

Nursing, Midwifery and Allied Health Professions Research Unit Scientific Review 2010-2017

Volume

1



nmahp-ru
Nursing, Midwifery and Allied Health Professions Research Unit

Improving health through research 

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Nursing, Midwifery and Allied Health Professions Research Unit Scientific Review 2010 - 2017

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Preface

The Nursing, Midwifery and Allied Health Professions Research Unit (NMAHP-RU) was established in 1994, with core funding from the Chief Scientist Office (CSO), as the Nursing Research Initiative for Scotland (NRIS), hosted by Glasgow Caledonian University.

Prior to its first review, the Unit's focus was on responding to research ideas from NMAHP staff all over Scotland, providing advice and support, rather than on Unit initiated research activity. The 1998 review recommended that the Unit's activity become focussed within programmes of research and reflect work within the NMAHP community; the name of the Unit was then changed from NRIS to NMAHP-RU. In 2000 Glasgow Caledonian University, with the agreement of Chief Scientist Office, approached the University of Stirling to request that Professor Niven, then head of the Department of Nursing and Midwifery, take on the post of Unit Director part time, with a Unit base becoming established at the University of Stirling. Further reviews were conducted in 2002 and March 2010 (with an interim review in 2007). This will be the fourth full Unit review since its establishment.

The CSO funds the NMAHP-RU to:

- develop a high quality research agenda which is useful and relevant to staff delivering patient care throughout Scotland
- provide a strong national focus for patient care research
- involve nurses and other direct care staff where appropriate in its research

This 2017 NMAHP-RU Review involves 2 stages. The first stage required the submission of a Strategic Statement to CSO making the case for the Unit and its value to stakeholders and highlighting the current and future strategic objectives of the Unit. The statement was sent to stakeholders for comment in June 2017 and feedback was received in August 2017. This report includes a copy of the statement and a response from NMAHP-RU to the stakeholder comments. The second stage of the Review is the Scientific Review (to be held on the 23rd and 24th November 2017). This involves convening an independent Review Panel to assess the scientific achievements and outputs of the Unit as well as its overall contributions to policy and NMAHP practice in Scotland and beyond. The achievements and outputs presented will cover Unit activity from January 2010 to the end of May 2017, and future plans will reflect intentions until the next review due in 2022.

The documentation for the Scientific Review is presented in 3 Volumes: Volume 1 reports a summary of activity and achievements alongside descriptions of our programmes and workstreams. This covers Unit staffing, Unit income/grant capture, scientific outputs (publications), capacity building activity, and engagement with the public/patients, policy makers and the NHS (including NMAHP's). Volume 1 also includes the Strategic Statement and our response to this, as well as the Recommendations from the 2010 review and our subsequent actions towards these. Volume 2 includes a report for each project funded within the review period, a list of publications and some analysis of publication impact. Volume 3 (electronic only) includes additional Unit documents such as the Unit Induction manual, a complete list of national and international collaborating institutions and organisations and individuals within these, and additional miscellaneous information on other outputs.

We hope the Review documentation provides a detailed picture of who we are, how we work, what we have achieved, and what we aim to do in the next 5 years to enhance the evidence base for NMAHP practice in response to new and long standing challenges in delivering health and social care. We look forward to receiving feedback and discussing these documents and plans at our Review.

Margaret Maxwell

August 2017

Director's Overview



We believe that there is strategic value to SG and NHS Scotland from funding the NMAHP Research Unit. It is well recognised that the lack of a robust evidence base for many NMAHP delivered interventions results in significant variation in the processes and outcomes of care disadvantaging sections of the patient population and creating challenges for policy makers. The NMAHP Research Unit has a significant role to play in producing high quality research in a number of these therapeutic interventions





I took up post as Director of the NMAHP-RU in December 2016, having been Acting Director since April 2016 and Deputy Director since June 2009

Prof. Brian Williams was Director of the Unit from January 2011 until July 2016 which covers the majority of the interim period since the last Unit review. However, one of my first tasks as Deputy Director in 2009 had been to take a leading role in preparing the Unit for its 2010 Scientific Review. This will therefore be my second Review as a member of NMAHP-RU. In all, this is the fourth review of the Nursing, Midwifery and Allied Health Professions Research Unit (NMAHP Research Unit).

