2010 | Natasha Doran | 2007 |
| Thomas Blakeman | 2010 | Teresa Baga d'Uva | 2007* |
| Anne Segar | 2009 | Nicola Walsh | 2006 |
| Rosemary Ilingworth | 2009 | Hsiao-Ling Huang | 2005 |
| Claire Gately | 2009 | Catherine Reed | 2005 |
| Nagina Khan | 2009 | Mark Perry | 2005 |
| Nik Hanafi | 2009 | Joanne Protheroe | 2005 |
| Loraine Comley | 2009 | Katherine Checkland | 2005 |
| Peter Sivey | 2009* | David Morris | 2005 |
| Umesh Chauhan | 2008 | | |

* NPCRDC at the University of York

| **Doctoral students with year of graduation** | | | |
|---|---|---|---|
| ***Previous contracts (1995-2004)*** | | | |
| Anna Coleman | 2004 | Nicola Mead | 2002 |
| Diane Jones | 2004 | Susan Kirk | 2002 |
| Huw Charles Jones | 2004 | Toby Gosden | 2002 |
| Mike Gavin | 2004 | Nafisa Bedri | 2002 |
| Lynne Austen | 2004 | Giuliano Masiero | 2002 |
| Atif Rahman | 2004 | Pamela Venning | 2002 |
| Matthew Sutton | 2004* | Mark Gabbay | 2002 |
| Matthew Jowett | 2004* | Ana Xavier | 2000* |
| Simon Cocksedge | 2003 | John Wildman | 2000* |
| Al-Mousawi Mahdi | 2003 | Gurvinder Banait | 2000 |
| John Holden | 2003 | Antonio Giuffrida | 1999* |
| Susan Hinder | 2003 | James Robinson | 1998 |
| Dawn Edge | 2003 | Carolyn Chew-Graham | 1998 |
| Alan Cowie | 2002 | Lynn Brown | 1997 |
| Stephen Campbell | 2002 | David Cragg | 1997 |

* NPCRDC at the University of York

Postdoctoral training

From 2005, NPCRDC has additionally offered a one year postdoctoral fellowship to outstanding PhD students. Students may apply no more than 3 months before or 6 months after submission of their PhD. The award provides income support for a period of no more than 12 months, during which time the student is expected to secure an externally funded postdoctoral fellowship. We made two such postdoctoral awards in July 2005 to Dr Kath Checkland and Dr Joanne Protheroe. Kath Checkland went on to secure an Academic Clinical Lectureship in Primary Care and more recently a HECFE Clinical Senior Lectureship (http://www.hefce.ac.uk/Research/cslaward/). Jo Protheroe went on to secure a 5-year Post Doctoral Fellowship from the RC-UK scheme (http://www.rcuk.ac.uk/acfellow/info.htm) and a University of Manchester Stepping Stones Scheme to fund a PhD student to work with her on her programme of work. Most recently, Becci Morris has been awarded a postdoctoral fellowship to start in 2011 to allow her to write up her PhD and apply for postdoctoral awards.

Our research capacity strategy has also focused on building a legacy that would accrue ongoing benefits for primary care research both during and beyond the duration of the NPCRDC contract. We have sought to identify and support future leaders of primary care research to move on to postdoctoral awards. For example,

As a member of the National School for Primary Care Research, NPCRDC also works with other leading UK departments of general practice to train future research leaders by providing multidisciplinary training and career development opportunities for all types of professionals who can contribute to primary care research. This programme aims to complement rather than replicate the training opportunities provided by the NIHR Training Coordinating Centre and other funding agencies such as the MRC and Wellcome trust. Two of our staff at Manchester were awarded postdoctoral training fellowships under this scheme in 2010.

The primary care research group at Manchester has additionally been successful in securing funding from the Walport scheme (now NIHR) to support up to two Academic Clinical Fellows (ACF) and one Clinical Lecturer per annum. The ACF scheme supports a four year GP training programme which emphasises either education or research and allows the Fellow to complete a Masters degree. At the end of this four year training, ACFs are expected to be in a position to apply for external funding for a PhD. The Clinical Lecturer post is available to GPs who have completed a PhD and is intended to act as a bridge between their PhD studies, and establishment as an independent researcher. It is expected that, by the end of the four year post, the Clinical Lecturer will be in a position to apply for further funding.

