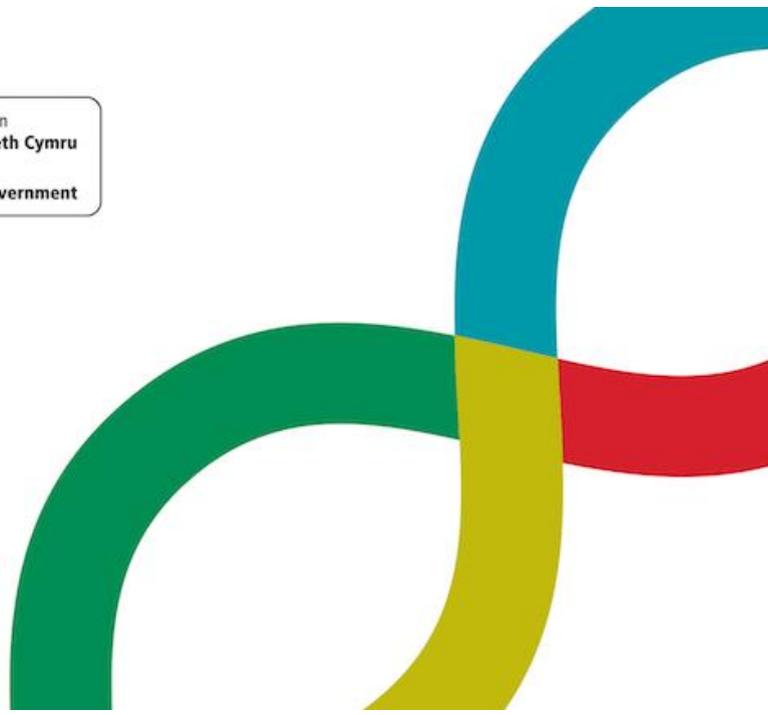




Canolfan PRIME Cymru Wales PRIME Centre



2016-17 Annual Report



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FOREWORD

We are delighted to present this second Annual Report for PRIME Centre Wales – the Centre for research into the primary and emergency care sectors. These are **essential sectors for research** – over 90% of all patient contacts occur here, and efficiency and effectiveness of the whole system depends on strong primary and emergency care sectors working together. A strong academic base for this is paramount.

PRIME Centre Wales has been hugely successful in capturing funding, delivering **research, knowledge transfer and impact** for this vital area. We brought together two previously successful entities (Wales School for Primary Care Research and TRUST Network for Unscheduled Care Research), and added new partners from all of Wales and across disciplines. The new **collaborations have been highly synergistic**, demonstrating new and valuable research across nursing, dental, medical and social care and allied disciplines.

We are pleased to present evidence of our success to date, including > £18,000,000 of research income secured since April 2015 (with >£11,000,000 accruing to Wales), >160 high quality publications, and 9 new PhD students showing capacity building for the future.

We are particularly pleased with the difference this is making and will make in the future for the people and service providers of Wales. We address **policy relevant domains** such as cancer care delivery, antibiotic stewardship, health and social care interface, prudent health care, workforce planning and health inequalities.

We engage with the public, patients, government, and NHS and social care partners. Our structure and methods for **Patient and Public Involvement** are exemplars being emulated across the UK.

We demonstrate **impact cases** across the sectors, including: building family resilience through health visiting, improving oral health of children, implementing effective emergency care management for older people who fall, or others at high risk of admissions, minimising antimicrobial resistance, improved patient safety, and promoting patient-centred holistic care.

Adrian Edwards, Director, PRIME Centre Wales

Professor of Primary Care, Cardiff University

Helen Snooks, Associate Director, PRIME Centre Wales

Professor of Health Services Research, Swansea University

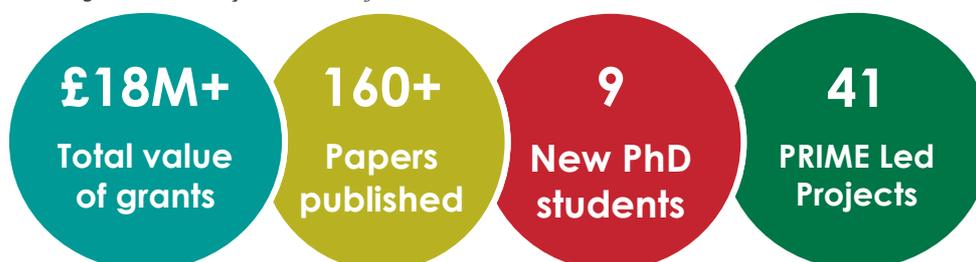
Joyce Kenkre, Associate Director, PRIME Centre Wales

Professor of Primary Care, University of South Wales

Nefyn Williams, Associate Director, PRIME Centre Wales

Senior Clinical Lecturer, Bangor University Director of R&D BC UHB

From April 2015
to March 2017:



ACKNOWLEDGEMENTS

We gratefully acknowledge the funding from Health and Care Research Wales that has made PRIME Centre Wales possible.

We also acknowledge the generous contributions of time, expertise and support from our many advisors and collaborators that enable PRIME Centre Wales to achieve its aims of high quality research, engagement and impact, and without which this would not be possible. In particular we thank the members of our international External Advisory Board, our Executive Management Committee and our Faculty of stakeholders across public, patient, policy, government, third sector, industry and academic sectors.

We also make a special acknowledgement to Professor Richard Neal, who was one of our Associate Directors at inception, lead for Bangor University in PRIME Centre Wales, and also co-lead of our Screening Prevention and Early Diagnosis Workpackage. Richard departed during this last year to take up an exciting opportunity as Professor of Primary Care Oncology at University of Leeds. He is very much missed by all PRIME Centre colleagues, but remains an important strategic collaborator and advisor, and we wish him well in his next career stage.



Professor Richard Neal, Associate Director of PRIME Centre Wales at inception in 2015, commenced new position as Professor of Primary Care Oncology at University of Leeds in August 2016

Finally, the Directors and co-applicants hugely thank the Centre staff for their highly efficient, effective and personable management of PRIME Centre – Angela Watkins and Deborah East (Cardiff University), Anne Surman and Steph McCann (Swansea University), Ceri Jenkins (University of South Wales) and Richard Evans (Bangor University).

INTRODUCTION

PRIME Centre Wales aims to benefit people in Wales by improving their health and well-being.

We do this by undertaking high-quality research on topics of national policy priority in primary and emergency care and ensuring that findings are translated into policy and practice.

The Centre aims to:

- *increase the quantity of large scale, high-quality, internationally important research carried out in or led from Wales through collaboration, encouraging recruitment of patients, and attracting prestige research funding into Wales;*
- *achieve demonstrable research impact by communicating research findings, working with stakeholders to ensure findings are implemented and tracking evidence of impact;*
- *undertake research and dissemination activities that are important to patients and the public by involving service users, carers and the wider public in the prioritisation, design, conduct, interpretation and dissemination of research; and*
- *build capacity for research in primary and emergency care in Wales, across disciplines, sectors, professional groups and levels of seniority.*

PRIME Centre Wales (Wales Centre for Primary and Emergency Care Research) is funded by Welsh Government through Health and Care Research Wales.



RESEARCH WORKPACKAGES

WP1

Long term conditions and co-morbidity

WP2

Patient centred and prudent healthcare

WP3

Infections and antimicrobial resistance

WP4

Screening, prevention and diagnosis in primary care

WP5

Unscheduled and emergency (includes pre-hospital) care

WP6

Patient safety

WP7

Oral health and primary dental care

ORGANISATIONAL STRUCTURE

External Advisory Board

- Meet yearly
- Membership: senior or experienced researchers and other stakeholders based outside of Wales
- Aim: provides independent advice on the quality of our work, critical comment on progress towards its milestones and outputs, and steer in the context of international developments, policy, and research priorities

Executive Management Committee

- Meet twice yearly
- Membership: Co-applicants, WP Leads, cross-cutting theme / strategy leads, lay members and Welsh Government
- Aim: provide advice and direction for the overall Centre strategy, together with a supportive scrutiny role, providing steer for fit with government, public and professional / service priorities, and scrutiny of progress

Operational Group

- Meet monthly
- Centre Directors, WP Leads & core-funded research and support staff
- Aim: ensure effective cross-university collaboration of team towards achieving goals of PRIME

Faculty & Collaborators

- including collaborators based at other Health and Care Research Wales research centres and units

PRIME Operational Group

Directors & Workpackage Leads/Co-Leads



Professor Adrian Edwards
Director
Professor of Primary Care, Cardiff University



Professor Joyce Kenkre
Associate Director
Professor of Primary Care, University of South Wales



Professor Helen Snooks
Associate Director
Professor of Health Services Research, Swansea University



Dr Nefyn Williams
Associate Director
Senior Clinical Lecturer, Bangor University Director of R&D BC UHB



Dr Carolyn Wallace (Co-lead with Prof Joyce Kenkre)
WP1: Long term conditions and co-morbidity
Reader in Integrated Care, University of South Wales



Dr Fiona Wood (Co-lead with Prof Adrian Edwards)
WP2: Patient centred and prudent healthcare
Senior Lecturer, Cardiff University



Dr Nick Francis
WP3: Infections and antimicrobial resistance
Reader, Cardiff University



Dr Kate Brain
WP4: Screening, prevention and diagnosis in primary care
Reader, Cardiff University



Dr Alison Porter (Co-lead with Prof Helen Snooks)
WP5: Unscheduled and emergency care
Associate Professor in Health Services Research



Dr Andrew Carson-Stevens
WP6: Patient safety
Clinical Research Fellow, Cardiff University



Prof Ivor Chestnutt
WP7: Oral health and primary dental care
Professor and Hon. Consultant in Dental Public Health, Cardiff University

PRIME Support Team

Professional services staff



Deborah East
Research Administrator
Cardiff University



Richard Evans
Research Administrator
Bangor University



Ceri Jenkins
Research Administrator
University of South Wales



Stephanie McCan
Research Administrator
Swansea University



Anne Surman
Finance & Communications Officer
Swansea University



Angela Watkins
Communications & Operations Manager
Cardiff University

WP1: Long term conditions & co-morbidity

Leads: Prof Joyce Kenkre & Dr Carolyn Wallace



Professor Joyce Kenkre (WP Lead)
 Professor of Primary Care, University of South Wales



Dr Carolyn Wallace
 Reader in Integrated Care, University of South Wales



Professor Rachel North
 Professor of Optometry, Cardiff University



Dr Gideon Calder
 Senior Lecturer in Public Health, Policy and Social Services,
 Swansea University



Professor Steve Smith
 Professor of Political Philosophy and Social Policy, University of South Wales

The long term conditions and co-morbidity workpackage addresses a hugely important healthcare domain – **over 70% of all NHS expenditure is devoted to people with multi-morbidity**. Our work has continued to build on collaborations with local health boards and industry to drive forward projects across a range of conditions.

Our ongoing projects relating to eye health include evaluating treatments for people with **cataracts** and **wet age-related macular degeneration**. Our pilot study on optimum retinal screening intervals for people with **diabetes** will allow us to better understand how the retinopathy screening service could be targeted to prevent complications amongst those at highest risk. If we can identify a low risk group, who require less frequent screening, there is the potential to reduce service costs and the burden on patients, in line with the principles of **prudent healthcare**.

Working with workpackage 5 (Unscheduled and emergency care), we have continued our work in improving the care of **frail elderly patients**. We worked with Cwm Taf University Health Board on a project exploring decision making about the need for unscheduled care among people from care homes, and have recently published findings **from a rigorous**

feasibility study for a future definitive randomised controlled trial (RCT) and economic evaluation of an enhanced **rehabilitation package for hip fracture**.

Our Bangor-led multi-centre NIHR HTA funded feasibility trial CARIAD (Carer administration of as-needed subcutaneous medication for breakthrough symptoms in home-based dying patients: a UK study) aims to improve symptom control at the end of life, benefiting also from international collaboration with Australian colleagues. We know that if carers can administer medication it can empower them and avoid distressing delays. We will train carers in how to give symptom-relieving injections and explore whether this improves symptom control, and how it impacts on the carers themselves.

Continuing this **primary care palliative medicine** theme, we secured funding from Betsi Cadwaladr University Health Board to undertake pilot work for NOBLE-PAR (Noisy Breathing at Life's End: The role of Purposeful, Anticipatory Reassurance on carer distress and the use of anti-muscarinic drugs); now shortlisted by National Institute for Health Research Health Technology Assessment Programme (NIHR HTA). This project aims to study whether a bespoke package can help family and carers to manage noisy breathing, amongst other symptoms, during home-based end of life care.

The WP1 team is actively involved in research capacity building in community nursing, with Professor Joyce Kenke as Chair and Dr Carolyn Wallace as network coordinator for the Community Nursing Research Strategy Board. The network has over 250 members and serves as a forum to promote opportunities for PhD first into research, PhD studentships and postdoctoral opportunities, as well as sharing network members' research activities on twitter and the PRIME Centre Wales news webpages.



Supporting capacity building in community nursing research

WP2: Patient centred & prudent healthcare

Leads: Prof Adrian Edwards & Dr Fiona Wood



Professor Adrian Edwards (WP Lead)
Professor of Primary Care, Cardiff University



Dr Fiona Wood (WP Co-lead)
Senior Lecturer, Cardiff University



Dr Nina Gobat
Research Fellow, Cardiff University



Dr Freya Davies
GP Clinical Research Fellow, Cardiff University



Dr Natalie Joseph-Williams
Research Fellow, Cardiff University

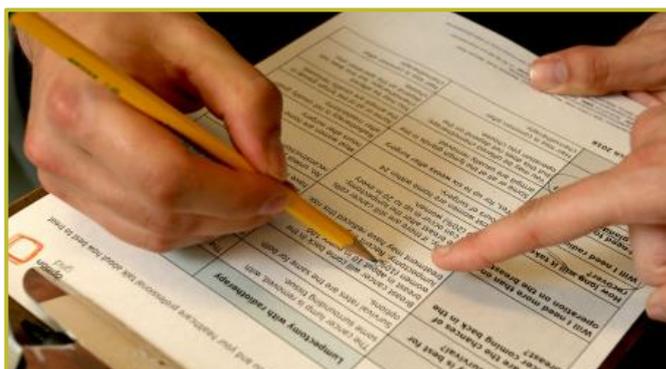


Dr Rhiannon Phillips
Research Fellow, Cardiff University

The patient centred and prudent health care workpackage has successfully achieved prestige grant funding, high impact publications and new PhD students. Our priority areas in this Work Package continue to be: (i) Shared Decision Making (SDM) and Decision aids (ii) Self-management support & health literacy (iii) Prudent Healthcare.

i) Shared decision making and decision aids

We completed the Making Good Decisions in Collaboration (MAGIC) study at the end of 2016. This last phase



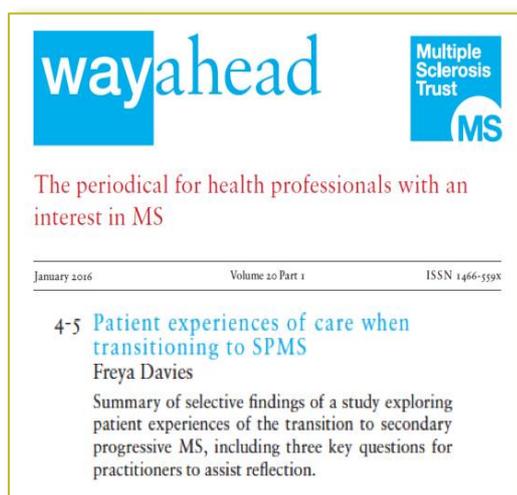
Option Grid decision making tool for breast cancer patients

of the MAGIC programme (funded by the Health Foundation) examined the process of SDM in two routine clinical settings (breast cancer and chronic kidney disease), and provided additional learning about **how and in what situations SDM works best**. Our learning from the MAGIC programme, 'Implementing shared decision making in

routine NHS settings' has been published in the *British Medical Journal* in 2017. Continuing our research in shared decision making, we have secured a large grant from the National Institute of Health Research on the **development and validation of a diagnostic and decision making aid** for men with lower urinary tract symptoms (funded by the NIHR Health Technology Assessment Programme, £1.55M).