I am immensely proud of all that the Unit has achieved during this review period (March 2010-May 2017). I believe we have done everything, and more, that was asked of us following the previous review in 2010. We are now operating as an internationally competitive research unit, with demonstrable impact on patient outcomes, policy and practice both within Scotland and beyond.

We have made a substantial leap in attracting grant income and in diversifying our funding sources, we have increased the volume, and more significantly, the quality and excellence of our research outputs. Our efforts in engaging patient and public involvement (PPI) in our research are now exemplary. We have developed extensive national and international collaborations, gaining international awards and recognitions for our academic contributions.

We continue to make a significant contribution to developing capacity and capability for NMAHP research and to supporting national initiatives on Clinical Academic Careers and the development of national policy in this area. Additionally, we have conducted work of vital importance to the NHS in Scotland on behalf of the Chief Nursing Officer.

In the sections that follow we: (i) describe our vision and aims; (ii) set out our current operating environment, including financial and staffing arrangements; (iii) provide an overview of our achievements since 2010; (iv) respond to comments on our strategic statement; and (v) describe our plans for the future.

Note that for the period 2010-2017 our work was structured within two research programmes (Interventions, and Quality and Delivery of Care) and six cross-cutting workstreams (Pelvic health, Stroke, Maternal and child health, Health behaviour change, Long term conditions, and Innovations in services, system, and roles) which are described and reported in Section 2 of this Volume. Going forward we have suggested that the programmes should be revised. Further details are provided in Section 1.11 Future directions.

1.2 Unit vision and principles

The Unit's vision, developed by its staff in line with its remit from the CSO is:

1. To conduct high quality applied research that enables nurses, midwives and allied health professionals to make a difference to the lives of the people of Scotland and beyond.
2. To work with and enable the NHS and policy makers to identify effective and sustainable policies and interventions to impact on health and social care
3. To be an internationally renowned and innovative centre of excellence for NMAHP Health and Social Care research.
4. To maintain a highly supportive multidisciplinary environment and expand research capacity & capability across the professions to deliver the NMAHP researchers and research leaders of tomorrow.

To support our vision we also devised a set of operating principles (Figure 1) with the intention of achieving greater impact through collaboration and partnership, greater efficiency, a supportive research environment, and a strategic approach to prioritising our work and its dissemination. We believe that each of the following section in this Volume contributes to evidencing the enactment of these operating principles.



Figure 1
Key operational principles of the NMAHP RU

1.3 Operating environment

The NMAHP RU benefits from being co-located at two bases at the University of Stirling and Glasgow Caledonian University (GCU). Both Universities have a critical mass of strong, research-active nursing staff, with expertise in areas of clinical priority to the NHS, as well as world-leading researchers in social, behavioural and natural sciences. Glasgow Caledonian University also has a strong research active body of Allied Health Professionals to enhance and collaborate in AHP research within the Unit.

At the University of Stirling, NMAHP RU is part of the Faculty of Health Sciences and Sport, whose REF 2014 submission was ranked 1st in Scotland and 12th in the UK for Allied Health Professions, Dentistry, Nursing and Pharmacy. NMAHP RU staff work closely with world-leading researchers in Social Marketing, Management, Health Psychology and Social Work as well as working across disciplines with colleagues in Maths and Computing Science. Overall, Glasgow Caledonian University is ranked in the top 20 in the UK for health research at world-leading and internationally excellent standards. At GCU, we have strong links with the Department of Nursing and Community Health and the Yunus Centre for Social Business and Health, a leading centre for health economics research.

Both HEI's support the Unit by providing significant additional staff resources (see staff tables in Section 1.4) and/or return of fEC, and supporting Unit staff within their governance and support structures with access to all facilities and resources (accommodation, library, IT resources etc.). Financial arrangements at both HEI's are subject to change and these arrangements differ from those in place at our last review.

The work of the Unit is overseen by its Scientific Advisory Board, which is chaired by the Chief Scientist Office, and meets annually to provide critical advice to the Unit in relation to its scientific, policy and practice contributions and future directions. Membership of the SAB is requested as a minimum three year commitment to provide continuity of input; a list of current SAB members is provided in Volume 3.