Building on the research capacity legacy of NPCRDC will remain a priority for the Primary Care Research Group, where there are currently 22 students undertaking PhD studies. Staff have a great deal of experience of supervising PhD studies, an extensive academic presence and outstanding facilities for PhD students. In moving forward, we are keen to increase the number of funded students undertaking postgraduate study both from the UK and internationally. We would be pleased to hear from students interested in pursuing PhD studies in a primary care or a healthcare related topic. Suitable candidates will be helped to apply for external PhD funding initiatives led by the likes of the NIHR, ESRC-MRC etc. Please contact Dr Stephen Campbell on: stephen.campbell@manchester.ac.uk.

Leadership development

NPCRDC has engaged in mentoring and supporting talented young researchers to enable them to develop into research leaders of their own right. Our success is reflected in the growing numbers of our staff who have moved on to hold chairs in other universities (Baker, Sheaff, Glendinning, Rummery, MacDonald) while others have been promoted to chairs within the University of Manchester (Gask, Chew Graham). In addition, two of our staff (Roland, Lester) helped to establish and lead the primary care 'leadership' course run by the National School for Primary Care Research.

## Collaborations

We have entered into a wide number of productive research collaborations, both national and international (see table below for list). We seek out collaborators in order to complement or strengthen the knowledge and skills of our own team - and our collaborators take a similar view in working with us.

Internationally, for example, we have cooperated with countries across the EU to improve medical safety so that we, and the other partners to this project, gain an international perspective which would otherwise be lacking in our domestic research (chapter 3). Similarly, by working in partnership with research networks and researchers in EU and other countries we have gained valuable insights into the relative performance and potential of UK approaches to patient self-management (chapter 2); measurement of health system performance (chapter 3); health service organisation (chapter 4), and strategies for making maximum use of the available workforce (chapter 5). Our partners have, in turn, benefited through comparison of UK systems with their own.

Collaborative working within the UK brings similar benefits. So, for example, joint working with University College London, Imperial College, London School of Economics, Kings Fund and Oxford University was essential to creating a team with the right multi-disciplinary skills to evaluate the effectiveness of the national AAT (applied assistive technologies) pilot of whole systems care for people with long term conditions (chapter 2). In a the same vein, joint work between NPCRDC and the Royal College of General Practitioners was essential to the development a national accreditation scheme for non-clinical aspects of care, called Primary Medical Care Provider Accreditation (chapter 3); while joint work with the Health Economics Research Unit of the University of Aberdeen was essential to estimating what level of financial compensation may be needed to offset inequalities in GP distribution (chapter 5).

**Collaborations resulting in joint publications 2005-10**

***International***

Catholic University of Leuven, Belgium
Deakin University, Australia
Erasmus University, Netherlands
Griffith University, Australia
Harvard University, USA
Institute of Public Administration, Riyadh, Saudi Arabia
Johns Hopkins, United States
Leiden University, Netherlands
New England Research Institutes, Boston, USA
Kaiser Permanente, USA
RAND Corporation, Santa Monica, USA
St Andrews University, Scotland
University of Aberdeen, Scotland
University of Dundee, Scotland
University of Heidelberg, Germany
University of New Jersey Medical and Dental School, USA
University of Nijmegen, Netherlands
University of Melbourne, Australia
University of New South Wales, Australia

***National***

Cardiff University
Ernst and Young
Institute of Psychiatry
Kings College, London
Peninsula University, Plymouth
RAND Europe
Royal College of General Practitioners
University College London
University of Birmingham
University of Bristol
University of Glasgow
University of Hull
University of Liverpool
University of Newcastle
University of Nottingham
University of Sheffield
University of Wales at Bangor

# Chapter 7. Dissemination

The National Primary Care Research and Development Centre (NCRDC) is perhaps unique as a research unit in that it has invested up to 15% of its income in maintaining a professional Communications Unit to ensure the findings of its research reach the decision-makers for whom it is intended.