Our team were complemented by the arrival of **two new PhD students** in October 2016. One of the PhD students aims to develop a theory based intervention to prepare young people to participate in shared decision making. Our second student has won funding from the National Institute of Health Research to develop a decision aid to support surrogate decision making for research participation.

We continue to work **two NIHR programme grants**, leading workpackages developing and evaluating decision aids for older women with breast cancer, and for people with cataracts considering surgery (with Sheffield University and Bristol University respectively).



PRIME research led by Dr Freya Davies in the Multiple Sclerosis Trust newsletter

ii) Self-Management support & health literacy

Our work in this area includes one on-going PhD study on how clinicians can support patients with **long term neurological** problems to self-manage their condition (PRIME Clinical Fellowship, Davies) and a new PhD on how health literacy can be improved in deprived communities to help patient to manage long term conditions (osteoarthritis). We have also collaborated with South East Wales Trials Unit on an application to develop and evaluate an individualised physical activity support and self-management approach for people with **progressive Multiple Sclerosis**.

iii) Prudent Healthcare

We are completing our Health and Care Research Wales funded project to explore **public and clinicians' views** of, and participation in, Prudent Healthcare and we are disseminating results of the study across academic, policy, and public community audiences (May 2017 onwards).



Ruth Hussey with PRIME researchers at South West Society for Academic Primary Care meeting 2016

WP3: Infections & antimicrobial resistance

Lead: Dr Nick Francis



Dr Nick Francis (WP Lead)
 GP Clinical Reader, Cardiff University



Dr Harry Ahmed
 Clinical Research Fellow, Cardiff University



Dr Micaela Gal
 Research Fellow, Cardiff University



Dr Kathryn Hughes
 GP Clinical Research Fellow, Cardiff University



Dr Behnaz Schofield
 Research Fellow, Cardiff University

The infections and antimicrobial resistance workpackage continues to develop and deliver high quality research that focuses on improving the management of common infections like **urinary tract, skin and respiratory tract infections**. A key aspect of our work is on **appropriate use of antibiotics** to try to limit the development of antibiotic resistance and the threat that this poses.

We are currently leading and co-leading **several high-profile national and international studies** in this area. We recently completed the CREAM trial, which showed that **children with mild to moderate infected eczema** who are treated with steroid creams and moisturisers do not benefit from the addition of antibiotics. The results have been published and presented at several national and international meetings. Coverage of the findings were



The CREAM (ChildRen with Eczema, Antibiotic Management) study findings were published in March 2017

also reported in the **national and international press** including interviews with study lead, Dr Nick Francis.

The PACE study is evaluating a new test to help determine which people with **chronic obstructive pulmonary disease** need antibiotic treatment (funded by the NIHR Health Technology Assessment Programme). Over 600 patients were recruited for this study which involves industrial partner ALERE for testing their Afinion CRP diagnostic machines in GP surgeries.



The Afinion point of care test machine used by GPs taking part in the PACE study



PRIME researchers co-lead WPs of the PREPARE project funded by the European Commission

PREPARE is a large EU funded research programme to develop a clinical research framework to ensure research can be done in future **infectious disease pandemics**. We co-lead two workpackages, with both already leading to publications this year.

We were delighted to be awarded the **Royal College of General Practitioners 'Research paper of the year'** in the 'Children, reproduction, genetics, infection' category for the results of the DUTY (Diagnosis of Urinary Tract infections in Young children' study published in the

Annals of Family Medicine.

Patient and public representatives are involved at all stages in our studies, and their input is invaluable to make sure that our studies are as good as they can be.

A key objective is to **develop capacity**, and we have four early career researchers who have successfully obtained research funding and are publishing. We also have a PhD student progressing well and are awaiting outcomes for three further PhD proposals.

We have an active research team and collaborate extensively with national and international colleagues. We have disseminated our results through presentations at **national and international meetings** and have 32 publications in last two years.

WP4: Screening, prevention & early diagnosis in primary care

Lead: Dr Kate Brain



Dr Kate Brain (WP Lead)
 Reader, Cardiff University



Dr Julia Hiscock
 Research Fellow, Bangor University



Ruth Lewis
 Research Fellow, Bangor University



Dr Stephanie Smits
 Research Fellow, Cardiff University



Professor Clare Wilkinson,
 Professor of General Practice, Bangor University

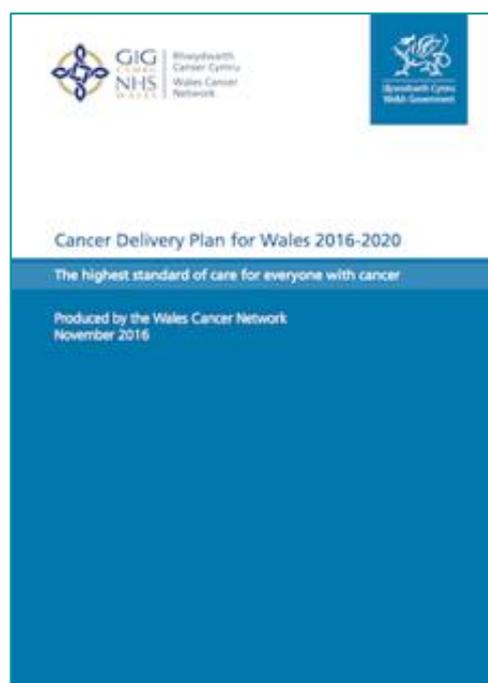


Dr Nefyn Williams
 Senior Clinical Lecturer, Bangor University; Director of R&D, BC UHB

The Screening, prevention and early diagnosis workpackage is going from strength to strength, and continues to be supported by PRIME Centre staff Julia Hiscock and Ruth Lewis in Bangor, and Stephanie Smits in Cardiff (joint post with our sister centre, the Wales Cancer Research Centre).

Over the past year, we have had great success across our key areas of (i) developing strategies to **prevent obesity related disease and reduce harm from tobacco**, (ii) increasing public awareness and improving **equitable uptake of screening programmes**, and (iii) accelerating **early diagnosis particularly for cancer**.

We have also been working with the Wales Cancer Network and the Health Boards to take forward the early diagnosis agenda as set out in the **refreshed Cancer Delivery Plan for 2016-2020**.





ABACus Phase 2 funded by Cancer Research UK aims to improve cancer symptom awareness and help seeking

won NIHR Health Technology Assessment Programme funding for a systematic review and economic model of **cancer diagnostic tool to aid decision making in primary care.**

The **Wales Interventions and Cancer Knowledge about Early Diagnosis (WICKED) programme** led by Bangor University is now underway led by Clare Wilkinson, taking over from Richard Neal. WICKED is developing and evaluating a complex intervention for health care professionals to support earlier symptomatic cancer diagnosis. The study received press and BBC Wales TV and radio coverage and has been presented to clinical and third sector audiences at conferences in Wales and England.

Our success in funding this year was greatly helped by early engagement with funders at strategic workshops including Yorkshire Cancer Research's Early Diagnosis expert meeting and the inaugural Early Detection of Cancer Conference held in Portland, Oregon by Cancer Research UK and the Knight Cancer Institute.

The **LUSH** study, funded by Cancer Research UK in October 2016, continues our theme of developing novel targeted community based interventions to engage high risk, harder to reach groups in lung cancer symptom awareness and timely symptom presentation.

New team members include Ria Poole, who will be embarking on a Cancer Research UK Fellowship to understand and limit tobacco use among young adults and Pamela Smith, who will be starting a Cardiff University funded PhD studentship to research ways of engaging **high risk groups in lung cancer screening.** Current PhD students include Annie Hendry investigating delayed presentation of lung cancer symptoms among smokers and Tania Seale looking at diagnostic journeys in **myeloma.** Other notable achievements include Grace McCutchan completing her Tenovus PhD studentship on cancer awareness in deprived communities, and joining PRIME as researcher on the LUSH study.

We are delighted to have won funding this year from Yorkshire Cancer Research to carry out Phase 3 of **Awareness and Beliefs About Cancer (ABACus)** - a large randomised controlled trial of the health check in deprived areas of Yorkshire and Wales. The health check is a targeted, community-based intervention that we have developed in partnership with Tenovus Cancer Care. The Bangor University team, in collaboration with the University of Exeter, have also successfully



WICKED study team, Bangor University

WP5: Unscheduled & emergency (including pre-hospital) care



Lead: Prof Helen Snooks



Professor Helen Snooks (WP Lead)
 Professor of Health Services Research, Swansea University



Dr Bridie Evans,
 Research Associate, Swansea University



Dr Ashra Khanom
 Research Officer, Swansea University



Mr Mark Kingston
 Research Officer, Swansea University



Dr Alison Porter
 Research Fellow, Swansea University

The unscheduled and emergency care workpackage has continued to build on our core interests around **alternative care pathways** and reductions in ambulance conveyance to the emergency department; linkage of **routine data** and its role in research; use of **risk prediction tools** in primary care; adoption and implementation of **new technology** and working practices in prehospital care; conduct of research in a prehospital context, including the **role of patients and service users** in the planning and conduct of research; and the relationship between **social care** and use of unscheduled care.



Delivering research

In this busy and productive year we continued work on a range of projects delivered in collaboration with NHS organisations and academic partners across the UK. Studies bringing significant research funding into Wales include the ERA study examining the role of

electronic records in ambulances funded by the NIHR Health Services and Delivery Research (HS&DR) Programme; PHED Data, where we are working with the London Ambulance Service to examine **linked datasets** (funded by the Health Foundation); PASTA study of prehospital care for **stroke** patients (NIHR Programme Grant); and NEAT, a study of **ethics in pre-hospital research** (funded by the Wellcome Trust).



PRIME has close links with Welsh Ambulance Service

Our close links with the Welsh Ambulance Service are reflected in our collaborations on two current projects funded through the Health and Care Research Wales Research for Patient and Public Benefit funding stream, both with PRIME co-applicant Nigel Rees from the Welsh Ambulance Services Trust (WAST) as Chief Investigator: TIER, a feasibility study of a prehospital care pathway for patients with low risk **transient ischaemic attack** (funded by Health and Care Research Wales Research for Patient and Public Benefit programme); and RAPID, a feasibility study of pre-hospital analgesia for patients with **hip fracture** (funded by Health and Care Research Wales Research for Patient and Public Benefit programme), and the associated PAPHiF study (funded by Welsh Ambulance Services Trust). We collaborate with ambulance services and academic colleagues on the PHOEBE project (Pre-Hospital Outcomes for Evidence Based Evaluation: NIHR Programme Grant) to develop new ways to measure the **impact of ambulance service care**. We completed our report for NHS England/Health Education England on the evaluation support for projects funded through the NHS111 Workforce Improvement Programme. We have also completed the PRISMATIC study (funded by the NIHR Health Services and Delivery Research (HS&DR) Programme) evaluating the introduction of the PRISM **emergency admissions risk prediction tool** in primary care.

Winning research grants

In terms of new grants awarded in this financial year, we secured a third Research for Patient and Public Benefit (RfPPB) project with WAST: PHRASE will assess the feasibility of a new prehospital care pathway for patients with **sepsis**, with Chris Moore of WAST as Chief Investigator. We were pleased to be partners with our PRIME colleagues at Cardiff University on the successful bid to National Institute for Health Research (NIHR) for a study of **GPs in Emergency Departments**. We were also successful in achieving funding for three new projects in collaboration with NHS partners through the **Pathways to Portfolio** programme, all aimed at building the foundations for future studies on a larger scale: Abertawe Bro

Morgannwg University Health Board is funding EARPS and EARPS Qual, both examining the use of **frailty tools and risk prediction tool** in primary care, and Hywel Dda University Health Board funded an evaluation of the Solva care community based **social care** project.

Building research capacity

We continue to build research capacity. All members of the PRIME team working in this workpackage have taken advantage of opportunities for training in topics such as health economics, good clinical practice, and project management. Dr Chris Horn, a Clinical Academic Fellow and practising GP, has joined us part-time. We have worked with the Welsh Ambulance Services Trust to bring research paramedics into active roles in research studies. Jenna Bulger and Mark Kingston (both Swansea University team members) and Nigel Rees and Chris Moore (Welsh Ambulance Services Trust) continue their PhD studies, and have been joined by Kate Loxton, carrying out a PhD in self-harm.

Dissemination

Our programme of dissemination and engagement has included over 20 presentations at **national and international conferences** from Swansea to Berlin. In peer reviewed journals, we published papers on the **TIER** and **RAPID** studies, on paramedic attitudes to self-harm, on the epidemiology of non-fatal poisonings, and a major paper on the findings of the **SAFER₂** study, which has informed a recent review of clinical guidelines on the care of people who fall (see also **Impact Cases**).