1.4

Unit staff and staffing

The Unit is led by a full time Director and CSO core funds support four additional Professors, one Associate Professor and one Senior Research Fellow. This contrasts with the core funded research team in post in 2010 which consisted of the Director, one Professor, two Readers, and three post-doctoral Research Fellows; reflecting the on-going development of staff and recognition (by institutional management and academic peers) of the outstanding contributions core staff have made in their academic fields. In addition the CSO funding currently supports one Unit manager (1.0 WTE), an assistant unit manager (0.44 WTE) and one unit administrator (0.45 WTE).

The host Universities support additional posts: two Professorial posts at 0.4 WTE, two Associate Professor posts at 0.4WTE and one Senior Lecturer post at 0.4 WTE at University of Stirling (2.0 WTE posts in total); and two Senior Research Fellow posts (1.0 WTE and 0.6 WTE), three Research Fellows (all at 1.0 WTE), one Research Associate (1.0 WTE), and one Administrative assistant (0.6 WTE) at GCU. This contrasts with the 2010 Review where no institutional funding was in place outside of a commitment from Stirling to maintain the post of Chair/Deputy Director beyond the initial funded period by the Chief Nursing Office from 2009-2012.

In addition there are 24 externally funded research staff, one seconded Senior Research Fellow (Scottish Ambulance Service Paramedic at 0.4 WTE), with the Unit supporting 22 PhD students and 6 Clinical Doctorate students. The number of externally funded staff has doubled since the last review and the number of Doctorate students has more than trebled.

The staff complement covers the disciplines of Nursing, Midwifery and multiple AHP roles (Speech and

language therapy. Occupational therapy, Physiotherapy, Optometry, Prosthetics, Paramedic care), as well as a range of scientists and social scientists (Neuroscience, Biomedical science, Human nutrition and public health, Statistics, Sociology, Anthropology, Psychology, Psychotherapy, Political science), and clinical trialists/trial managers. (See Table 1 below for a list of staff and Appendix 1 for staff biographies).

Figure 2 presents the organisational structure of the Unit which is managed through its Executive committee which is chaired by the Director and attended by the Unit manager, all Professorial and CSO core staff, the Quantitative and Qualitative methods group leads, and with representation of contract research staff, PhD students and administrative staff. As recommended at our last review, a set of operational policies and processes have been developed and implemented. These are made available to all staff through our Induction Manual (see Volume 3: Word document available within the accompanying USB drive).

Table 1

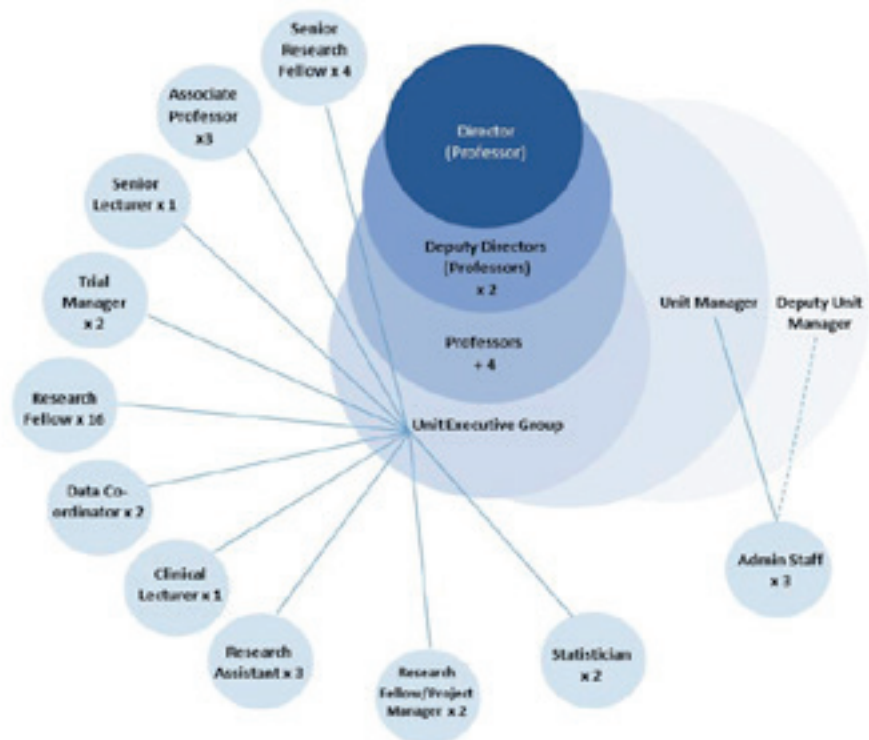
NMAHP Research Unit staff by funding source, WTE, and disciplinary background (as at 31st May 2017)