The Communications Unit was developed in January 2000 with a remit to facilitate and promote effective external and internal communications. It brought together our communication, library and information services. At its peak, the team comprised a: Director of Communications; Graphic Designer; Communications Officer; Library and Information Officer; Communications Assistant; Secretary; and Clerical Assistant. A large part of the work of the Unit in its initial years was to raise the profile of the Centre and to disseminate research more effectively. This made our work easily accessible, not only to fellow academics, but to NHS clinicians, managers and policy makers.

Another key area of work for the Communications Unit was to further develop relationships with key stakeholders. We successfully ran several national conferences to disseminate research findings. In addition, Centre staff have consistently worked hard to develop and maintain close relationships with key national and international organisations to ensure that our research is disseminated at appropriate meetings. We have also built good communication links with the DH to ensure that our work is effectively disseminated to policy customers.

Although publication in peer reviewed journals, books, monographs and professional journals and magazines remains at the heart of our work (see ‘List of Publications’), the Centre’s own publications help to ensure that our research findings reach a wide audience of stakeholders in a format that is easy to understand. These publications also act as signposts for people who wish to obtain more detailed information about areas of our work. Our publications are popular. Feedback gained through marketing questionnaires show that people find them clear, easy to read and understand, useful and relevant.

Our ‘Executive Summaries’, which summarise the findings of particular research projects, are carefully targeted to ensure that the right audience is reached.[1, 3, 6, 11, 17, 197, 198, 201, 202, 204, 312] Primary care organisations remain our key customer for these but we have seen an increase in the percentage sent to, and requested by, social care organisations. We also publish ‘Frontline’ – a newsletter containing a digest of research developments from NPCRDC which reaches a wide audience of NHS clinicians, managers and researchers [5, 7, 8, 107, 112, 200, 430]; and ‘Spotlight’ and ‘Briefing Papers’ – which summarise research advances in a particular topic area.[2, 9, 199, 203, 309, 311, 428, 429]

Our website (www.npcrdc.ac.uk) plays a pivotal part in our overall dissemination strategy providing a user-friendly gateway to comprehensive information about our research, staff, publications, and other forms of public output. NICE has sought permission to create links to our website. So too has Health Navigator NZ which is a charitable trust that operates a health information gateway/portal to trusted health information for New Zealanders with a particular focus on evidence-based self care and self care support.

Evidence of success in dissemination is further reflected in the large number of requests our staff receive to present the findings of our research in keynote addresses at national and international meetings. The table below provides examples of keynote addresses by our research theme leaders where all expenses were paid by the host organisation.

**Selected keynote presentations by research theme leaders**

- Gravelle H. "Connecting health and economics". European Health Economics Association, Helsinki, July 2010.
- Gravelle H. "Performance related pay for doctors: intended and unintended consequences". Australian Health Economics Association, Adelaide, October 2008.
- Gravelle H. "Pay for performance: GPs responses to the Quality and Outcome Framework". Northern Ireland Health Economics Group, Belfast, October 2007.
- Gravelle H. "Reforms in the UK Primary Care Sector". Norwegian Health Economics Association, Bergen, May 2007.
- Gravelle H. "GPs as quasi-agents in quasi-markets: experience in the UK". Nordic Health Economics Study Group, Copenhagen, August 2006.
- Harrison S. “Practice-based commissioning: theory and implementation” HSRN annual conference, Manchester, June 2008.
- Harrison S. “Performance regimes in the English National Health Service” University of Toronto conference on health systems, Toronto, September 2008.
- Lester HE. “The future of QOF and Practice Accreditation”. EQuiP AGM, London, May 2010.
- Lester HE. “P4P: is it the promised land for primary care?” Looking abroad for inspiration: Dutch GP congress. Rotterdam, February 2010.
- Lester HE. Performance related pay in the United Kingdom. Lessons for other countries. KBVA, Berlin, October 2007.
- Lester HE. “Performance related pay in the United Kingdom. Lessons for other countries.” 1st WHO/EU preparatory meeting. Brussels, March 2007.
- Lester HE. “Performance related pay in the United Kingdom. Lessons for other countries.” Australian National University, Canberra, March 2007.