GERIATRICS/ORIGINAL RESEARCH
<p>Paramedic Assessment of Older Adults After Falls, Including Community Care Referral Pathway: Cluster Randomized Trial</p> <p>Helen A. Snooks, PhD[*]; Rebecca Anthony; Robin Chatters; Jeremy Dale, PhD; Rachael T. Fothergill, Dr (Clinical); Sarah Gaze; Mary Halter, PhD; Ioan Humphreys; Marina Koniotou; Phillipa Logan, PhD; Ronan A. Lyons, PhD; Suzanne Mason, PhD; Jon Nicholl, PhD; Julie Peconi, PhD; Ceri Phillips, PhD; Alison Porter, PhD; Aloysius Niroshan Siriwardena, PhD; Mushtaq Wani; Alan Watkins, PhD; Lynsey Wilson; Ian T. Russell, PhD</p> <p><i>*Corresponding Author. E-mail: h.a.snooks@swansea.ac.uk, Twitter: @HSRSwansea.</i></p>
<p>Study objective: We aim to determine clinical and cost-effectiveness of a paramedic protocol for the care of older people who fall.</p> <p>Methods: We undertook a cluster randomized trial in 3 UK ambulance services between March 2011 and June 2012. We included patients aged 65 years or older after an emergency call for a fall, attended by paramedics based at trial stations. Intervention paramedics could refer the patient to a community-based falls service instead of transporting the patient to the emergency department. Control paramedics provided care as usual. The primary outcome was subsequent emergency contacts or death.</p> <p>Results: One hundred five paramedics based at 14 intervention stations attended 3,073 eligible patients; 110 paramedics based at 11 control stations attended 2,841 eligible patients. We analyzed primary outcomes for 2,391 intervention and 2,264 control patients. One third of patients made further emergency contacts or died within 1 month, and two thirds within 6 months, with no difference between groups. Subsequent 999 call rates within 6 months were lower in the intervention arm (0.0125 versus 0.0172; adjusted difference -0.0045; 95% confidence interval -0.0073 to -0.0017). Intervention paramedics referred 8% of patients (204/2,420) to falls services and left fewer patients at the scene without any ongoing care. Intervention patients reported higher satisfaction with interpersonal aspects of care. There were no other differences between groups. Mean intervention cost was \$23 per patient, with no difference in overall resource use between groups at 1 or 6 months.</p> <p>Conclusion: A clinical protocol for paramedics reduced emergency ambulance calls for patients attended for a fall safely and at modest cost. [Ann Emerg Med. 2017; ■:1-11.]</p>

The SAFER₂ trial results published 2017

WP6: Patient safety

Lead: Dr Andrew Carson-Stevens



Dr Andrew Carson-Stevens (WP Lead)
Clinical Research Fellow, Cardiff University



Dr Huw Williams
Clinical Research Fellow, Cardiff University



Dr Alison Cooper
Clinical Research Fellow, Cardiff University

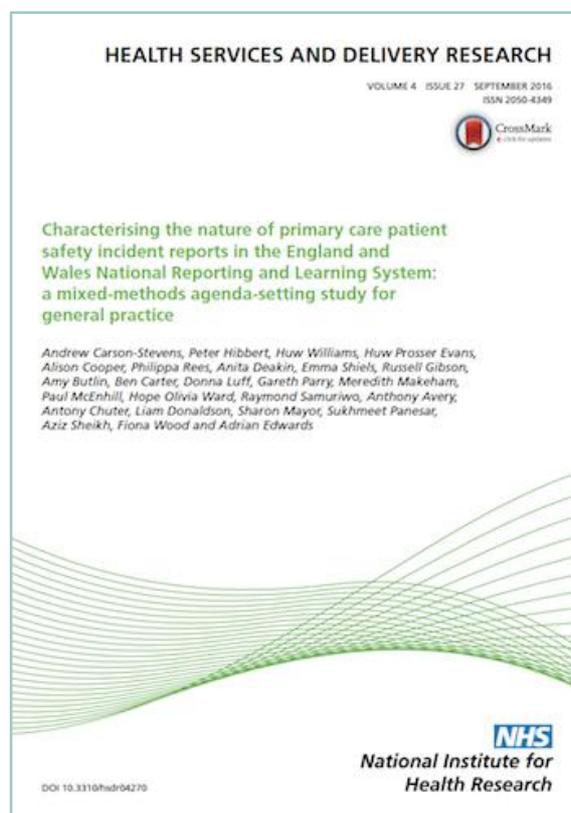
In this workpackage we aim to research the **frequency, burden and preventability of harm**, and to develop, test and implement interventions to **improve patient safety** in priority areas.

Epidemiology of patient safety

A patient safety incident occurs every 26 seconds in the NHS. Yet, despite busy healthcare professionals reporting **what happened and why** to a national database, reports seldom get read and learning about ways to make care safer is overlooked.

Educational innovation

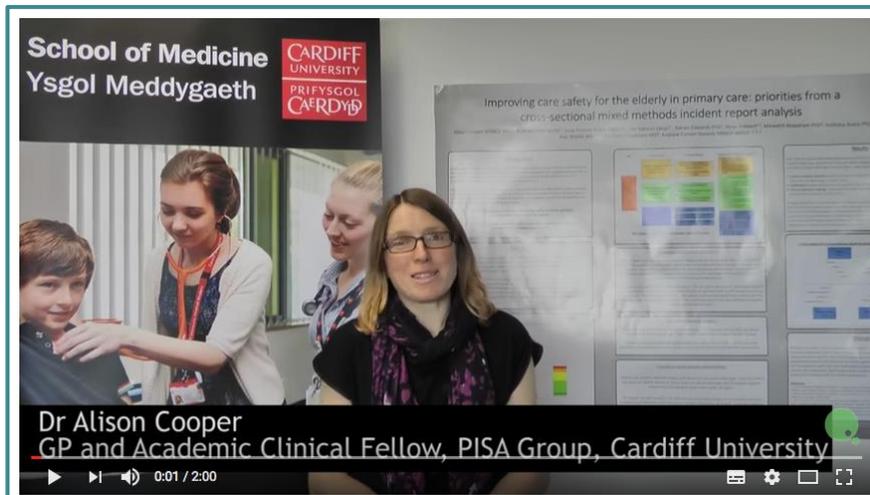
Our NIHR Health Services and Delivery Research report (pictured opposite, 'PISA') of the largest analysis of primary care patient safety incident reports worldwide was published in September 2016. Partnered with the **Royal College of General Practitioners (Spotlight Award 2016–17)**, e-learning modules, a how-to guide and three dissemination events in England and Wales were developed to support general practice teams to learn from patient safety incidents and plan projects to improve the future quality and safety of care for patients.



Andrew Carson-Stevens has supported the development, and co-taught the “Epidemiologic Methods for Quality and Safety” course at the **Harvard T.H. Chan School of Public Health**.

The curriculum features the PISA mixed methods approach as a case study to explore quality improvement and research in patient safety.

Further educational resources from PISA’s analysis of the National Reporting and Learning System (NRLS) include a series of **publicly available short films** published in association with the International Forum on Quality and Safety in Healthcare.



Dr Alison Cooper shares learning on improving care safety for the elderly in primary care

International policy influence

Andrew Carson-Stevens has co-authored a monograph in the **World Health Organization Technical Series on Safer Primary Care**, and was an expert advisor in the development of “WHO Implementation guidelines for establishing patient safety incident reporting and learning systems” (to be launched in Spring 2017). In February 2017, Dr Sabiha Denizeri joined the PISA group at Cardiff University on a 6-month secondment from Turkey (British Council Newton Travel funded). Sabiha will be translating the PISA classification system into Turkish for use in Turkish primary care patient safety.

Interventions to improve safety: Improving out-of-hours services for palliative patients

Huw Williams was awarded the RCGP Marie Curie Palliative Care Research Fellowship which aims to identify and support a future leader who brings palliative and end of life care to the forefront of primary care research. Collaborators include Aneurin Bevan University Health Board, Sir Liam Donaldson (World Health Organisation Patient Safety envoy) and Professor Joyce Kenkre at University of South Wales. Huw Williams will analyse patient safety incident reports written by healthcare professionals providing care to patients at or near the end of their lives, which have highlighted areas for improvement in out-of-hours services. He will develop and implement initiatives that will lead to more timely and effective symptom management for patients at the end of life, give them better access to out-of-hours services, and increase awareness of patients’ preferences and treatment goals amongst out-of-hours providers.

WP7: Oral health & primary dental care

Lead: Prof Ivor Chestnutt



Professor Ivor Chestnutt (WP Lead)
 Professor and Hon. Consultant in Dental Public Health,
 Cardiff University



Dr Anwen Cope,
 Specialty Trainee, Dental Public Health,
 Cardiff and Vale University Health Board

This Workpackage delivers high quality research in the area of oral health and primary dental care. The main areas of interest are (i) oral health improvement and preventive dental technologies; (ii) the use of antibiotics in primary dental care; (iii) prudent healthcare in dentistry.

Oral health improvement and preventive dental technologies

Working with colleagues in Dundee, Sheffield, Leeds and York, we have secured an NIHR Health Technology Assessment Programme funded grant to conduct a clinical trial entitled, “The clinical and cost-effectiveness of a Short Messaging Service behaviour change programme to improve oral health in deprived young people”. The grant is worth £1.9M of which £170K will be shared between Cardiff University and Cardiff and Vale University Health Board. The Welsh arm of the study will be led by Ivor Chestnutt.



The NIHR Health Technology Assessment Programme funded “**Seal or Varnish Trial**” is completed and results have been presented at The British Society for Paediatric Dentistry, The British Association for the Study of Community Dentistry, and in the coming months will be presented at the International Society for Pharmacoeconomics and

Outcomes Research and at the International Association for Dental Research in San Francisco. The finding that the caries preventive effect of fluoride varnish was not significantly different from that obtained by fissure sealants in a community oral health programme has significant implications for the delivery of such schemes in areas of **social and economic deprivation**. As a result of the Seal or Varnish trial, Welsh Government has recently issued a circular to the Community Dental Service, suggesting that resources currently devoted to fissure sealants programmes be reinvested in alternative programme formats (see also **Impact Cases**).



'Designed to Smile' mobile dental clinic

The Designed to Smile national oral health improvement programme is closely connected to the workings of this group, and the evaluation undertaken has featured at the **National Institute for Health and Care Excellence (NICE) forum** in 2016.



Child receiving dental treatment in mobile dental clinic

The use of antibiotics in primary dental care

Dentists are responsible for approximately 8% of all antibiotics prescribed in primary care in the UK. Previous work within this theme has described the use of therapeutic antibiotics by dentists working within primary care in the UK; assessed the extent to which therapeutic prescribing conforms to clinical guidelines; and described factors associated with antibiotic prescribing in the absence of spreading infection or systemic involvement (inappropriate use).

Current work focuses on patients' experiences of consulting a (medical) GP with a dental problem and this will subsequently inform an **intervention to signpost patients** experiencing dental problems to **appropriate dental care**.

Prudent Healthcare

Work by the group on skill-mix in dentistry continues. A study which is looking at the potential of dental therapists to enhance service delivery in primary dental care continues.

4. KEY ACHIEVEMENTS

Social care

We fully recognise the importance of this area of research, with the interdependence of primary, unscheduled and social care sectors for capacity, service provision and quality. We undertook a comprehensive consensus exercise during our first year, involving a wide range of stakeholders including social care providers and the then Director of the School for Social Care Research, to develop a **Social Care Research Strategy for PRIME Centre Wales**. This consensus exercise identified our overall social care research strategic principle, *‘to ensure that the research work we do is ‘fit for purpose’ in the view of the public, patient, carer as well as the professional stakeholder’*.

Following the **Social Care Consensus research priorities meeting** held in October 2015, further rounds of consultation for the prioritisation of research themes identified were conducted. Dr Carolyn Wallace and colleagues have led on the development of a strategy to take forward research and development work in the identified areas for the develop the evidence base for social care practice in primary and emergency care in Wales:

- Research awareness, engagement and capacity building
- Long term care
- Integration
- Acts, policy and their impact
- Wellbeing
- Commissioning, organisation and workforce
- Resilience
- Medicines
- Assessment and outcomes
- Abuse

Work has commenced in the research themes identified within the social care consensus exercise. For example in ‘research capacity building’ this area has three externally funded PhD and two MRes studentships. In the Resilience theme, the FRAIT (Family Resilience Assessment Instrument and Tool) has been developed in partnership with the University of South Wales, Hywel Dda and Abertawe Bro Morgannwg University Health Boards and will be used across Wales by health visitors to improve child development outcomes within the Welsh Government’s Healthy Child Wales Programme. In addition, Joyce Kenkre has been working with Homestart UK on volunteering in Scotland and London; and with ‘Our Place’ for young mothers. This is a needs-led group in which they have guest speakers in give them new knowledge and skills but also developing their parenting skills to enjoy time with their

children. This group originated from a public and patient involvement initiative which Kenkre developed for the Department of Health funded evaluation of the Family Nurse Partnership programme. This has been presented in the Senedd as an example of developing social capital in the community. Our 'abuse' theme includes work on domestic abuse, needs led services for male victims, children and young people.



Work this year has also focussed on engaging with Welsh Government, other centres, units and groups to strengthen links and cohesive working in social care research and social care ethics. For example, Joyce Kenkre facilitated the Social Care Research Workshop for Health and Care Research Wales: 'Barriers and Challenges to progress – Potential Solutions/Opportunities' held 1st July 2016. The outcome demonstrated a breadth of issue that needed to be addressed to enable social care research to develop in Wales including: raising the profile of research, use of a common language, governance, training, engagement, involvement of a range of sector organisations and users and improving the knowledge/awareness of funding for research.

Joyce Kenkre and Carolyn Wallace have provided project development support to prospective social care PhD students at the University of South Wales for studentship funding applications, as well as providing supervision on a number of active social care PhDs including:

- ❖ Paul Brownbill: 'Caring for people who have dementia in Community Hospitals: A longitudinal ethnographic study of health-care workers' everyday decision-making' (Health Care Research Wales Social Care PhD Studentship). Initial results recently published in [Journal of Aging and Society](#).
- ❖ Sarah Wallace: 'An investigation into the needs of men experiencing domestic abuse and current service provision (Wales)' (All-Wales Academic Social Care Research PhD studentship)
- ❖ Edward Oloidi: 'An investigation into how perceived public perceptions regarding personal and sexual relationships of adults with intellectual disabilities might influence social care workers' attitudes, beliefs and behaviours (Wales)' (All-Wales Academic Social Care Research PhD studentship).

The next steps will involve identifying leads and/or collaborators to progress the development of research ideas and funding applications for the priority areas.

Social care research studies

The research study ‘An investigation into the needs of men experiencing domestic abuse and current service provision (Wales)’ has worked with the Safer Wales Dyn Project, domestic abuse services across all regions of Wales and obtained service user involvement through the support of Involving People. Additionally, support for the research was secured from the Welsh Government Minister Mr. Leighton Andrews, the Welsh Government Violence Against Women Team, all four Police and Crime Commissioners and Welsh Women’s Aid.



This study is important; it contributes to a limited knowledge base of understanding male domestic abuse and their needs. The study has identified that for men experiencing domestic abuse, there is a lack of recognition which impacts their ability to accept and recognise their victimisation, delaying help-seeking, prolonging abuse and preventing rebuilding. For service provision, the lack of recognition of the problem sustains a perpetuating cycle of low numbers of men help-seeking, un-substantiated need and limited provision. Consequently, the needs of men experiencing domestic abuse are unmet. Moreover, inconsistent data collection procedures are hampering an accurate depiction of male victimisation and support needs across Wales.

Outputs from the study will comprise of reports to funders, participants (abused men and domestic abuse services). A **unique interactive service map** has been developed using data from the study. The map offers a solution to the existing gap of a central access point for domestic abuse services that support men.