Core CSO Funded Staff		ROLE	BASE	FTE	Proportion funded by CSO in 2017/18	DISCIPLINARY BACKGROUND
Brady	Marian	Professor	GCU	100%	81%	Speech & Language Therapist
Cheyne	Helen	Professor/ Deputy Director	Stirling	100%	65%	Midwife
Duncan	Eddie	Associate Professor	Stirling	100%	87%	Occupational Therapist
Hagen	Suzanne	Professor/ Deputy Director	GCU	100%	78%	Statistician
Kerr	Lorna	Unit Manager	GCU	100%	89%	Administration
Maxwell	Margaret	Professor/ Director	Stirling	100%	65%	Social Scientist
McClurg	Doreen	Professor	GCU	100%	78%	Physiotherapist
Pollock	Alex	Senior Researcher Fellow	GCU	80%	69%	Physiotherapist
Stewart	Kim	Assistant Unit Manager	GCU	100%	44%	Administration
Stanton	Karen	Unit Administrator	Stirling	100%	45%	Administration
University Funded Staff					Proportion of time funded by host HEI for research within NMAHP-RU	
Ali	Myzoon	Senior Research Fellow	GCU	60%	100%	Neuroscientist
Campbell	Pauline	Research Fellow	GCU	100%	100%	Health Services Researcher
Elders	Andy	Statistician	GCU	100%	100%	Statistician
France	Emma	Senior Lecturer	Stirling	100%	40%	Psychologist
Harris	Fiona	Associate Pro- fessor	Stirling	100%	40%	Anthropologist
Hazelton	Christine	Research Fellow	GCU	100%	100%	Optometrist
Hoddinott	Pat	Professor	Stirling	100%	40%	GP

University Funded Staff					Proportion of time funded by host HEI for research within NMAHP-RU		
Morris	Jacqui	Senior Research Fellow	GCU	100%	100%	Physiotherapist	
Wells	Mary	Professor	Stirling	100%	40%	Nurse	
Vacant Post	-	Associate Professor	Stirling	100%	40%	-	
Vacant Post	-	Trial Statistician	GCU	100%	100%	-	
Vost	Catherine	Admin Assistant	GCU	60%	100%	Administration	
Contract Researchers				Grant Funded			
Calveley	Eileen	Research Fellow	Stirling	2%	100%	Health Psychologist	
Coles	Emma	Research Fellow	Stirling	100%	100%	Political Scientist	
Dickson	Sylvia	Researcher 1A	GCU	40%	100%	Trial Manager	
Gillespie	Nicola	Researcher 1A	GCU	100%	100%	Midwife	
Goodman	Kirsteen	Trial Manager	GCU	70%	100%	Clinical Trialist	
Hibberd	Carina	Research Fellow	Stirling	60%	100%	Biomedical Scientist	
Hoskins	Gaylor	Research Fellow/Project Manager	Stirling	60%	100%	Nurse	
Hunter	Suzannah	Admin Assistant	Stirling	60%	100%	Administration	
John	Alex	Researcher 1B	GCU	50%	100%	Speech & Language Therapist	
King	Emma	Research Fellow	Stirling	100%	100%	Biomedical Scientist	
Loudon	Kirsty	Research Fellow	Stirling	100%	100%	Biomedical Scientist	
McDonald	Matthew	Research Assistant	Stirling	100%	100%	Human Nutrition & Public Health	
McFarlane	Sarah	Researcher 1A	GCU	30%	100%	Physiotherapist	
Nicoll	Avril	Researcher 1A	GCU	60%	100%	Speech & Language Therapist	
Rousseau	Nikki	Research Fellow	Stirling	50%	100%	Social Scientist	
Scobbie	Lesley	Clinical Lecturer/Research Fellow	GCU	40%	100%	Occupational Therapist	