- Rogers A. “How do health care professionals respond to new policies about self-management for long term conditions?” The Way Forward – Chronic Disease Self-Management in Australia. National Conference, Melbourne, July 2006.
- Rogers A. “Address  Advancing the Expert Patient?” Society of Academic Primary Care (SAPC) Galway, July 2008.
- Rogers A. “Keeping Effective Policies in Place: self care support health policy in the UK”. ACR/ARHP Scientific Meeting, Clinical Research Conference, San Francisco, USA, October 2008**.**
- Rogers A. “Experiences and lessons from the “Whole System Informing Self-Management Engagement” (WISE) training and study)” and “Are self-management programs for long-term conditions part of the problem or part of the solution to inequalities in health?”  International Congress on Chronic Disease Self Management, Melbourne, Australia. November 2009.
- Rogers A. “The Vicissitudes of the Patient Perspective, Self management, Health Services Research and Policy”.  BSA Medical Sociology Annual Conference, Durham, September 2010.
- Roland M. “Paying UK primary care physicians for quality: a major experiment”.  2$^{nd}$ Annual World Health Care Congress, Washington DC, February 2005.
- Roland M. “Is there a future for family medicine?” North American Primary Care Research Group, Quebec, October 2005.
- Roland M. “Linking 25% of UK FP’s pay to quality of care: a major experiment in quality improvement”.  International Society for Quality in Healthcare, Boston, October 2007.
- Roland M. “The Beatles and Pay for Performance. A look at the latest British export to hit the colonies.”  Al Williams Memorial Lecture, RAND Corporation, Santa Monica Tea, January 2008.
- Roland M. “Using pay for performance to improve quality of care”. Huntley Memorial Lecture, University of North Carolina, Chapel Hill, April 2009.
- Roland M. “Improving quality of care: a priority for all health services”. Ministry of Health, China and Beijing University, Beijing,October 2010.
- Sibbald B. “Nurse doctor substitution in primary care.” Keynote. EQUIP (Quality in Primary Care) European conference, Barcelona, November 2006.
- Sibbald B. “Changing skill mix. Is it the answer?” Academy Health Annual Scientific Conference, Seattle, June 2006.
- Sibbald B. “New primary care teams.” European Practice Association, Berlin, May 2009.
- Sibbald B. “The management of multi-morbidity in primary care”. Royal College Australian General Practice conference, Perth, Australia, October 2009.
- Sibbald B. “Skill mix in primary care”. The UK Experience IRDES, Paris, October 2009.

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- Sutton M. “Healthcare Financing and Payment Schemes: Experience from England”. European Health Forum Gastein, Austria, October 2010.
- Sutton M. “The effect of provider incentives on socioeconomic inequalities in health: consequences of the UK Quality and Outcomes Framework.” Health. Happiness. Inequality. Modelling the Pathways between Income Inequality and Health, Darmstadt, Germany, June 2010.

The sustained investment of the Department of Health has enabled us to create one of the best primary care research centres in the world. We will continue to build on that investment, securing new and more diverse sources of income to advance knowledge in the field of primary care policy and practice. The knowledge of enduring value that the National Primary Care Research and Development Centre has developed over its 16 year history will continue to be made available through its archived website (www.npcrdc.ac.uk) from January 2011. Links to the ongoing web-based resources of the new Health Sciences group have been created to allow people to keep abreast of our future work in primary care.

# Chapter 8. Conclusion

NPCRDC has successfully fulfilled its remit to-

1. ***Deliver high quality, policy-relevant research to inform the development of primary health care.***
   Throughout its existence, NPCRDC has established an international reputation for leading edge research in primary health care. The quality of this research has been recognised by top scores in successive research assessment exercises (RAE). In 2001, primary care in Manchester achieved the highest 5* grade, and in the 2008 RAE, 80% of our work was assessed as 3* or 4* (internationally excellent or world leading). This achievement has been recognised through membership in the NIHR National School for Primary Care Research which brings together the top-rated university departments of primary care in England.