3Cs project at Beddau Library

“3Cs (Companionship, Conversation and Creativity) Club”. Support given from Joyce Kenkre to Mair Williams (lead) and the team in the application for funding a 12-week pilot project from Voluntary Action Merthyr Tydfil Community Capacity Fund. Senior citizens were consulted in the local area and it was established that there was an identified need to develop a support network of peers/professionals to help encourage friendships in and outside the group, give older people confidence in meeting new people, empowerment to find out about services that they can access, revive their interest in new topics/hobbies and improve their quality of life. The group are still going supported by a donation from the local council and now from the local rugby team. Another over 50s group has been set-up in Rhydyfelin, financially supported by Newydd Housing.



3Cs Club for senior citizens

Social Care - Building links and collaborations

School for Social Care Research

PRIME Centre Wales has been active in establishing links with the recently launched Wales School for Social Care Research. Social Care Wales, Wales Cancer Research Centre and Health and Care Research Wales. Discussions have included the definition of social care research, social care research infrastructure including training and ethical approval processes.

Denitza Williams participated in the Narrative and Dialogue approaches to quality learning and improvement collaboration event in January 2017 organised by Wales School of Social Care Research. Opportunities for further collaboration/development of research ideas were identified, with a particular focus on using narrative methods in research.

Children's Social Care Research and Development Centre (CASCADE)

PRIME researchers have established links with the Children's Social Care Research and Development Centre (CASCADE) based at Cardiff University as part of the 'Well-being and Health In Schools Project (WHISP)' led by Dr Nina Gobat. CASCADE aims to improve the well-being and safety of children and their families and is concerned with all aspects of community based responses to social need in children and families.

Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer)

We have built on existing collaborative areas of strength with colleagues at DECIPHer as part of the with current projects including the MRC funded **GMI_ALC** project that aims to develop a teacher training programme for a 'Group Motivational Interviewing to prevent alcohol misuse in secondary schools, as well as the Well-being and Health In Schools Project' (**WHISP**) and 'Research literacy for the Welsh Baccalaureate: a scoping study'. DECIPHer brings together leading experts from a range of disciplines to tackle public health issues such as diet and nutrition; physical activity; and tobacco, alcohol and drugs, with particular focus on developing and evaluating multi-level interventions that will have an impact on the health and wellbeing of children and young people.

Community Health and Care Research Cognate Group

The Community Health and Care Research Cognate Group based at University of South Wales is a transdisciplinary, multi-professional, methodologically diverse group, which investigates community, based health and care issues in Wales, UK and beyond. Joyce Kenkre leads the group, supported by David Pontin, Keith Weeks, Carolyn Wallace and Mark Williams. The group has personnel involved in a range of topic areas, which include patient safety; working with industry; evaluation of services; development of social capital; and workforce development and planning.

'Our Place' young parents group

In addition to working with other social care research groups, PRIME has also been involved in capacity building, and providing advice and support to develop community groups and social capital. The young mothers' group named 'Our Place' was originally set-up in Pontypridd for young mothers who lacked self-confidence and experiencing loneliness, formed by the YMCA, University of South Wales, and Artis, and supported by Joyce Kenkre. Joyce Kenkre provided mentorship to the group lead, Mair Williams, who also coordinates the 3Cs Project, and has now set up a community interest company Jigsaw CIC, meaning the group is now able to directly apply for charity and other public funds.



'Our Place' Easter party 2017

Members of the group have provided input as **lay partners on several research projects** conducted by PRIME Centre Wales. These include studies on: prudent healthcare; antimicrobial resistance and the management of respiratory infections in children; and the use of routinely collected data across health, social care and education for the long term follow up of families who have participated in a randomised controlled trial.

These interactions not only provided valuable input for PRIME researchers at the project inception stages, but we were also encouraged to hear how beneficial the experience was to the young parents. Parents expressed the difference the being part of the group has made to the relationship with their children, and how they have felt empowered by learning how to cook healthy meals and develop skills in household budgetin

In discussion with the lead researchers for "Our Place" young parents group, Professor Steve Smith has been involved in developing a theoretical framework for understanding how 'best practices' for social care and community development programmes are promoted.



'Our Place' young parents group coffee morning

This group was originally set-up from 2014-2015 and a funded research project is now evaluating its work focussing on how it (a) enhanced parent/child relationships; (b) equipped young parents with an ability to make better life-choices; and (c) strengthened feelings of self-belief and confidence of its members.

Newport City Councils' Fairness Commission

PRIME has engaged with Newport City Councils' Fairness Commission (NFC), with Professor Steve Smith who Chairs the Commission and Dr Gideon Calder who are both actively involved in a number of projects designed to maximize impact in policy development in social care and other public services across the City of Newport (Gwent).



- **Consultation:** The NFC has made significant contributions to the consultation process for the Council's 17-18 Budget and Medium Term Financial Plan, and the Community Well-Being Profile of Newport City requirement from the Well-Being of Future Generations Act (Wales) 2015.
- **Training:** The NFC has also devised a training package (led by Professor Smith) for policy-makers and civil servants on how to think critically about the social value of 'fairness' in relation to social care and other public services.
- **The development of assessment tools:** The NFC has also devised an assessment tool for assessing the impact of policy development on understandings of fairness, which has been incorporated into a single integrated assessment designed to provide balanced information to support decision making and to promote better ways of working in line with equalities (Equalities Act 2010), Welsh language promotion (The Welsh Language Measure 2011), sustainable development (Wellbeing of Future Generations Act 2015), and the four parameters of debate about fairness identified by the Newport Fairness Commission (NFC Full Report to Newport City Council in 2013).

South Wales Equality Group

Dr Gideon Calder is currently involved with work on equality and transport in Swansea via the South Wales Equality Group (of which he is convenor), and is working on a report on inequality and Brexit to be discussed at the major party conferences during 2017, starting with the Welsh Labour conference at Llandudno on 25 March.

Social Care - Events

Research priority setting in care homes workshop, July 2016

Centre for Trials Research and PRIME Centre Wales organised a Research Development Workshop in July 2016 with the aim of developing proposals to address the questions that have been identified as priorities for research in care homes in a study led by Victoria Shepherd.

The workshop brought together people from a range of backgrounds, specialities, skills and experience from both health and social care. This was to



The workshop was chaired by: Victoria Shepherd, Kerry Hood and Fiona Wood



PRIME Research Officer, Ashra Khanom

reflect that the care provided in care homes is unique as it encompasses a range of health conditions, as well as features associated with ageing, such as frailty and cognitive impairment, and incorporates social care as well as health care. Those attending could either 'pitch' their idea for a research proposal, or join researchers with similar interests to develop proposals.

Around 50 people attended, including representatives from four health boards, a range of Schools and Centres across four universities, third sector organisations, care regulators, and a care home team. Some were experienced researchers, whilst others were newer to research but had

invaluable hands on experience working with the care home sector.

The research priority setting in care homes work has nbeen published in an open access journal: [Establishing a set of research priorities in care homes for older people in the UK: a modified Delphi consensus study with care home staff](#). Shepherd V, Wood F, Hood K. Age Ageing (2017) 46 (2): 284-290.



PRIME Clinical Research Fellow Freya Davies with Nick Andrews, Wales School for Social Care Research

Third Sector

PRIME Centre Wales has progressed in building new links with the third sector over the past year, welcoming third sector representatives to events hosted including the Paul Sartori Foundation at the research development workshop on 'Research Priority Setting in Care Homes', and National Rheumatoid Arthritis Society at the 'STAR study stakeholder meeting'.

Existing links have been strengthened with continued representation from British Lung Foundation and Age Cymru on the PRIME Executive Management Committee. A number of PRIME researchers also have links with third sector organisations including Carolyn Wallace, Vice-Chair of Age Cymru Gwent, and Joyce Kenkre involved in Home Start family charity having co-authored a [significant report for Home Start Scotland](#) and in London on volunteering and YMCA Pontypridd.



Home-Start report co-authored by Joyce Kenkre

Several of our studies involve collaborations with the third sector. These include the Prudent Healthcare Study (qualitative exploration of public and clinicians' views and experiences of Prudent Health Care), the ABACUS study (Awareness and Beliefs about Cancer) both of which benefited from collaborations with Communities First representatives, and a [study to improve the quality of out-of-hours palliative care services for end of life patients](#) which involves Marie Curie and hospice providers in Gwent.

PRIME has continued to successfully bid for third sector research funding with new projects awarded funding from **Tenovus Cancer Care** (to examine the role of lay referral in cancer early diagnosis), **Yorkshire Cancer Research** (ABACUS Phase 3: health check project aimed at improving the early diagnosis of cancer in disadvantaged communities), **Cancer Research UK** (Ria Poole fellowship, LUSH project), **Cancer Research Wales (WICKED Programme)**, **Health Foundation** ([study on data linkage across ambulances and acute trusts](#)), **Falck Foundation** ([paramedics using pre-hospital analgesia study](#)), and **Wellcome Trust** ([study on ethics of ambulance trials](#), and multiple Institutional Strategic Support Fund awards).

Age Cymru Gwent

Strategic links have been established with Age Cymru Gwent and Age Cymru. Dr Carolyn Wallace has been a trustee with Age Cymru Gwent since 2014 and was appointed Chair of the Board of Trustees in November 2016. This opportunity has enabled her to develop an

understanding of strategic decision making, service delivery within a non-government organisation, and how strategic health and social care organisations interface with NGOs.

Chairs and Vice-Chairs of all the Age Cymru partners in Wales meet quarterly to discuss partnership opportunities and challenges. Carolyn has been invited to advise on the evaluation of the Age Cymru partnership in 2017. The next steps include identifying opportunities for research and the development of research ideas.



Carolyn Wallace (far left, front row) with Age Cymru Gwent group, 2016

Lay involvement and Public Engagement

PRIME Centre Wales actively involves patients, carers and members of the public in order to gain lay perspectives on primary and emergency care services to strengthen the relevance and quality of research on these topics. We involve lay members across the research cycle, building relationships so they are able to contribute to developing, undertaking and disseminating research.

Developing Research

Lay members have been involved in developing research strategies and specific research proposals. For example, we are working alongside patients and carers in a research prioritisation exercise on cellulitis within the [Cellulitis Priority Setting Partnership of the James Lind Alliance](#).

We recruited patients, carers and members of the public to be involved in our research priority setting events for care homes and social care research. When developing proposals for research studies and submitting applications for grant funding, we ensure that patients' experiences and expertise are included to strengthen the relevance and quality of the bid. We aim to involve people in the research development group and as bid co-applicants where possible. In our application to evaluate models of GP presence in emergency departments, two lay members were named as co-applicants; they were participating members of the research development group and gave detailed input to study design as well as drafting the lay summary. Reviewers' comments noted: ***"In addition, the PPI was found to be embedded throughout the study, including dissemination, and the plain English summary was well-written."***



The research in care homes RDG workshop was attended by a range of stakeholders including lay members



Developing the PREPARE public survey in partnership with residents from Grangetown community, Cardiff

As part of the PREPARE project, we have developed a survey to consider public views in 8 Organisation for Economic Co-operation and Development (OECD) countries about information provision and consent to participate in clinical research during an infectious disease outbreak of pandemic potential. We engaged members of the Grangetown community by working through a local councillor and community leaders to help us design and test the survey. This process substantively shaped the outcome of our data collection tool, introduced new perspectives to the research team and to community members, and strengthened links with the local community.

Delivering research

Lay members are involved in studies across our workstreams. Much involvement is through research management groups, where they are equal members with other academic and clinical partners, taking decisions about implementing research projects. We have also used other involvement models. For example, Natalie Joseph-Williams has worked with the Aneurin Bevan University Health Board's physiotherapy team to establish a PPI panel for the Shared Decision Making pathway evaluation project. Our feasibility study of the Solva Care project was identified by the community group overseeing the village-based scheme and undertaken in partnership with them.

Disseminating research

Lay members bring insight into best ways of reaching non-academic audiences when we plan and undertake dissemination of PRIME research. In the PREPARE study, our lay members have advised on the development of a **public facing report** to share the initial findings of a European focus group study on public attitudes to taking part in research during an epi/pandemic.



Dr Bridie Evans presenting at Aberdeen University

Kate Brain and Grace McCutchan delivered a lung cancer early diagnosis workshop chaired by Wales Cancer Partnership Conference lay research partner, Kathy Seddon, at the Wales Cancer Partnership Conference in November 2016. The workshop covered barriers to early diagnosis of lung cancer, including both barriers to symptom awareness and barriers to screening. The workshop also introduced the LUSH study (detailed on p17 of the report).



Lay member Jan Davies presenting a prize at the 2016 999 EMS Research Conference

As partners in our research teams, lay members co-author publications about our research. For example, see [Bulger et al., Pilot and Feasibility Studies 2016, 3:8 \(RAPID study\)](#), [Lyons et al., J Epidemiol Community Health 2016 10.1136 \(airAware study\)](#) and [Evans et al., BMC Open 2017:7 \(TIER study\)](#).

We support lay members to attend relevant conferences to build their research skills and share experience of involvement in research. Several attended the [NIHR at 10 event](#). Eight lay members involved in emergency care research linked to PRIME attended the 999 EMS Research Forum conference, while one individual also co-delivered a research development workshop during the event, contributing experience and advice about public and patient involvement in preparing research bids.

Linking with lay members

We have strong links with lay members through several forums and voluntary groups. We work closely with the **North Wales Cancer Forum** to ensure the views and perspectives of cancer survivors and carers are integrated into cancer related studies and research grants. We have good links with organisations and individuals with experience of social and community care. We also bring lay people together in the **SUCCESS panel**. This group includes people with a range of experiences relevant to emergency and primary care, who have many connections with PRIME research through projects in development and implementation across our workpackages.



Meeting of the SUCCESS lay involvement panel, coordinated by Dr Bridie Evans



Lay member Robert Harris-Mayes presenting at the SW Society for Academic Primary Care Conference

We have also presented and published in order to disseminate our experiences of lay involvement. Lay member Robert Harris-Mayes and Dr Bridie Evans (PRIME PPI Lead) co-presented at the Society for Academic and Primary Care South Wales Conference, describing the SUCCESS model for lay involvement in research. We also presented at other conferences and seminars including the Health Services Research UK (HSRUK) Annual Symposium, Global Health Economics Summit in Berlin and events for International Clinical Trials day.

Lay members are also actively involved in the organisation of PRIME Centre Wales. Three individuals are members of the Executive Management Committee and a further two are members of the External Advisory Board. We also involved a lay member in organising our PRIME Centre Wales Annual Meeting 2016.