Contract Researchers				Grant Funded		
Semple	Karen	Research Fellow/Project Manager	Stirling	90%	100%	Prosthetist
Sergenson	Nicole	Data Co-ordinator	GCU	74%	100%	Clinical Trialist
Strachan	Heather	Research Fellow	Stirling	100%	100%	Nurse
Stratton	Susan	Trial Manager	GCU	100%	100%	Nurse
Torrens	Claire	Researcher 1A	GCU	100%	100%	Cognitive Behavioural Psychotherapist
Uny	Isabelle	Research Fellow	Stirling	80%	100%	Social Scientist
VandenBerg	Kathryn	Data Co-ordinator	GCU	100%	100%	Anthropologist
Wane	Sarah	Research Assistant	Stirling	90%	100%	Physiotherapist
Williams	Louise	Research Fellow	GCU	100%	100%	Psychologist
Seconded						
Fitzpatrick	David	Honorary Senior Research Fellow	Stirling	40%	Funded by SAS	Paramedic

Figure 2
NMAHP RU
Organisational
Structure 2017



1.5 CSO Core Grant Financial Statement 2010-2017

Funding received through the core grant from the Chief Scientist Office from 2010-2017 is presented in Table 2 below. Funding to the Unit has remained at a fixed amount since 2013. Although the funding has remained static over the majority of the period, the costs of the Unit have risen substantially due to cost of living and staff promotion salary increases and this is inflated by the subsequent loss of overhead income and Director's Discretionary Allowance normally paid as a proportion of staff costs.

Projected figures for the current financial year 2017-2018 based on actual salary costs (and the consequent increase in indirect costs and Director/s Discretionary Allowance that should also accrue) show the true running

costs of the Unit (for CSO funded posts) to be £960,005. This leaves the Unit running at a deficit of £228,169 for 2017/2018. The proportion of core staff costs covered by the CSO grant is shown in Table 1 above.

Table 2
Core Grant Financial Statement 2010/11-2016/17

Expenditure	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	TOTAL
Salaries	£484,840	£521,082	£516,304	£559,238	£537,147	£555,632	£556,289	£3,730,532
Indirect Costs	£98,573	£104,216	£109,049	£88,040	£107,212	£107,212	£107,212	£721,514
Travel & Subsistence	£10,387	£8,852	£9,061	£10,924	£13,634	£8,058	£4,491	£65,407
Stationery & Photocopying	£7,964	£6,043	£4,391	£3,068	£4,532	£3,182	£2,476	£31,656
Postage Telephone	£910 £1,711	£1,800 £2,126	£1,194 £2,037	£1,194 £2,037	£1,142 £2,868	£1,187 £2,480	£1,653 £2,176	£9,283 £15,441
Computing Costs	£1,218	£3,030	£4,332	£4,332	£3,824	£934	£3,912	£19,524
Specialist Publications	£0	£500	£0	£0	£105	£0	£0	£605
Publishing Costs	£994	£673	£1,358	£3,127	£1,164	£500	£341	£8,157
Equipment Costs	£3,048	£2,921	£578	£385	£1,868	£3,153	£1,014	£12,967
Miscellaneous DDA	£4,905 £33,774	£1,350 £57,408	£3,121 £58,421	£4,254 £55,237	£1,901 £56,439	£2,266 £47,233	£3,139 £49,134	£20,935 £357,646
TOTAL	£648,324	£710,000	£707,999	£731,836	£731,836	£731,836	£731,836	£4,993,667

1.6

External research funding and University investment

Table 3 summarises the external research funding obtained by the Unit for the review period and the level of our host HEI's investment in the Unit over the same period. A list of all grant awards from 2010-May 2017 by Programme (Interventions and QDC) for both Unit led awards and awards where the Unit is a collaborator with another institution as lead, is available in Appendix 2.

Table 3
External Research Funding and University Contribution 2010/11-2016/17

Awarding Body	Total Award	NMAHP Research Unit Award
Research Councils	5,743,824	470,014
CSO	5,078,507	2,200,416
National Institute for Health Research (NIHR)	17,263,768	4,365,855
Government & NHS funding (Excl NIHR)	3,437,121	2,727,871
Charities	3,396,280	1,200,543
European	1,954,515	533,190
Other*	2,231,961	563,493
Total Research Grant Income	39,105,976	12,061,382
University of Stirling Investment (staff posts)		£917,994
Glasgow Caledonian University Investment (staff posts)		£682,092
Total Income	£39,105,976	£13,661,468

*Other funding sources include: University pump priming/endowment schemes, Professional organisations and societies (e.g. Royal Colleges, Pelvic Obstetric and Gynaecological Physiotherapy Group), Cochrane.