2. **Disseminate research findings to promote the development of evidence-based primary health care.**
   NPCRDC has actively disseminated evidence from its research through: high quality scientific publications; newsletters and briefing papers written specifically for frontline decision-makers in the NHS; and conferences and presentations to both academic and professional audiences - producing nearly 600 scholarly outputs in the period 2005-10 (chapter 7). Evidence from our research has had a significant impact on policy and practice in the NHS as described in preceding chapters of this report (chapters 2-5).

3. ***Develop research capacity in primary care through the provision of support, training, and staff development.***
   NPCRDC has trained people at Masters, Doctoral, and Postdoctoral level to produce a substantial cadre of people able to undertake high quality health services research in primary care and related fields (chapter 6). The number of students graduating from our Masters level courses has increased year on year rising from 47 in 2009 to 71 in 2010. Fifty-five students have successfully completed doctoral degrees (PhD, MD, MPhil) supported by NPCRDC. Our postdoctoral fellows have all successfully moved forward to obtain further prestigious training awards. Seven of our staff members have been promoted to professorial positions.

This report signals a key change in our 16 year-long history as a policy research unit of the Department of Health in England. In December 2010 the National Primary Care Research and Development closed as part of the Department of Health's wider initiative to refresh its policy research programme through disinvestment in its current policy research units and the creation of entirely new ones. While primary health care remains an area of key importance for policy-makers there will no longer be a dedicated unit tasked with leading policy-relevant research in the field. Primary health care will instead be subsumed within a more holistic, system-wide approach to health policy research which will be adopted by the ten newly created policy research units.

From January 2011, the knowledge and expertise developed by the National Primary Care Research and Development Centre will be taken forward through the "Health Sciences" group of the University of Manchester. This group, founded in January 2010, brings Manchester's primary care researchers, including those in the National Primary Care Research and Development Centre, together with experts in health research methodology (economics, statistics, informatics) and health psychology to form a powerful new unit dedicated to improving health care policy and practice through high quality research.

Organisational change has energised our research teams and broadened our skills base making us better able to meet the challenges that lie ahead. Working collaboratively under its new head, Professor Anne Rogers, the Health Sciences group has already secured major research contracts that will sustain and grow its programmes of work for many years into the future. A number of these are described below.

## Forward work

### Self-management

We are developing a coordinated programme of research to create, adapt and implement strategies for self care support for socially disadvantaged people with long term vascular conditions. Through the CLAHRC for Greater Manchester were are conducting research to elicit people's needs, and the nature of their health and social contexts, to develop information and strategies which can be used and evaluated within an existing evidenced based approach to guided self-management support. The study will investigate the types of networks implicated in self care and explore the manner in which home and work impact on the management of long term conditions. In addition we are rolling out and evaluating a programme of self-care for people with chronic gastrointestinal disorders with the help of an NIHR programme grant. This RCT encourage all practices PCT to adopt a structured and patient-centred approach in their routine management of long-term conditions, providing the practice with skills, resources and motivation to make changes to service delivery in line with the principles of the WISE approach.

Quality

The contract to work with NICE developing the Quality and Outcomes Framework continues until 2013. We are busy piloting all potential new indicators and also advising more generally on the structure and content of the wider framework. This includes work on moving toward a more outcome focused framework with a stronger public health focus in line with the 2010 white paper "*Equity and excellence: Liberating the NHS*". We will continue to undertake high quality research in the field and disseminate this work nationally and internationally.

Our primary care practice accreditation (PA) scheme has now been formally adopted as the Royal College of General Practitioner's main accreditation scheme (http://www.rcgp.org.uk/professional_development/team_quality/pmcpa.aspx). It was specifically mentioned by Andrew Langsley at the RCGP conference in October 2010 as a mechanism to improve the quality and safety of patient care. PA will be implemented across England in early 2011 and we expect a high uptake since there are synergies between PA and the Care Quality Commission. Any practice with PA will receive a 'light touch' from the CQC when compulsory registration requirements are introduced 2012. Helen Lester continues Manchester's involvement with PA through her role as the research lead for the RCGP and member of the PA internal delivery group.