We have also undertaken several events, involving and engaging adults and young people in research, as follows:

Monmouth Comprehensive School stakeholder event, January 2017

PRIME researchers have been involving secondary school pupils in the 'Well-being and Health In Schools Project (WHISP)'. Monmouth Comprehensive was the first state-funded Welsh school to receive the Restorative



Illustrator using 'visual minutes' with pupils



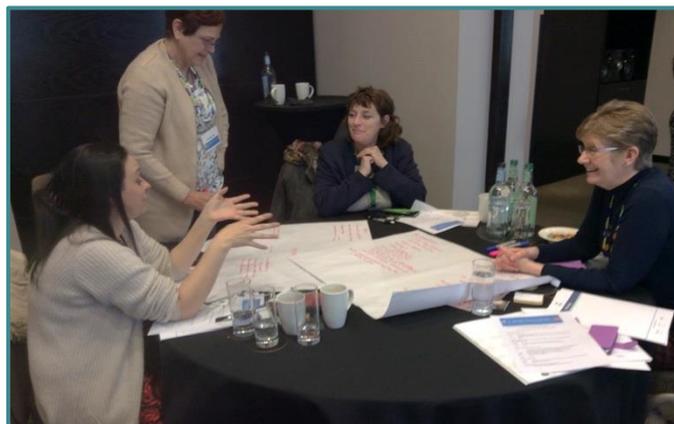
Pupils participants in the Health and Well-being in Schools (WHISP) project

Service Quality Mark. Their approach was adopted to address mental health and well-being needs of pupils and has resulted in clear, measurable benefits such as increased student attendance, and reductions in student exclusions, youth offending team referrals and staff absence.

Our research, led by Dr Nina Gobat involved working with staff, students and governors at Monmouth Comprehensive to describe their approach in a logic model. We shared our findings at a stakeholder event and captured discussions using visual minutes to stimulate reflection how things are working and what needs improving in the school. Students doing their individual project for the Welsh Baccalaureate also gained valuable insight into the research process.

STAR Family Study stakeholder meeting, January 2017

The STAR Family Study stakeholder event held 25th January 2017 brought together women with chronic pain and their partners/other family members, health and social care professionals, and researchers who are interested in improving support for women with chronic musculoskeletal conditions (e.g. chronic pain, fibromyalgia, inflammatory arthritis, Lupus, vasculitis) on their journey to parenthood.



Patients, clinicians, researchers & policy leads in attendance at stakeholder meeting

The event was held to share findings of the research completed to date led by Dr Rhiannon Phillips with Dr Denitza Williams and colleagues at PRIME Centre Wales, Cardiff University, and funded by Wellcome Trust Institutional Strategic Support Fund Awards (Cardiff University). The 'Starting a family when you have an autoimmune rheumatic disease (STAR study)' one-year project aimed to look at current practice and find out the key areas for further research going forward.

The research involved hearing about the challenges women with chronic pain face and the support they need when planning a family, during pregnancy or when they have young children, as well as hearing from a range of health professionals about the care and support that women receive during this stage in their lives. This can be anything from getting advice on medication use during pregnancy and breastfeeding to getting practical help with young children.



Stakeholders were asked to highlight the issues important to them for further research

The stakeholder meeting was an opportunity to feedback the findings of the research so far, as well as to hear from guest speakers who are international experts in the field.

Building research capacity

PhDs in progress

PRIME co-applicants support **several PhDs across the disciplines** involved in our participating universities. Among these are **six GPs** (five at Cardiff University, one at Swansea), a **record for the discipline** at any one time in Wales to date and two paramedics from the Welsh Ambulance Service Trust.

We continue to actively seek and support other disciplines to undertake PhDs as well, including through the Research Capacity Building Collaboration (RCBC) (for nursing, midwifery and the allied health professions) – Sue Thomas, Primary Care and Independent Sector Adviser for RCN Wales was supervised by Carolyn Wallace for the RCBC study: “**Evaluating the introduction of a community nurse administered patient assessment tool, which measures complexity and acuity of need**”) and the Knowledge Economy Skills Scholarships (KESs) (involving external partners, see below NHS Engagement – Pharmacy, BRAVE Domestic abuse study (MRes); Kenkre leads for PRIME’s connection to both schemes). Student recruitment to our four newly funded KESs II studentships is underway, with appointment already made to the collaborative project with Tenovus, Emma Campbell, who will commence study in October 2017, supervised by Julia Hiscock. We also bring paramedics into active research roles and have six currently supporting the TIER, RAPID, PHED Data and ERA studies.

This year we were delighted to secure a prestigious **NIHR Studentship** for Victoria Shepherd (Nursing; with Wood and Hood, Cardiff University) to examine consent for research in patient groups where individuals may not have capacity to consent. Nefyn Williams at Bangor University also secured and leads a **Health and Care Research Wales PhD** studentship evaluating skill mix and the innovative developments in primary care provision in Prestatyn.

New Principal Investigators

- ❖ Rhiannon Phillips and Nina Gobat (PRIME Research Fellows, Cardiff University) have both led on successful applications to Wellcome Trust Institutional Strategic Support Fund (Cardiff University). Rhiannon has followed this up with a large grant application to Arthritis UK (March 2017) regarding women with inflammatory arthritis and pregnancy / childcare challenges.
- ❖ Rebecca-Jane Law (Research Fellow, Bangor University) also led a large grant application to Arthritis UK (March 2017), supported by Nefyn Williams (Methodology lead), Adrian Edwards and Natalie Joseph-Williams project to develop an intervention to improve function for people with osteoarthritis.

- ❖ Kathryn Hughes (Senior Clinical Research Fellow, Cardiff University) has commenced the **LUCI study** on the long-term follow-up of urinary tract infection (UTI) in childhood, her first large study as lead.
- ❖ Huw Williams (GP Research Fellow, Cardiff University) has led a successful application to the Royal College of General Practitioners, working with Andrew Carson-Stevens and Prof Simon Noble at Wales Cancer Research Centre.
- ❖ Ria Poole (Research Fellow, Cardiff University) has won a prestigious CRUK Fellowship focusing on tobacco control (working with Kate Brain, Fiona Wood and Adrian Edwards for Cancer Prevention and Patient-centred Care).
- ❖ Nigel Rees (WAST) is leading two studies (TIER and RAPID) funded by the Health and Care Research Wales Research for Public and Patient Benefit (RfPPB) scheme, while Chris Moore (WAST) is leading the PHRASE study, also funded by Health and Care Research RfPPB.
- ❖ Sarah Wallace led on a successful application for the evaluation of a women's advocacy service in Newport. This is a new service offering support to women involved in commercial sex-work or women at risk of sexual and/or financial exploitation. It is funded by the Big Lottery and delivered by the Social Justice Charity for South East Wales (SEWREC).

Awards

- ❖ Denitza Williams was awarded the **Audrey Jones Memorial Award** for Scholarship of her PhD in March 2017: 'Women's intentions to Human Papillomavirus self-sample: development of an intervention to increase self-sampling intentions'. As part of the award, Denitza was guest speaker at the **Wales Assembly of Women Conference** in March 2017.



Elen de Lacy and Denitza Williams receiving Audrey Jones Memorial Award

- ❖ Stephanie Smits has been awarded a place on the **Future Leaders** in Cancer Research (FLiCR) programme, with the aim of increasing capacity in bowel cancer screening research. Stephanie has been put on the aspiring fellowship fast-track initiative and has been given funds of £7k for training and development.

- ❖ Grace McCutchan was awarded 'Best photo' in the 'Having an impact' category in the Health and Care Research Wales photo competition, awarded at the Health and Care Research Wales Conference, October 2016; and 'Best Poster' at the Cancer Research UK Early Diagnosis Conference, February 2017.



'Seeing my cells' captures researcher Grace McCutchan at the Greenman Festival with Tenovus Cancer Care in their 'ice-cream van laboratory'

- ❖ Sarah Wallace was awarded prize for 'Best student poster' at the Association of Directors of Social Services Cymru (ADSS Cymru) annual conference in Llandudno in 2016. The poster was entitled: 'An investigation into the needs of men experiencing domestic abuse and current service provision (Wales)'.

General Practice Academic Clinical Fellow Scheme

Following on from the success of the Welsh Government sponsored Academic Clinical Fellow Scheme at Cardiff University, the scheme has been rolled out to Bangor for North Wales and Swansea for South West Wales. The Scheme provides the opportunity for motivated General Practitioners to further develop skills in research and teaching, while providing much needed support to general practices in the most deprived areas of Wales to improve their patient care. PRIME staff are actively involved in the scheme which offers fellows two year, fixed term contract during which they spend two days per week in clinical contact, and three days per week involved in teaching and researching.

Linking with international networks

Joyce Kenkre and colleagues are working with World Organization of Family Doctors (WONCA) to prepare a policy paper on the importance of primary care research targeted specifically at the World Health Organisation (WHO), which will be a contemporary update of key documents including the Kingston Declaration published in 2004: 'Building Family/General Practice Research Capacity'. Joyce Kenkre is a member of the EURIPA (European Rural Isolated Practitioner Association) Scientific Board.



Links have also been established with Professor France Légaré and colleagues at Centre de recherche sur les soins et les services de première ligne de l'Université Laval (CERSSPL-UL), Québec, Canada. Initial meetings have identified common areas of research interest for potential collaborations.

Nina Gobat, Micaela Gal, Nick Francis and colleagues are involved in a pan-European consortium, PREPARE, which intersects with international organisations including the International Severe Acute Respiratory Infection Consortium (ISARIC) and WHO. PREPARE is currently developing pan-European outbreak response plans for clinical research delivery in collaboration with Public Health England and European Centre for Disease Prevention and Control (ECDC). Nina Gobat and Micaela Gal have been invited to deliver a workshop at the WONCA Europe conference (July 2017) and at the European Respiratory Society course on acute respiratory pandemics (November 2017).

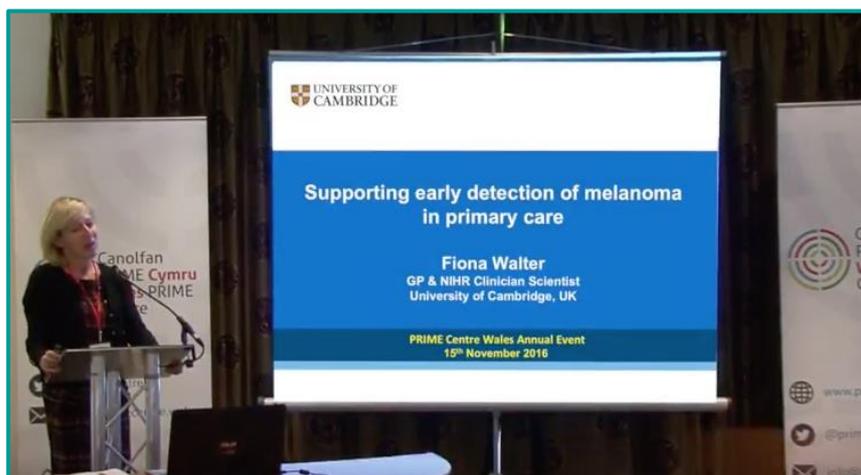
A **practical guide** was authored by Andrew Carson-Stevens and the World Health Organisation (WHO) Envoy for Patient Safety, Professor Sir Liam Donaldson, to support GPs and their teams to identify and learn from patient safety incidents. The guide describes the range of patient safety incidents that occur in general practice; provides examples of local and national level learning from the analysis of groups of similar incidents; and, outlines seven

stages for learning from patient safety incidents in general practice, including when to undertake a Significant Event Analysis (SEA).

Conference organisation

PRIME Centre Wales researchers, faculty and lay members came together for the **PRIME Annual Meeting** held in Bangor, November 2016. We were delighted to welcome guest

speakers Dr Fiona Walter, University of Cambridge (pictured opposite), and Janette Turner, University of Sheffield. **Methodological innovation workshops** included learning opportunities in ‘Demystifying implementation research’, ‘Adaptive designs making clinical trials more



flexible and efficient’ and ‘Measuring health-related quality of life: A health economics perspective’. Presentations from the day are available to view at www.primecentre.wales/2016-annual-meeting

In March 2016 Cardiff University and PRIME hosted the **Annual Scientific Meeting of the South West Society for Academic Primary Care meeting** in Cardiff, bringing together over 160 experts and researchers in the field of primary care to present abstracts **intended to inform best practice**.

In March 2017, Swansea’s PRIME team worked with the South West Ambulance Service (SWASFT) to organise the **999 Research Forum annual conference held in Bristol**. For the first time, the event covered two days, and had a programme of exciting **workshops for attendees to gain valuable research skills**, along with invited speakers, and peer reviewed presentations of research findings. The event attracted researchers from across the UK, including many research-active paramedics.

Increasing research income into Wales

PRIME Centre Wales has been awarded over £18,000,000 in new research grant funding since 2015, with some key active projects highlighted below.

EPICC	<p><i>Enhancing Nurses Competence in Providing Spiritual Care through Innovative Education and Compassionate Care (EPICC).</i></p> <p>Erasmus+ Key Action 2 Strategic Partnerships. €242,093</p> <p>The University of South Wales is one of the key partners in collaboration partners in Staffordshire, Malta, Norway, and the Netherlands</p>
PriMUS	<p><i>'Primary care management of lower urinary tract symptoms in men: development and validation of a diagnostic and decision making aid'.</i></p> <p>£1,555,527, NIHR Health Technology Assessment (HTA) Programme</p> <p>Lead: Adrian Edwards</p>
WICKED	<p><i>'WICKED' (Wales Interventions and Cancer Knowledge about Early Diagnosis): The development and evaluation of primary care interventions to expedite the diagnosis of symptomatic cancer in Wales.</i></p> <p>£800,000, Cancer Research Wales Programme Grant</p> <p>Lead: Richard Neal / Clare Wilkinson</p>
ERA	<p><i>ERA - Electronic Records in Ambulances to support the shift to out of hospital care: challenges, opportunities and workforce implications.</i></p> <p>£380,318, NIHR Health Services and Delivery (HS&DR) Programme</p> <p>Lead: Alison Porter</p>
GPs in EDs	<p><i>Evaluating effectiveness, safety, patient experience and system implications of different models of using GPs in or alongside Emergency Departments.</i></p> <p>£954,000, NIHR Health Services and Delivery (HS&DR) Programme</p> <p>Lead: Adrian Edwards</p>
Avoidable harm	<p><i>Understanding the nature and frequency of avoidable harm in primary care.</i></p> <p>£106,000, National Institute for Health Research (NIHR)</p> <p>Lead: Andrew Carson-Stevens</p>
BRIGHT	<p><i>Brushing RemInder 4 Good oral HealTh: the clinical and cost-effectiveness of a Short Messaging Service behaviour change programme to improve the oral health of young people living in deprived areas.</i></p> <p>£1.9M total, NIHR Health Technology Assessment (HTA) Programme ; £175,000 to Wales</p> <p>Cardiff Lead: Ivor Chestnutt</p>

Key research findings

Key research findings from completed studies across the PRIME Centre Wales' workpackages have been published in high impact journals in the past year, with some of the most significant summarised below.

