



HRB CENTRE FOR
PRIMARY CARE RESEARCH

HRB Centre for Primary Care Research



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ROYAL COLLEGE OF SURGEONS IN IRELAND
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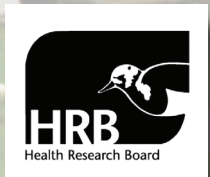
Creating and translating evidence-based knowledge in primary care



HRB CENTRE FOR
PRIMARY CARE RESEARCH

NATIONAL CENTRE FOR PRIMARY CARE RESEARCH IN IRELAND

*The HRB Centre for Primary Care Research
is a 5 year scientific and educational venture
between the Royal College of Surgeons in Ireland,
Trinity College Dublin and Queen's
University Belfast, funded by the
Health Research Board (HRB) in Ireland*



HRB CENTRE FOR PRIMARY CARE RESEARCH



The HRB Centre for Primary Care Research is the national centre for research in primary care in Ireland. The Centre was established in 2008 and represents a five-year national research and educational programme funded by the Health Research Board (HRB) in Ireland and led by the Royal College of Surgeons in Ireland, in collaboration with Trinity College Dublin and Queen's University Belfast (www.hrbcentreprimarycare.ie).

The HRB Centre for Primary Care Research programme comprises three related Work Packages. Work Package 1 aims to establish evidence-based standards for quality of clinical care in vulnerable patient groups. There is a particular emphasis on effective medicine monitoring in older people, individuals with multimorbidity, pregnant women, children and drug users. Work Package 2 focuses on evidence-based diagnosis in primary care. A register of clinical prediction rules (CPRs) is being established as part of the Cochrane Primary Health Care Field (www.cochraneprimarycare.org), along with systematic reviews of common clinical conditions in relation to the diagnostic accuracy of symptoms, signs and diagnostic tests available in primary care. Work Package 3 is based on the observational epidemiological research concerning quality of care and medicines management developed in Work Package 1. Work Package 3 involves the development and evaluation of Information and Communication Technology (ICT) interventions in the form of computer-based clinical decisions support systems (CDSSs) and electronic clinical prediction rules (eCPRs). These are designed to enhance the safety and quality of care patients receive.

We have already taken significant steps in meeting these objectives and look forward to translating this research into clinical practice in primary care.

Professor Tom Fahey, Principal Investigator
HRB Centre for Primary Care Research

OUR RESEARCH ACTIVITIES

Work Package 1: Medicine management in vulnerable groups

Prescribing of medication is one of the most common interventions that patients will experience. The quality and standard of drug prescribing and the potential for medication error is an international public health concern. We are focusing our research on vulnerable patient groups, particularly older people, individuals with multimorbidity, pregnant women, children and drug users. These five groups are the focus of Work Package 1 through observational epidemiological studies that assess the quality of prescribing in terms of appropriateness and error.



- (i) **Older people:** Elderly patients often have multiple conditions requiring multiple drug therapy. The quality of care on appropriateness of prescribing is evaluated through the use of validated quality indicators. Studies in this work stream examine indicators of prescribing quality and efficiency in Ireland and the UK.
- (ii) **Multimorbidity:** This research programme aims to explore patterns of multimorbidity in primary care patients and determine the links between multimorbidity and health service utilisation. An intervention will be developed to improve outcomes for individuals with multimorbidity.
- (iii) **Pregnant women:** This research programme aims to assess the prevalence, predictors and perinatal outcomes for medications taken during pregnancy and the impact of alcohol in the peri-conceptual period in an Irish setting.
- (iv) **Children:** Researchers in the Centre will assess the quality, safety and patterns of prescribing in Irish children.
- (v) **Drug users:** Drug misuse is a major public health problem in Ireland and Europe. This research aims to identify risk factors associated with mortality among patients receiving methadone maintenance treatment in Ireland and make comparisons with other national community-based cohorts.

The evidence formulated in Work Package 1 forms the basis for Information and Communication Technology (ICT) interventions, developed and assessed in Work Package 3, that aim to improve the appropriateness and safety of prescribing.

OUR RESEARCH ACTIVITIES

Work Package 2: Evidence based diagnosis: clinical prediction rules

The overall focus of Work Package 2 is to create evidence-based knowledge in primary care. Errors in diagnosis, therapy and management can be reduced through the application of evidence-based research at the point of patient care. We are addressing these issues through both primary and secondary research. Current work here is divided into four sections:

- (i) Together with the Cochrane Primary Health Care Field (www.cochraneprimarycare.org), we are developing an International Register of Clinical Prediction Rules relevant to primary care. Clinical Prediction Rules (CPRs) are clinical tools that quantify the contribution of patient history, physical examination and diagnostic tests and stratify patients according to the probability of having a target disorder. They have been developed, validated and used in primary care.
- (ii) The Centre is conducting systematic reviews of current CPRs relevant to primary care. Systematic reviews represent the highest level of evidence and should be used to inform best clinical practice. Currently there are a number of completed and ongoing systematic reviews of CPRs in the areas of respiratory illness (e.g., the Centor score, which is used to predict streptococcal pharyngitis in adults with sore throat) and cardiovascular disease (e.g. the CHADS2 rule, which is used to predict risk of stroke in adults with non-rheumatic atrial fibrillation). A number of systematic reviews have also been completed to examine the clinical value of signs and symptoms of common conditions, including urinary tract infection and frozen shoulder.
- (iii) Researchers at the Centre are validating CPRs in a range of clinical areas through the integration of CPRs onto an ICT platform. Specifically, we examine diagnostic and therapeutic error made at the primary/secondary care interface.



OUR RESEARCH ACTIVITIES

Work Package 3: Information and communication technology

The work in this package consists of two parts: (i) clinical decision support systems (CDSSs) and (ii) electronic clinical prediction rules (eCPRs).

- (i) CDSSs are designed to improve clinical decision making at the point in time decisions are made. They are integrated with the electronic patient record, have a computerised knowledge and software algorithm and provide patient-specific information. CDSSs improve clinical management by altering health professional behaviour. We are developing and evaluating CDSSs on medicines management at the primary/secondary care interface and on potentially inappropriate prescribing in primary care. These CDSSs incorporate support for correct dosing, monitoring and review, to enable quality improvement initiatives in primary care.
- (ii) eCPRs are developed on the basis of the register of CPRs and synthesis of work undertaken as part of Work Package 2. The purpose of developing these eCPRs is to establish a platform for the implementation of evidence-based diagnosis in primary care. The content will be regularly updated and will link to the Cochrane Primary Health Care Field where the Register will be hosted.

The TRANSFoRm Project

Our Centre is also a collaborative partner in the EU FP7 ICT project TRANSFoRm (Translational Research and Patient Safety in Europe: www.transformproject.eu). The project aims to develop an ICT based infrastructure to support the vision of the learning healthcare system through dissemination of evidence-based clinical knowledge to frontline primary care practice. This will be achieved through the provision of tools to develop electronic research trials of primary care patient data, with a view to generating diagnostic clinical prediction rules (CPRs) that can be deployed as part of a functional decision support system. We are developing computable representations of CPRs while leading the Work Package 4 entitled “Decision Rules and Evidence” in the Project.



PROGRAMME MANAGEMENT COMMITTEE AND ADMINISTRATION

Tom Fahey - RCSI

Tom Fahey is Professor of General Practice at RCSI and is principal investigator for the HRB Centre for Primary Care Research. Prof Fahey has 18 years experience of clinical general practice including working as a GP in Oxford, Bristol, Dundee and Dublin (Belgrave Clinic, Ranelagh). He is currently responsible for the primary care curriculum of the RCSI Medical School. He is lecturer and examiner for undergraduate and postgraduate degrees at universities both nationally and internationally.

Tom O'Dowd - TCD

Tom O'Dowd is Professor of General Practice at Trinity College Dublin since 1993. He is a General Medical Service scheme principal in active practice in the Mary Mercer Health Centre, Tallaght. He oversees the primary care curriculum of the Trinity College Medical School and external examiner for undergraduate and postgraduate degrees at universities in Ireland and the UK.

Carmel Hughes - QUB

Carmel Hughes is Professor of Primary Care Pharmacy and Director of Research for the Pharmaceutical Science and Practice cluster at the School of Pharmacy, Queen's University of Belfast. She is joint clinical lead for the Primary Care Research Network, affiliated with the UK Clinical Research Network. She teaches on the Pharmacy course (MPharm Degree) and is a module co-ordinator for two modules on aspects of pharmacy practice, policy and evidence-based health care.

Borislav D Dimitrov - RCSI

Borislav Dimitrov is Senior Research Fellow (Research Methodology), Programme Manager and Coordinator of the Centre. He currently lectures, supervises and examines on the MCh Course and the HRB PhD Programme in Health Services Research. Borislav also provides methodological, statistical and epidemiological support to projects and research themes in RCSI.

Administration

Niall Doherty - RCSI

Niall is the Project Officer and first point of contact for the HRB Centre for Primary Care Research.

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EDUCATIONAL ACTIVITIES

Undergraduate education

The HRB Centre offers elective research placements to undergraduate medical students. Staff at the Centre support research placements for students from a number of national universities. The Centre also facilitates an Erasmus research programme for medical students in collaboration with Radboud University, Nijmegen, The Netherlands.