Organisations

From January 2011, the Organisation research team will be re-branded as the Health Policy, Politics and Organisation group (HiPPO) within the Health Sciences Group - Primary Care at The University of Manchester. Initially, the largest proportion of our work will be funded through the newly established 'Commissioning and the Health System' policy research Unit funded by the Department of Health and undertaken in collaboration with the Service Delivery and Organisation research group at the London School of Hygiene and Tropical Medicine. Here we will be researching issues around commissioning and system management, clinically-led commissioning, measurement of health gain from commissioning and commissioning for health improvement.

Workforce

The University of Manchester was selected as the academic partner to provide research evidence and analysis to the new Centre for Workforce Intelligence (www.cfwi.org.uk) funded by the Department of Health. This Centre will provide authoritative advice to Ministers and the NHS on workforce planning. We will to inform the horizon scanning and workforce planning models used by the Centre. Manchester's contribution will be underpinned by the research expertise on labour supply, team composition and geographical distribution that NPCRDC's workforce theme has accumulated over the last 12 years.

We also plan to continue our series of National GP Worklife Surveys. The 2010 survey, which was funded partly by the Department of Work and Pensions, will report in March 2011. We will seek further funding to continue this survey.

Health economics

The Centre for Health Economics in York has been the main source of economics expertise in NPCRDC since 1995. CHE was successful in bidding for two of Policy Research Programme Research Units which will run from January 2011, initially for five years. The new units will cover Economics of Health and Social Care Systems and Economic Evaluation of Health and Care Interventions. Research on primary care and its links with secondary, community and social care will continue especially in the Economics of Health and Social Care Systems unit.

# List of staff 2005-10

Please note that we have listed all staff employed by NPCRDC at any time during the period 2005-10.

**SENIOR STAFF**

Laura Blake, Director of Communications

Dr Peter Bower, Reader in Health Services Research

Dr Stephen Campbell, Senior Research Fellow

Professor Carolyn Chew-Graham, Professor of Primary Care

Professor Linda Gask, Professor of Primary Care Psychiatry

Professor Steve Harrison, Professor of Social Policy, Associate Director of NPCRDC

Professor Hugh Gravelle, Professor of Economics University of York, Associate Director of NPCRDC

Andrea Hutcheson, Administration Manager

Tracey Jamieson, Administration Manager

Dr Anne Kennedy, Senior Research Fellow

Professor Helen Lester, Professor of Primary Care, Deputy Director of NPCRDC

Dr Ruth McDonald, Senior Research Fellow

Professor Martin Marshall CBE, Professor of General Practice

Dr David Reeves, Senior Research Fellow

Professor Anne Rogers, Professor of the Sociology of Health Care, Associate Director of NPCRDC

Professor Martin Roland CBE, Professor of General Practice, Associate Director of NPCRDC

Professor Bonnie Sibbald, Professor of Health Services Research, Director of NPCRDC

Professor Matt Sutton, Professor of Health Economics, Associate Director of NPCRDC

**RESEARCH AND DEVELOPMENT STAFF**

Dr Andy Bowen, Research Associate

Dr Anna Coleman, Research Fellow

Sudeh Cheraghi-Sohi, Research Associate, former postgraduate fellow

Dr Umesh Chauhan, Clinical Research Fellow

Dr Kath Checkland, Clinical Senior Lecturer

Dr Tim Doran, Clinical Research Fellow

Dr Bernard Dowling, Research Fellow

Dr George Dowswell, Research Fellow

Mark Dusheiko, Research Fellow (York)

Martin Eden, Research Assistant

Dr Catherine Fullwood, Research Associate

Claire Gately, Research Associate now Honorary Associate

Dr Mike Gavin, Research Associate

Dr Islay Gemmell, Research Fellow

Rosalind Goudie, Research Associate

Dr Mark Hann, Research Fellow

Dr Elaine Harkness, Research Associate

Dr Mark Harrison, Research Associate

Rebecca Hays, Research Assistant

Dr Urara Hiroeh, Research Associate

Dr Arne Hole, Research Associate (York)