PIPETTE study

This prospective observational study investigating the value of a proposed primary care peripheral arterial disease screening strategy found that routine peripheral arterial disease screening may be unwarranted. Instead, strategies to improve public awareness of peripheral arterial disease are needed.

Davies JH, Richards J, Conway K, Kenkre JE, Lewis JEA, and Williams EM. Primary care screening for peripheral arterial disease: a cross-sectional observational study. *Br J Gen Pract* 2017; 67 (655): e103-e110. DOI: <https://doi.org/10.3399/bjgp17X689137>

MAGIC shared decision making programme

This implementation programme was commissioned by The Health Foundation to design, test and identify the best ways to embed shared decision making into routine primary and secondary care settings in the UK (Cardiff and Newcastle). The three-year learning programme identified key challenges to implementing shared decision making routinely, and offers a range of practical solutions that could address the challenges. Learning suggests that routine implementation requires interventions and processes to support organisations, clinicians, and patients; a 'shared decision making bundle'.

Joseph-Williams N, Lloyd A, Edwards A, Stobbart L, Tomson D, Macphail S, Dodd C, Brain K, Elwyn G, Thomson R. Implementing shared decision making in routine NHS settings – lessons from the MAGIC Programme. *BMJ*. 2017. 357:j1744.

Establishing a set of research priorities in care homes for older people in the UK

This study involved a modified Delphi technique to identify research topics and develop consensus among care home staff participants and is the to establish a set of research priorities for older people in the UK care homes. It is hoped that sharing these results with clinicians, researchers and funding bodies will help to ensure that the future research agenda can be focused on the areas of greatest need. Further work to identify the priorities of other key stakeholders is required.

Shepherd V, Wood F, Hood K. Establishing a set of research priorities in care homes for older people in the UK: a modified Delphi consensus study with care home staff. *Age Ageing* (2017) 46 (2): 284-290

CREAM

This randomised controlled trial of 113 children with clinically infected eczema found rapid resolution in response to topical steroid and emollient treatment and ruled out a clinically meaningful benefit from the addition of either oral or topical antibiotics. Children seen in ambulatory care with mild clinically infected eczema do not need treatment with antibiotics.

Francis NA, Ridd MJ, Thomas-Jones E, Butler CC, Hood K, Shepherd V, Marwick CA, Huang C, Longo M, Wootton M, Sullivan F, the CREAM Trial Management Group. Oral and Topical Antibiotics for Clinically Infected Eczema in Children: A Pragmatic Randomized Controlled Trial in Ambulatory Care. Ann Fam Med 2017;15:124-130. <https://doi.org/10.1370/afm.2038>

Management of acne vulgaris in primary care

Effective management of acne vulgaris in primary care involves support (usually provided over a number of consultations) and prescription of effective treatments. However, analysis of UK consultations between 2004-2013 identified from the Clinical Practice Research Datalink (CPRD) suggest that patients with acne are receiving a sub-optimal initial choice of acne-related medications, longitudinal care and prescribing.

Francis NA, Entwistle K, Santer M, Layton AM, Eady EA, Butler CC. The Management of Acne Vulgaris in Primary Care: A cohort study of consulting and prescribing patterns using CPRD. Br J Dermatol, 176: 107-115. doi:10.1111/bjd.15081

ELCID

The Early Lung Cancer Diagnosis and Investigation (ELCID) trial involved patients over 60, with a smoking history, presenting with new chest symptoms to primary care, and demonstrated the feasibility of individually randomising patients at higher risk of lung cancer, to a trial offering urgent investigation or usual care.

Neal RD, Barham A, Bongard E, Edwards RT, Fitzgibbon J, Griffiths G, Hamilton W, Hood K, Nelson A, Parker D, Porter C, Prout H, Roberts K, Rogers T, Thomas-Jones E, Tod A, Yeo ST, Hurt CN. Immediate chest X-ray for patients at risk of lung cancer presenting in primary care: randomised controlled feasibility trial. British Journal of Cancer (2017) 116, 293-302. doi:10.1038/bjc.2016.414

UKLS

Results of our UK Lung Screening (UKLS) trial psychosocial evaluation revealed that the introduction of lung cancer screening for high risk groups could reduce deaths without causing participants the undue stress sometimes associated with medical tests.

Brain K, Lifford KJ, Carter B, Burke O, McRonald F, Devaraj A, Hansell DM, Baldwin D, Duffy SW, Field JK. Long-term psychosocial outcomes of low-dose CT screening: results of the UK Lung Cancer Screening randomised controlled trial. Thorax. 2016 Nov;71(11):996-1005. doi: 10.1136/thoraxjnl-2016-208283.

Support and Assessment for Fall Emergency Referrals (SAFER) 2

Falls are a common reason for older adults to seek emergency care. This cluster randomized trial assessed a protocol in which paramedics referred low-risk patients to a fall prevention service without transport to the emergency department. Our findings establish the feasibility and suggest the safety of a protocol in which paramedics assess older adults who fall and refer low-risk patients to a fall prevention service without emergency transport.

Snooks HA, Anthony R, Chatters R, Dale J, Fothergill RT, Gaze S, Halter M, Humphreys I, Koniotou M, Logan P, Lyons RA, Mason S, Nicholl J, Peconi J, Phillips C, Porter A, Siriwardena AN, Wani M, Watkins A, Wilson L, Russell IT. Paramedic Assessment of Older Adults After Falls, Including Community Care Referral Pathway: Cluster Randomized Trial. Ann Emerg Med. 2017 Mar 13. pii: S0196-0644(17)30016-1. doi: 10.1016/j.annemergmed.2017.01.006. [Epub ahead of print]

Non-accidental non-fatal poisonings attended by emergency ambulance crews

Non-fatal poisonings are one of the commonest reasons for general hospital admission in the UK. This observational study of data sources and epidemiology is the first to present a picture of ambulance service attendance to incidents of non-accidental non-fatal drug poisonings in the UK. SAFER₂ highlights that current policy, service organisation and delivery is being based on unreliable call centre data. We recommend that information systems need to be developed to allow accurate routine monitoring of volume, presentation and outcomes in order to develop improved policy and practice for this patient group.

John A, Okolie C, Porter A, Moore C, Thomas G, Whitfield R, Oretti R, Snooks H. Non-accidental non-fatal poisonings attended by emergency ambulance crews: an observational study of data sources and epidemiology. BMJ Open. 2016 Aug 18;6(8):e011049. doi: 10.1136/bmjopen-2016-011049.

Patient safety incidents involving sick children in primary care in England and Wales

Our analysis of 2,191 reports from a national collection of patient safety incidents that involved sick children in primary care in England and Wales found that out-of-hours telephone triage systems are not fit for paediatric purpose and require improvement.

Rees P, Edwards A, Powell C, Hibbert P, Williams H, Makeham M, Carter B, Luff D, Parry G, Avery A, Sheikh A, Donaldson L, Carson-Stevens A. (2017) Patient Safety Incidents Involving Sick Children in Primary Care in England and Wales: A Mixed Methods Analysis. PLoS Med 14(1): e1002217. doi:10.1371/journal.pmed.1002217

Characterising the nature of primary care patient safety incident reports in the England and Wales National Reporting and Learning System

Systematic analysis of over 40,000 safety incident reports from general practice has identified that i) safer and more reliable medication dispensing systems are needed; and ii) Mandatory paediatric training for all general practice trainees is essential.

Carson-Stevens A, Hibbert P, Williams H, Prosser Evans H, Cooper A, Rees P, Deakin A, Shiels E, Gibson R, Butlin A, Carter B, Luff D, Parry G, Makeham M, McEnhill P, Ward HO, Samuriwo R, Avery A, Chuter A, Donaldson L, Mayor S, Panesar S, Sheikh A, Wood F, and Edwards A. Characterising the nature of primary care patient safety incident reports in the England and Wales National Reporting and Learning System: a mixed-methods agenda-setting study for general practice. Southampton (UK): NIHR Journals Library; 2016 Sep. (Health Services and Delivery Research, No. 4.27.) doi: 10.3310/hsdro4270

Rees P, Edwards A, Powell C, Hibbert P, Williams H, Makeham M, Carter B, Luff D, Parry G, Avery A, Sheikh A, Donaldson L, Carson-Stevens A. (2017) Patient Safety Incidents Involving Sick Children in Primary Care in England and Wales: A Mixed Methods Analysis. PLoS Med 14(1): e1002217. doi:10.1371/journal.pmed.1002217

Seal or varnish

Fissure sealants (FS) and fluoride varnish (FV) are effective in preventing dental caries when compared with a no treatment control. However, the relative clinical effectiveness of these interventions is uncertain. This randomised controlled trial included 1,016 children from targeted population programme using mobile dental clinics in schools located in areas of high social and economic deprivation in South Wales, treated with either i) resin-based fissure sealants or ii) fluoride varnish. We found that in a community oral health programme, twice yearly application of fluoride varnish resulted in caries prevention which is not significantly different from that obtained by applying and maintaining fissure sealants after 36 months.

Chestnutt IG, Playle R, Hutchings S, Morgan-Trimmer S, Fitzsimmons D, Aawar N, Angel L, Derrick S, Drew C, Hoddell C, Hood K, Humphreys I, Kirby N, Lau TMM, Lises C, Morgan MZ, Murphy S, Nuttall J, Onishchenko K, Phillips C, Pickles T, Scoble C, Townson J, Withers B and Chadwick BL. (2017) Fissure seal or fluoride varnish? A randomised trial of their relative effectiveness, Journal of Dental Research, 2017 Jul;96(7):754-761. doi: 10.1177/0022034517702094.

Chestnutt IG, Playle R, Hutchings S, Morgan-Trimmer S, Fitzsimmons D, Aawar N, Angel L, Derrick S, Drew C, Hoddell C, Hood K, Humphreys I, Kirby N, Lau TMM, Lises C, Morgan MZ, Murphy S, Nuttall J, Onishchenko K, Phillips C, Pickles T, Scoble C, Townson J, Withers B and Chadwick BL. Seal or Varnish? A randomised trial to determine the relative cost and effectiveness of pit and fissure sealants and fluoride varnish in preventing dental decay. NIHR Health Technology Journal, 2017 Apr;21(21):1-256. doi: 10.3310/hta21210.

Antibiotic prescribing in UK general dental practice

An audit of 279 general dental practices in the UK found that over half of antibiotics (65.6%) were prescribed in situations where there was no evidence of spreading infection, and 70.6% were used without the provision of dental treatment. There is a need for interventions to support general dental practitioners so that they may make sustainable improvements to their antimicrobial prescribing practices.

Cope AL, Francis NA, Wood F, Chestnutt IG. Antimicrobial prescribing in UK general dental practice: a cross-sectional study. Community Dentistry and Oral Epidemiology 2016; 44: 145-53. doi:10.1038/sj.bdj.2016.496

Cope A, Chestnutt IG, Wood F, Francis NA. Dental consultations in UK general practice and antibiotic prescribing rates: a retrospective cohort study. British Journal of General Practice. Br J Gen Pract. 2016 May;66(646):e329-36. doi: 10.3399/bjgp16X684757

Translation / Knowledge transfer / Impact

From the outset, stakeholder engagement and involvement have been central to PRIME Centre Wales research, and all research taken forward aims to deliver impact. Our beneficiaries will include patients and the population of Wales and beyond, NHS and social care services, policy makers and clinical guideline developers, industry, funders and professional groups.

1. Routine implementation of shared decision making (SDM) in NHS settings, and other worldwide healthcare settings (Adrian Edwards, Fiona Wood, Natalie Joseph-Williams)

Our Shared Decision Making (SDM) interventions and approaches have been implemented across several primary and secondary NHS settings, across the UK. These interventions have supported the delivery of patient centered healthcare and contributed to demonstrable change in clinical practice and improvements in patient care, nationally and internationally. The interventions include a SDM skills training package, available via the [Health Foundation's Person Centred Care Resource Centre](#), and [brief decision aids](#). The 'Ask 3 Questions' patient engagement campaign, developed as part of the MAGIC programme, has been adopted by the Dutch Patient Federation (as '[3 goede vragen](#)'), and has been rolled out across 24 hospitals in the Netherlands.

We have been working to ensure that SDM can be integrated into clinical guidelines. Research insights from the MAGIC programme has been incorporated into the [NICE Collaborative on SDM](#) which launched its [SDM strategy and decision aids in September 2016](#).

Members of the team have also been working with clinicians nationally and internationally to providing training in SDM skills. The team are also academic partners to the Wales 'Choosing Wisely Campaign' planning SDM initiatives and the evaluation phases of the programme.

2. Engaging high risk, harder to reach groups in cancer screening and early detection (Kate Brain, Stephanie Smits, Nefyn Williams)

Understanding the psychosocial and behavioural determinants of cancer screening uptake and early symptomatic detection is key to improving cancer outcomes, especially in high risk and disadvantaged groups. Brain, together with two other Cardiff University researchers, led two psychosocial evaluations of cancer screening, the results of which have contributed to policy proposals to the UK National Screening Committee regarding the introduction of population-based lung and ovarian cancer screening and the development of behavioural interventions for the clinical management of ovarian cancer in at-risk women.

Wales has some of the poorest cancer survival outcomes in Europe. Increased public awareness and earlier help-seeking have the potential to lead to earlier diagnosis and ultimately improved cancer survival outcomes, especially among high risk harder-to-reach groups. Our research findings are shared with clinical networks in Wales (e.g. Cwm Taf University Health Board's Reducing Inequalities annual report 2016, Wales Cancer Network early diagnosis workshop) and beyond (e.g. [UK National Cancer Research Institute Primary Care Studies Group](#)), culminating this year in a major focus on early diagnosis in the refreshed Cancer Delivery Plan and implementation through the Wales Cancer Network Programme Board. Improving lung cancer outcomes through earlier diagnosis was prioritised in the Cancer Delivery Plan and implemented in the Welsh lung cancer awareness campaign during 2016. The UK Lung Screening trial results were referenced in the [UK Lung Cancer Coalition's "25 by 25" report published in November 2016](#), building the evidence base in anticipation of a UK national lung screening programme by 2025.

3. Transforming the care of patients attended by emergency ambulance through research, innovation and education (Helen Snooks, Alison Porter, Bridie Evans, Mark Kingston)

The emergency and unscheduled care system is the gateway to secondary care but is overwhelmed and unable to respond appropriately to patients in need of urgent care. Underpinned by groundbreaking informatics, Helen Snooks leads a programme of epidemiological and experimental research in the ambulance service setting which is a global leader and has attracted large scale funding (£26m). Findings have been widely disseminated and led to impact in policy and practice in UK and internationally. Helen Snooks has led or collaborated in some of the largest trials ever undertaken in this setting e.g. SAFER 2 (5,000 patients recruited). The programme is new and transformational in several ways:

1. Policy relevant – tackling highly visible problems in emergency health care: queuing ambulances; unsafe response times; unnecessary hospital admissions; prehospital care for acute coronary syndrome
2. Collaboration with paramedics as academic partners, contributing to both the relevance and validity of the research as well as the development of the profession through paramedic undergraduate and postgraduate education and research delivery;
3. Involvement of service users throughout research process;
4. Successful linkage of routine data – paving the way for further methodological innovation.