Postgraduate education

The HRB Centre contributes to the following postgraduate teaching programmes:

- (i) Health Research Board PhD Scholars programme (four year structured PhD programme in collaboration with TCD and UCC)
- (ii) Masters in Surgery (MCh) postgraduate programme (teaching research methodology and methodological supervision of MCh candidates)
- (iii) MSc in Ethics and Law
- (iv) Masters in Neurology and Gerontology (delivered by the School of Physiotherapy)

Short course in health research methods

As part of the Division of Population Health Sciences postgraduate activity, the Centre also delivers a week-long short course programme in applied research methods. The aim of the course is to provide students with methodological training, facilitating the development of competencies appropriate for health research. This practical, hands-on course is intended for anyone who is either planning or carrying out health research. Further details on this course can be viewed at www.rcsi.ie/phssshortcourse.



Back Row: Patrick Redmond

Middle Row (left to right): Rose Galvin, Brian Cleary, Claire Keogh, Niall Doherty, Barbara Clyne, Caitriona Cahir

Front Row (left to right): Derek Corrigan, Ronan McDonnell, Nicola Motterlini, Susan Smith, Marie Bradley, Tom Fahey, Borislav Dimitrov

SELECTED PUBLICATIONS *

Work Package 1

Barnett K, McCowan C, Evans JMM, Gillespie ND, Davey PG, **Fahey T**. Prevalence and outcomes of potentially inappropriate medicines use in the elderly: cohort study stratified by residence in nursing home or in the community. [*BMJ Quality and Safety in Health Care*](#) 2011; 20: 275-281.

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Cousins G, Teljeur C, Motterlini N, McCowan C, Dimitrov BD, Fahey T. Risk of drug-related mortality during periods of transition in methadone maintenance treatment: A cohort study. [*Journal of Substance Abuse Treatment*](#) 2011; 41: 252-260.

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Work Package 2

Aalbers J, O'Brien KK, Chan WS, Dimitrov BD, Teljeur C, Fahey T. Predicting streptococcal pharyngitis in adults in primary care: a systematic review of the diagnostic accuracy of symptoms and signs and validation of the Centor score. [*BMC Medicine*](#) 2011; 9: 67.

Galvin R, Geraghty C, Motterlini N, Dimitrov BD, Fahey T. Prognostic value of the ABCD2 clinical prediction rule: a systematic review and meta-analysis. [*Family Practice*](#) 2011; 28: 366-376.

SELECTED PUBLICATIONS

Galvin R, Callaghan C, Chan WS, Dimitrov BD, Fahey T. Injection of botulinum toxin for treatment of chronic lateral epicondylitis: systematic review and meta-analysis. [*Seminars in Arthritis and Rheumatism*](#) 2011; 40: 585-587.

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Keogh C, Wallace E, Dillon C, Dimitrov BD, Fahey T. Validation of the CHADS2 clinical prediction rule to predict ischaemic stroke. A systematic review and meta-analysis. [*Thrombosis and Haemostasis*](#) 2011; 106: 528-538.

Ohle R, O'Reilly F, O'Brien KK, Fahey T, Dimitrov BD. The Alvarado score for predicting acute appendicitis: A systematic review. [*BMC Medicine*](#) 2011; 9: 139.

Wallace E, Smith SM, Perera-Salazar R, Vaucher P, McCowan C, Collins G, Verbakel J, Lakhampaul M, Fahey T. International Diagnostic and Prognosis Prediction group (IDAPP) group. Framework for the impact analysis and implementation of Clinical Prediction Rules (CPRs). [*BMC Medical Informatics and Decision Making*](#) 2011; 11: 62.

Work Package 3

Dimitrov BD, Fahey T. Primary health care models and suitability for provision of e-services: an overview. In: [*Proceedings of the Transforming Government Workshop \(tGov\)*](#), March 18-19 2010, Brunel University, London, UK, 2010.

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**All links are up-to-date as of March 2012*

GOVERNING BODY, RESEARCH STAFF AND COLLABORATORS *

Steering Committee

Tom Fahey (Principal Investigator) – RCSI
Tom O’Dowd – TCD
Carmel Hughes – QUB
Borislav D Dimitrov – RCSI
Hannah McGee – RCSI
Deirdre Murphy – TCD
Susan Smith – RCSI
Lucy Hederman – TCD
Kathleen Bennett – TCD

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Daniel Clear – RCSI
Derek Corrigan – RCSI
Emma Wallace – RCSI
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Harry Comber – National Cancer Registry
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Sean Higgins – Galway
Stephen McMahon – Irish Patients’ Association
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Wai Sun Chan – RCSI
Walter Cullen – UL

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Knut Schroeder – University of Bristol (UK)
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HRB PhD Scholars

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Brian Cleary – TCD
Caitriona Cahir – RCSI

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**Listed alphabetically by first name
(except Steering Committee Members)*

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Useful links

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