Dr Victoria Lee, Research Associate

Dr Evangelos Kontopantelis, Research Fellow

Dr Wendy Macdonald, Research Fellow

Dr Imelda McDermott, Research Associate

Dr Nicola Mead, Research Fellow

Dr Susan Mead, Research Fellow

Elizabeth Middleton, Research Associate

Dr Susan Pickard, Research Fellow

Dr Jo Protheroe, RCUK Clinical Research Fellow

Dr Katie Reed, Teaching Fellow and MPH/MRes

Dr Caroline Sanders, Research Fellow

Dr Rita Santos, Research Fellow (York)

Dr Stephanie Snow, Research Associate

Dr Jose Valderas, Clinical Lecturer

Andrew Wagner, Research Fellow

Diane Whalley, Research Fellow

**ADMINISTRATIVE CLERICAL AND SUPPORT STAFF**

Lee Ashton, Finance Officer

Nan Bailey, Research Interviewer

Annette Barber, Secretary/ Quality and Outcomes Framework (QOF) Administrator

Elke Brown, Computer Officer

Jane Castree, Secretary

Kate Davies, Clerical Assistant

Dr Catherine Deering, Assistant Librarian

Ella Gaehl, Research Interviewer

Caroline Gardner, Trials Manager WISE Project

Andrew Hardman, Finance Manager

Alan Havern, Finance Manager

Julie Havern, Secretary

Caroline Hudson, IT Manager

Kathryn Kelly, Research Nurse

Tina Kemp, Information Assistant

Gillian Leavy, Administrative Officer

Iryna Lisnyj, Receptionist and Secretarial Assistant

Lynda McIntosh, Communications Officer

Rosalind McNally, Library & Information Services Manager

Fran Morris, Secretary

Derrick Murphy, Finance Officer

Richard Newton, Communications Officer

Liz Smedley, Secretary (York)

Nicola Small, Research Technician

Angela Swallow, Research Interviewer

Carl Simms, Graphic Designer/Production Officer

Rachel Wood-Harper, Communications Officer

Sylvia Wright, Research Interviewer

**POSTGRADUATE FELLOWS**

Muna Ahmead, Research Training Fellow

Dr Tom Blakeman, NIHR Clinical Research Training Fellow

Gill Bracegirdle, Research Training Fellow

Lorraine Comley, Research Training Fellow

Natasha Doran, Training Fellow

Sidney Farias, Research Training Fellow

Rachel Foskett-Tharby, Research Training Fellow

Dr Nik Sherina Hanafi, Clinical Research Training Fellow

Julia Hiscock, Research Training Fellow

Nagina Khan, MRC Research Training Fellow

Rebecca Morris, Research Training Fellow

Yolanda Martinez, Research Training Fellow

Robert Owen, Research Training Fellow

Seamus Ryan, Research Training Fellow

Julia Segar, Research Training Fellow

Nicola Small, Research Training Fellow

Dr Catherine Snape, Clinical Research Training Fellow

Dr Robert Varnam, Clinical Research Training

Nicola Walsh, Training Fellow

**JOINT APPOINTMENTS, HONORARY APPOINTMENTS AND OTHERS CONTRIBUTING TO THE CENTRE'S PROGRAMME**

Professor Carol Baxter, Honorary Senior Fellow

Dr Jose Braspenning, Honorary Senior Lecturer

Professor Judy Cantrill, Pharmacy Joint Appointment/Professor of Medicines Pharmacy

Dr Huw Charles Jones, Honorary Research Fellow

Professor Glyn Elwyn, Honorary Professor

Professor Aneez Esmail, Professor of General Practice, Division of Primary Care Practice

Professor Richard Grol, Honorary Professor

Dr Arne Hole (York)

Dr Miranda Laurant, Honorary Senior Lecturer

Dr Stephen Morris, Honorary Visiting Senior Research Fellow

Jenny Noble, Honorary Research Associate

Professor Diane Parker, Professor of Psychology

Dr Gerry Richardson, Senior Research Fellow and Health Economist (York)

Professor Rod Sheaff, Honorary Senior Research Fellow

Dr Tim Stokes, Honorary Senior Lecturer

Professor Barbara Starfield, Visiting Professor

Dr Michel Wensing, Honorary Senior Research Fellow

Professor Doug Wholey, Honorary Visiting Senior Research Fellow

# List of publications

## Publications 2005

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