Impact has been achieved for patients, the NHS and paramedic workforce locally, nationally and internationally. Examples of impact from the UK, Canada and Australia include safe reduction in conveyance to hospital; provision of telephone advice; pre-hospital 12-lead Electrocardiography (ECG) evidence in international resuscitation guidelines. Awards won for

impact include the 2014 Swansea University Impact Awards, Age UK award for outstanding impact in public policy and services, and 2016 Fujitsu award for Outstanding Impact on Health and Wellbeing.

4. Improving patient safety in primary care (Andrew Carson-Stevens, Adrian Edwards, Joyce Kenkre, Carolyn Wallace)

The Primary Care Patient Safety (PISA) Group led by Andrew Carson-Stevens continues to lead discussions internationally (focused on PISA classification methodology) and nationally (Wales, Public Health Wales and 1000 Lives Plus) about priorities and opportunities to improve primary care safety. The Royal College of General Practitioners (RCGP) 'Clinical priority and Spotlight award' is also progressing, and the first 3 workshops in London, Cardiff and Liverpool will be held early in 2017 (led by the PISA team). The PISA team have also been commissioned to write a piece for Pulse (the GP professional newspaper) about 10 key suggestions for patient safety, and will be contributing to the 2017 Welsh Government Quality Delivery plan.

5. Oral health (Ivor Chestnutt)

In the past year the long running NIHR 'Seal or varnish' clinical trial has concluded (clinical trial of 835, 6-year olds to determine the relative cost and clinical effectiveness of preventive dental technologies). This work was designed to compare the clinical effectiveness of fissure sealants (FS) and fluoride varnish (FV) in preventing dental caries in first permanent molars in 6-7 year-olds and recruited 835 children. The work concluded that in a community oral health programme utilising mobile dental clinics and targeted at children with high caries risk, twice yearly application of fluoride varnish resulted in caries prevention which was not significantly different from that obtained by applying and maintaining fissure sealants after 36 months.

The results of the 'Seal or varnish' trial have informed a recent circular issued by the Chief Dental Officer for Wales which has instructed the Community Dental Service to refocus their community sealant programmes to alternative approaches. School based fissure sealants programmes are common in the United States and the 'Seal or varnish' team are expecting this work to have significant repercussions when the results are presented at a forthcoming meeting in San Francisco and formally published in May 2017. The outcomes of this work will have significant impact on oral health improvement policy nationally and internationally.

6. Infection and antimicrobial resistance (Nick Francis)

The "When Should I Worry?" (WSIW) booklet reduced antibiotic prescribing for respiratory tract infections in children by 66%, and is now widely used in the NHS and globally. The

www.whenshouldiworry.com website includes training for clinicians and downloads of the booklet, both free of charge, and printed versions of the booklet are available through the RCGP Bookshop. Over 230,000 booklets have been purchased for use in the NHS, and there are over 41,000 visitors and 121,000 website page views from Jan 2014 to March 2017.

We have developed a [Molluscum Contagiosum \(MC\) information resource website](#) to support parents to make an accurate self-diagnosis in their children, based on our research on prevalence, quality of life and prognosis of children with MC in the community. The site has had over 9,000 page views and was recently picked up by health news feeder and media company Health Canal and a link established.

7. Improving patient-centred outcomes for women with Autoimmune Rheumatic Diseases (ARDs) in relation to starting a family: the STAR Family study (Rhiannon Phillips, Adrian Edwards, Natalie Joseph-Williams).

Effective support for women with ARDs during family planning, pregnancy and early parenting is likely to have a high impact on women's satisfaction with care, quality of life, and a range of other maternal and child health outcomes. We have been working closely with stakeholders (patients, health professionals, researchers, and government representatives) to identify and priorities research needs to improve patient care in this context. We have used a variety of methods, including an online survey, qualitative interviews, and a stakeholder consensus event.

The highest priority research theme identified at our stakeholder event was to improve shared decision making (SDM) in rheumatology services. This has led to the development of a grant application, which was submitted to Arthritis Research UK in March 2017. We anticipate building further applications around the other high priority areas that were identified over the coming year (e.g. pre-conception, provision of emotional support, peer-support approaches, personalised case management and care planning). We also plan to look at ways to extend this work to a wider range of musculoskeletal and mental health complaints, which commonly affect women of reproductive age.

Commercial and industrial collaborations

PACE

PACE: General Practitioner (GP) use of a C-Reactive Protein (CRP) Point of Care Test (POCT) to help target antibiotic prescribing to patients with Acute Exacerbations of Chronic Obstructive Pulmonary Disease (AECOPD) who are most like to benefit.

Nick Francis and colleagues from the Centre for Trials Research, Cardiff University, are working with Alere Inc. a global manufacturer of rapid point-of-care diagnostic tests. The PACE study will determine whether GP use of a simple, rapid, one-step CRP POCT in addition to clinical assessment leads to improved antibiotic prescribing decisions for AECOPD in general practice, such that fewer antibiotics are prescribed overall without having adverse effects for patients.

PRINCESS

PRINCESS: Probiotics to reduce infections in care home residents.

Nick Francis is working with Chris Butler and colleagues at University of Oxford, with Centre for Trials Research, Cardiff University and commercial partner CHR Hansen Probiotic. The PRINCESS study aims find out whether a probiotic supplement can reduce the number of infections in care home residents, to reduce antibiotic use in this vulnerable group and help curb antibiotic drug resistance.

ABACus

ABACus: Awareness and Beliefs About Cancer.

Kate Brain and colleagues are working with Digital Morphosis and Tenovus Cancer Care to develop the health check, an interactive touchscreen questionnaire completed on an electronic tablet with a lay advisor who is trained to provide behavioural advice and support. The ABACus health check has been tested to beta stage and Tenovus Cancer Care is using the current version in their practice of engaging and raising cancer awareness among people living in deprived areas of Wales. A larger randomised controlled trial is planned across sites in Yorkshire and Wales, with the next version to be hosted on a web platform.

NHS collaboration

Community Dentistry

In addition to the ‘Designed to Smile’ and ‘Seal and Varnish’ studies, PRIME is also active in the ‘Optimising skill mix in dentistry: dental therapists, direct access and the future’ project funded by Welsh Government (Ivor Chestnutt co-applicant). The research will provide the foundation of evidence to determine the future delivery of a prudent NHS Dentistry Service in Wales. Urgent action is required to address problems arising from an aging population retaining their teeth, high levels of avoidable tooth decay in children and poor access to NHS dental services in parts of Wales. When staff ‘only do what only they can do’ we say that the skill-mix of that team is optimised, or working at its best. Studies in other parts of the health service show us the benefits of developing the skill-mix. These include improved access to services, reduced waiting and freeing up more qualified staff for the complex treatments.



Community Optometry

Rachel North, Professor of Optometry at Cardiff University and colleagues at Swansea University and University of South Wales are leading an evaluation of the treatment of wet age related macular degeneration (wAMD) in the community, currently being piloted by four health boards in Wales. It is estimated that there are 40,000 new cases of wAMD each year, and that the incidence will continue to rise with the ageing population. These primary/community care pilots need to be compared with current hospital based care and a robust evaluation to examine whether the pilot sites can provide safe and efficient services for patients with wAMD and their carers. A pilot study looking at the **optimum screening intervals for people with diabetes and non-sight threatening diabetic retinopathy** has recently been completed by Rachel North and colleagues at the Diabetes Research Unit, Swansea University, with results to follow shortly.



Community Nursing

The **Community Nursing Research Strategy for Wales Board**, originally convened in 2014 continues to be chaired by Professor Joyce Kenkre, with support from Dr Carolyn Wallace. This year has focussed on agreeing leads for the themes to further progress research in areas

including i) Organisational change and service redesign, ii) Nursing roles, iii) Skill mix; iv) Evidence and outcomes; iv) Education and development, v) Long-term care; vi) Occupational health; vii) Patient safety; viii) Patient and user perspectives.

Community Pharmacy

We have been actively engaged with [Pharmacy Research Wales](#) led by Dr Sarah Hiom, Cardiff and Vale University Health Board, in the consultation exercise and the development of their [Research Strategy for Wales](#) launched in November 2015, at the Royal Pharmaceutical Society's 4th Annual Medicine's Safety Conference. PRIME also provided support for a recent event led by Dr Hiom to scope the skills, knowledge, experience and behaviours required for new local, evolving pharmacy practice research leader posts.

A successful application to KESS2 PhD studentships was awarded in collaboration with Cardiff University School of Pharmacy (lead supervisor: Professor Les Baillie) in partnership with Aneurin Bevan University Health Board. The project focus is on antibiotic wound dressings, wellness and public, patient and NHS staff engagement.

General Practice

PRIME Centre Wales Director Adrian Edwards (practicing GP), Associate Director Nefyn Williams (practicing GP), and workpackage leads Nick Francis (practicing GP) and Ivor Chestnutt (Specialist in Dental Public Health) sit on the Health and Care Research Wales Primary Care Operational Working Group which oversees progress and development of the operational delivery for Primary Care and develops recommendations for improvements in policy and practice for Primary Care. The Board also oversees the Primary Care Research Incentive Scheme (PiCRIS) which aims to increase capacity in primary care in Wales to support high-quality research and create a strong primary care research base and culture.

Dr Huw Williams, Royal College of General Practitioners Marie Curie Palliative Care Research Fellow, is undertaking an improvement project to improve the quality and safety of end of life care by out-of-hours GPs in Aneurin Bevan University Health Board. Williams is working as a 'researcher in residence' with the Palliative Care Research and Development Director, Professor Simon Noble and Clinical Directors from primary care and the GP out-of-hours service.

The Primary Care Patient Safety (PISA) Group have collaborated with the All Wales Therapeutics and Toxicology Centre to develop medication-related safety incident vignettes for inclusion in two [Royal College of General Practitioners e-learning modules](#). The e-learning modules describe scenarios where patient safety incidents have occurred and then look at how these can be prevented, as well as exploring improvement tools to support primary care teams to identify learning to improve future care delivery in their practice.

Health Visitors

PRIME engagement with health visitors has been enhanced this year with the collaboration in two active research projects detailed below.

Family Resilience Instrument Tool (FRAIT) – Phase 2

The Family Resilience Assessment Instrument and Tool (FRAIT) has been developed in collaboration with health boards for health visiting practice. Following pilot testing in practice, the refined FRAIT will be rolled across Wales in 2017. FRAIT is highlighted as one of the key specific assessment tool in Welsh Government's Health Child Wales Programme Quality Assurance Framework published in 2016.



Hydra Minerva suite used in FRAIT simulation



Family Resilience Instrument study team

Enhancing the quality of information sharing in primary care for childhood respiratory tract infections

The infections and antimicrobial resistance team has been working with health visitors at Hywel Dda University Health Board, who are developing a new programme involving use of our 'When Should I Worry?' booklet which provides information for parents about the management of respiratory tract infections (coughs, colds, sore throats, and ear aches) in children, and has been designed to be used in primary care consultations. 4,000 copies in English and Welsh have been printed for distribution to Health Visitors at their 56 GP Surgeries and 3 Flying Start Locations, as part of a pilot study the aims of which are:

1. To supports prescribing decisions
2. Reduce antibiotic prescribing
3. Better informed parents - shared decisions choose wisely Wales
4. Improved patient experience
5. Fewer GP consultations



The 'When Should I Worry?' booklet has also been made available via the Royal College of General Practitioners Bookshop with 250,000 booklets distributed to date. The use of the

booklet is supported by the website www.whenshouldiworry.com which received 17,000 visits in the last year.

Physiotherapy

Fiona Wood has also worked with Robert Goldsmith (physiotherapist at Cardiff and Vale University Health Board) on a **successful application** to the Research Capacity Building Collaboration (RCBC) Wales First Into Research Fellowship scheme for the project: ‘Understanding Sciatica: Illness beliefs and exercise treatment beliefs in a lumbar radicular pain population’.

Public Health Wales

We are contributing to Public Health Wales plans to implement aspects of the **Antimicrobial Resistance Delivery Plan for Wales**. Nick Francis and Harry Ahmed are contributing to Working Groups on Urinary Tract Infection and C reactive protein Point of Care Testing and speaking at the annual Antimicrobial Resistance (AMR) Stewardship conference.

Welsh Ambulance Services Trust

We work closely with the Welsh Ambulance Services Trust (WAST) on identifying priorities for research in prehospital care, considering how research findings can have an impact on practice, and on delivering studies. We are collaborating on two feasibility studies led by WAST and funded by the Health and Care Research Wales Research for Patient and Public Benefit programme



(RfPPB): TIER (on care pathways for patients with TIA) and RAPID (on prehospital analgesia for patients with suspected hip fracture).

This year we secured funding for PhRASE, a third RfPPB study, on care of patients with acute sepsis. The RfPPB studies involve research paramedics based at Swansea University, working closely with colleagues in WAST. WAST is also active in the ERA study, as one of the four case study services where we are examining the use of electronic records in ambulances.

Methodological Innovation

There have been five papers published with methodological innovations, two methodological presentations in national and international conferences and eight research projects completed or in progress, and one doctoral fellowship.

There are currently two strong methodological innovation themes, which cut across all Workpackages:

1. The use of routinely collected data
2. Obtaining consent from vulnerable adults who lack capacity, have altered mental states or are dying.

Developing methodological innovation themes include:

1. Process evaluation and implementation science
2. Efficient systematic review design including rapid reviews
3. Efficient trial design including adaptive designs, inclusion of modelling to allow for adherence

Activities to support methodological innovation

- **Formalised links with SAIL Databank** - Ashra Khanom has taken on the role of providing a link between PRIME researchers and the SAIL database, to support the development of new research proposals. We continue to expand our interest in the use of anonymised routine linked data to explore feasibility, effectiveness and impact of interventions and to support improvements to service delivery. We are also examining the role of linked data through other approaches, e.g. the direct linking of ambulance service and acute trust datasets in the SAIL project.
- **Training provided in concept mapping and Rasch analysis** - Joyce Kenkre and colleagues have provided training in concept mapping and Rasch analysis to the **Community Health and Care Research Cognate Group**, University of South Wales.
- **Training workshop on applying the Behaviour Change Wheel** - Stephanie Smits provided training on using the Behaviour Change Wheel to develop a primary care intervention to expedite the diagnosis of symptomatic cancer, for the Wales Intervention and Cancer Knowledge about Early Diagnosis (WICKED) study.
- **Health Wise Wales module** in development on bowel cancer topics. The module will go out on Health Wise Wales in October 2017 and will gather data on many topics related to bowel cancer. This will form a platform for future bowel cancer research. Sunil Dolwani (Wales Cancer Research Centre), Kate Brain and Stephanie Smits.
- **Collaborations with DECIPHer** have allowed for dissemination of methodological expertise in the development and evaluation of complex interventions.

Research projects involving methodological innovation

- The **STAR Family Study** is using novel participative methods in narrative interviews with women who have rheumatic diseases, to facilitate them in telling their story. This includes the provision of resources to create a timeline, draw, write, and/or create a collage prior to the interview, which they can then use as a guide in talking to the interviewer about their experiences.
- The analytical approaches to analyse patient safety incident reports developed by the **Primary Care Patient Safety (PISA) Research Group** led by Dr Andrew Carson-Stevens have informed a case study used in the 'Epidemiological Methods for Patient Safety and Quality' course at the Harvard Chan School of Public Health.
- **Informed consent and proxy decision making in research involving adults lacking capacity** development of an intervention to support proxy informed decision making, set within ethical and legal frameworks. This is a NIHR Doctoral Fellowship Award led by Victoria Shepherd, supervised by Kerry Hood and Fiona Wood. The aim of this project is to develop a tool to support informed decision making for adults lacking decision-making capacity to take part in research. This will be achieved through: exploring the ethical and legal factors involved; deciding what factors and information must be included in the support tool; and developing a support tool that is suitable to be used by families and friends when making decisions for adults lacking capacity.
- **Network exploring Ethics of Ambulance Trials (NEAT)** aims to develop a network exploring the ethics of conducting randomised controlled trials (RCTs) involving ambulance services. A systematic review will compare legal and ethical requirements for gaining consent in emergency settings in the UK, mainland Europe, US and Australia. Qualitative studies with patients and ambulance staff will explore the ethical issues in undertaking research, particularly trials, in emergency prehospital ambulance care. These are mostly around challenges in gaining consent; including patients without capacity (unconscious, dementia, or simply traumatised); and carrying out different types of studies e.g. cluster trials, and anonymised linked data follow up. Networking events with researchers, ambulance leaders, policymakers and ethicists will discuss findings and develop preliminary recommendations for best practice.
- **P2P Solva Care feasibility study** led by Bridie Evans is methodologically innovative on two aspects: linked data; collaborative approach to undertaking the research in partnership with a community group.
- **Assessing fidelity to Motivational Interviewing in Public Health Interventions (MI-PHI)**. Nina Gobat and colleagues have developed a reliable measure of 'focusing' in Motivation Interviewing, with a paper on development and initial reliability in development. Further validation planned in next stage grant application. The overall aim is to develop a process evaluation method of **MI fidelity**, by reliably assessing when

and how clinicians establish a behavioural focus against which to strategically elicit and reinforce change talk.

- **Fracture in the Elderly Multidisciplinary Rehabilitation (FEMuR)** developed a community-based rehabilitation intervention following hip fracture in the frail elderly using mixed methods including realist review, survey and focus groups. The intervention was tested in a randomised feasibility study. This included a triangulation study comparing health service activity data from participant self-report, collected in the client service receipt inventory of the patient completed questionnaire, compared with routinely collected electronic data from secondary, community and primary care sectors.
- **Methods for the assessment of the effectiveness of treatment sequences for clinical and economic decision making in the NHS (NIHR fellowship)** aims is to inform a framework for conducting quantitative evidence synthesis of the effectiveness of sequential treatment options in the context of decision analysis. The work includes a comprehensive methodological review of the literature to identify quantitative evidence synthesis methods that have been developed to estimate the treatment effect of interventions conditional on position in a treatment sequence.
- **Well-being and Health in Schools Project** used a novel methodological approach by conducting a pragmatic formative evaluation of front line innovation at a school in Wales that had integrated the restorative approach to impact student mental health and wellbeing outcomes.
- The research design for the **FRAIT (Family Resilience Assessment Instrument and Tool)** included in phase 1 Group Concept Mapping (Concept Systems Global Max software) to engage with health visitors across Wales and collate data to develop the family resilience concept maps. From which the Family Resilience Instrument and Tool (FRAIT) was developed. Prior and post phase 2 (testing in practice) we added a Hydra Simulation suite (immersive decision making) test with practitioners to simulate use and make changes prior to testing and to verify findings prior to commissioning across Wales.

Research Portfolio

Grants applied for and awarded following Centre funding, April 2015:

Study	Funder	Description
ABACus Phase 3	Yorkshire Cancer Research	A randomised controlled trial of the health check intervention to improve cancer symptom awareness and help seeking among people living in socioeconomically deprived communities.
Academic Clinical Fellows Programme	Welsh Government	(North Wales)
ACTION	ANROWS (Australia)	Assessing uncertainties in General Practitioners' identification and treatment of domestic and family violence (ACTION)
Androgens	Tenovus	Choice of Intermittent vs Continual - Prostate Cancer
Antibiotic exposure and subsequent antibiotic "response failure" in children	RCGP Scientific Board	Antibiotic exposure and subsequent antibiotic "response failure" in children presenting with acute respiratory tract infections (RTI) in primary care: a matched case-control study
Avoidable harm in primary care	The Secretary of State for Health / NIHR	Understanding the nature and frequency of avoidable harm in primary care
BATHE	NIHR HTA	The BATHE study (Bath Additives in the Treatment of childhood Eczema) aims to find out whether bath emollients help childhood eczema or not.
Bee Well Caerphilly	Cardiff University	PhD studentship
BRIGHT Trial	NIHR HTA	Brushing Reminder 4 Good oral Health: the clinical and cost-effectiveness of a Short Messaging Service behaviour change programme to improve the oral health of young people living in deprived areas
Cancer diagnostic tools to aid decision-making in primary care	NIHR HTA	Understanding the effectiveness, cost-effectiveness and current use of cancer diagnostic tools to aid decision-making in primary care
CARer-Administration	HTA	CARer-Administration of as-needed sub-cutaneous medication for breakthrough symptoms in home-based dying patients: a UK study
CLASP	NIHR Programme Grant	Cancer: Life Affirming Survivorship support in Primary care (CLASP) Programme
Diagnostic journeys in prostate cancer	Cancer Research Wales	Diagnostic Journeys in Prostate Cancer (DJiP)
EARP Quali	ABMU (Pathway to Portfolio)	The use of Emergency Admissions and Frailty Risk Prediction Tools in UK primary care - a Qualitative study (EARP Quali)
Empowering high risk, harder to reach groups	CRUK Population Research Committee	Empowering high risk, harder to reach groups to engage with lung cancer awareness and timely symptom presentation
Engaging high risk, harder to reach groups	Cardiff University PhD Scholarship scheme	Engaging high risk, harder to reach groups in lung cancer screening and prevention. Student Pamela Smith.

EPICC	Erasmus+ Key Action 2 Strategic Partnerships	Enhancing Nurses Competence in Providing Spiritual Care through Innovative Education and Compassionate Care
ERA	NIHR HS&DR	Electronic Records in Ambulances to support the shift to out of hospital care: challenges, opportunities and workforce implications
EXPLAIN	Falck Foundation	Exploring factors increasing paramedic likelihood of administering analgesia in pre-hospital pain – a cross-sectional study
GMI_ALC	Wellcome Trust	Developing a teacher training programme for a Group Motivational Interviewing intervention to prevent alcohol misuse in secondary schools.
GPs in Emergency Departments	NIHR HS&DR	Evaluating effectiveness, safety, patient experience and system implications of different models of using GPs in or alongside Emergency Departments
Impress Lymphoedema Study	KESS II in collaboration with Huntleigh diagnostics	Intermittent Pneumatic Compression for treating lower limb phlebolymphoedema: a feasibility study
Improving early detection of melanoma	Melanoma Focus	Improving early detection of melanoma by increasing young people's awareness of symptoms, skin self-examination and communication: A quasi-experimental trial with embedded process evaluation
Improving the quality of out of hours palliative care services for end of life patients	RCGP/ Marie Curie Research	
Informed consent and proxy decision making	NIHR: Doctoral Fellowship Award	Informed consent and proxy decision making in research involving adults lacking capacity: development of an intervention to support proxy informed decision making, set within ethical and legal frameworks. (PhD Studentship)
Innovation UK, Antimicrobial Resistance:	Joint study with Imspex Diagnostics Ltd	
Investigating the prodrome of Type 1 diabetes	The Novo Nordisk UK Research Foundation	Investigating the prodrome of Type 1 diabetes in childhood using SAIL and Brecon Group data to reduce ketoacidosis at presentation
Late presentation in patients with lung cancer	Tenovus Innovation Grant	Factors associated with late presentation in patients with lung cancer
Lay referral in the early diagnosis of cancer	KESS II in partnership with Tenovus	To explore lay referral for potentially cancerous symptoms to understand whether it can contribute to earlier cancer diagnosis
LUCI study	Health Research Awards	Morbidity following urinary tract infection in young children: an electronic record-linked cohort study
MI-PHI	Wellcome Trust	Assessing fidelity to Motivational Interviewing in Public Health Interventions
NEAT	Wellcome Trust	Network exploring Ethics of Ambulance Trials
Noisy Breathing at life's end.	Betsi Cadwaladr UHB	Noisy Breathing at life's end. Pathway to Portfolio

Optimising skill mix in dentistry	RfPPB (Prudent Healthcare)	Optimising skill mix in dentistry: dental therapists, direct access and the future
Optimum screening intervals for people with diabetes	Wellcome Trust	Optimum screening intervals for people with diabetes and non-sight threatening diabetic retinopathy – a pilot study
OSTRICH	NIHR HTA	Randomised trial of oral steroids to improve hearing that included 380 children with ‘glue ear’.
OvSTAT stakeholder engagement	Cancer Research UK	OvSTAT (ovarian cancer symptom awareness tool) stakeholder engagement
PAPHiF	Welsh Ambulance Services NHS Trust	Pilot Study to validate a clinical tool to aid paramedics in their diagnosis of hip fracture
Patients’ reasons for consulting a General Medical Practitioner with a dental problem	RCPS Glas - Young Investigator	Patients’ reasons for consulting a General Medical Practitioner with a dental problem: a cross-sectional study
PHED Data	The Health Foundation	Data linkage across ambulance services and acute trusts: assessing the potential for improving patient care
PHRASE	RfPPB	Prehospital Recognition and Antibiotics for 999 patients with Severe sepsis (PHRASE): a feasibility study
Predict-CAT	NIHR	Measuring and predicting patient level vision related health benefits and harms. Large scale £1.9M NIHR grant led by Bristol Hospitals, with Cardiff WP starting in August 2017. We will be developing and evaluating an Option Grid for cataract surgery.
PriMus	HTA	Primary care management of lower urinary tract symptoms in men: development and validation of a diagnostic and decision making aid
Prudent Healthcare	Health and Care Research Wales RfPPB (Prudent Healthcare)	
RAPID	RfPPB	Rapid analgesia for pre-hospital hip disruption - feasibility study
Realistic evaluation of BRAVE program	KESS II	A Realistic evaluation of BRAVE program work streams: investigating their evidence base. (Domestic abuse study). MRes.
Research literacy for the Welsh Baccalaureate	Wellcome Trust	Research literacy for the Welsh Baccalaureate – a scoping study
Scoping the decision for unscheduled care from a care home setting	Cwm Taf UHB (Pathway to portfolio)	Scoping the decision for unscheduled care from a care home setting
SOLVA	Hywel Dda Health Board	Proposal to assess the feasibility of evaluating the impact of Solva Care
Spotlight Project – Patient Safety in Primary Care	RCGP Spotlight Award	Spotlight Project – Patient Safety in Primary Care
Supply of NHS 111 Integrated Urgent Care Workforce	Health Education England	Supply of NHS 111 Integrated Urgent Care Workforce Development Programme - Pilot, testing and evaluation project

Development Programme		
Supporting patients with long term neurological conditions	RCGP – Scientific Foundation Board	How can we help health care professionals to support patients with long term neurological conditions in the self-management of their conditions? A realist synthesis
The provision of general medical services by non-medical health professionals	Health and Care Research Wales Studentship award	The provision of general medical services by non-medical health professionals: systematic reviews, survey and mixed methods study
TIER	RfPPB	Transient Ischaemic Attack 999 Emergency Referral: feasibility trial
Titanium 3D printed surgical guides and implants in crano-facial reconstruction surgery	KESS II in collaboration with Renishaws PLC	The Health Benefits of Titanium 3D printed surgical guides and implants in crano-facial reconstruction surgery.
Tobacco use and pathways into regular smoking among young adults aged 16-25	CRUK Population Research Committee	Tobacco use and pathways into regular smoking among young adults aged 16-25: when, where and how can new public health interventions interrupt 'social' smoking trajectories? (Post-doc Fellowship for Ria Poole)
WHISP	Wellcome Trust	Well-being and Health In Schools Project (WHISP): Phase I
WICKED	Cancer Research Wales Programme Grant	Wales Interventions and Cancer Knowledge about Early Diagnosis): The development and evaluation of primary care interventions to expedite the diagnosis of symptomatic cancer in Wales.

5. CONCLUSIONS

- Health & Care Research Wales funding has been vital to provide a **platform for growth of research in the primary and emergency care sectors** that account for over 90% of all patient encounters in the NHS. The stronger these sectors are the stronger the whole health service, and a firm academic base underpinning this is essential. The funding has enabled the synergistic integration of the two previous entities – the Wales School for Primary Care Research, and TRUST Network for Emergency and Unscheduled Care Research.
- We are starting to **realise these benefits** with research income up to a total of £18M group led and supported research income awarded (with £11M accruing to Wales) by the end of the second year, and now showing cross-sectoral, **multi-disciplinary research** support, dissemination, **knowledge transfer, and impact**.
- All our research shows a strong **ethos of collaboration** across the universities, patient and public involvement, collaboration with social care and other key stakeholders.
- Our **Public & Patient Involvement methods are an exemplar** for many other research groups and networks; interfacing with School for Social Care Research, Involving People, Wales Cancer Research Centre, the PiCRIS network, Trials Units and **other HCRW entities** is integral to our work to achieve high quality research, impact and to build capacity for the future.
- In the next 1-3 years, we aim to develop these strengths, particularly focusing on the **interfaces and opportunities for synergy between our Workpackage and Cross-cutting Theme** areas, and with the other Centres, Units and HCRW entities.
- Our research both meets **top policy-priority areas**, and also informs them, for example regarding the Cancer Delivery Plan, the sustainability of primary care and skill mix developments, Prudent Healthcare including especially Unscheduled Care domains, tackling inequalities including disparities in the patterns of harm arising from healthcare itself.
- We recognise the importance of growing the research economy in Wales, and make considerable efforts to **build capacity and leadership** for the future, and **widen participation** among patients, public, health and social care staff and other stakeholders.
- Going forward our research income generation strategy will focus on securing high value grants and grants with additional value to the research economy of Wales (i.e. significant overheads awarded). We will therefore make it a specific **strategic objective to increase the capture of NIHR grants**, and where possible **Research Council grants** as well.