These figures contrast with those presented in 2010 where the majority of funding was obtained from competitive CSO grants and other Scottish Government departments; with only £440,000 in awards to NMAHP RU from outside of Scotland. Although we remain competitive in Scotland in attracting additional CSO grant income, this now only accounts for approximately 13% of our grant awards.

The total for NIHR awards in 2010 was approx. £3.5 million but with only £33,500 of that being allocated to NMAHP RU. Currently, NIHR are by far our biggest funder (attracting £17.5 million in Unit led and Unit collaborating awards which accounts for 44% of our funding) with £4.5 million now being directly administered by the Unit (accounting for 36% of Unit administered funding).

To avoid artificial variation in income across the years, for example if a large grant is awarded in any one year, we also present our research income as ‘annual research income’¹ from awards (from Jan 2011 onwards) and have calculated this separately for Unit led awards, and for those in which the Unit is a collaborating partner. Figure 3 shows that the total annual research income (all grants) has increased from approx. £500k in 2011 to over £6 million in 2016, with similar income for 2017 (as at May 2017 only). Figure 4 shows in more detail the annual research income from NMAHP RU led grants by institutional share. This shows the increasing trajectory from 2011 to 2016 for both sites (again income for 2017 only includes up till May 2017).

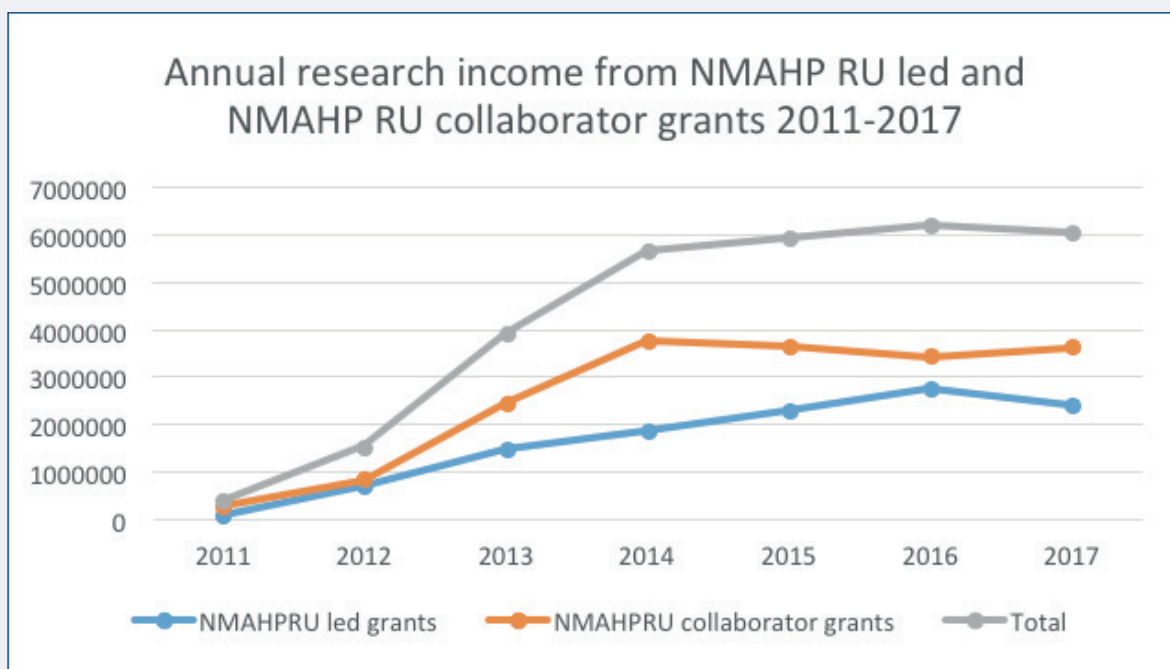


Figure 3 Annual research income 2011-2017 from NMAHP RU led and NMAHP RU Collaborator grants

¹‘Annual research income’ is an approximated figure based on the total grant award divided across project months.

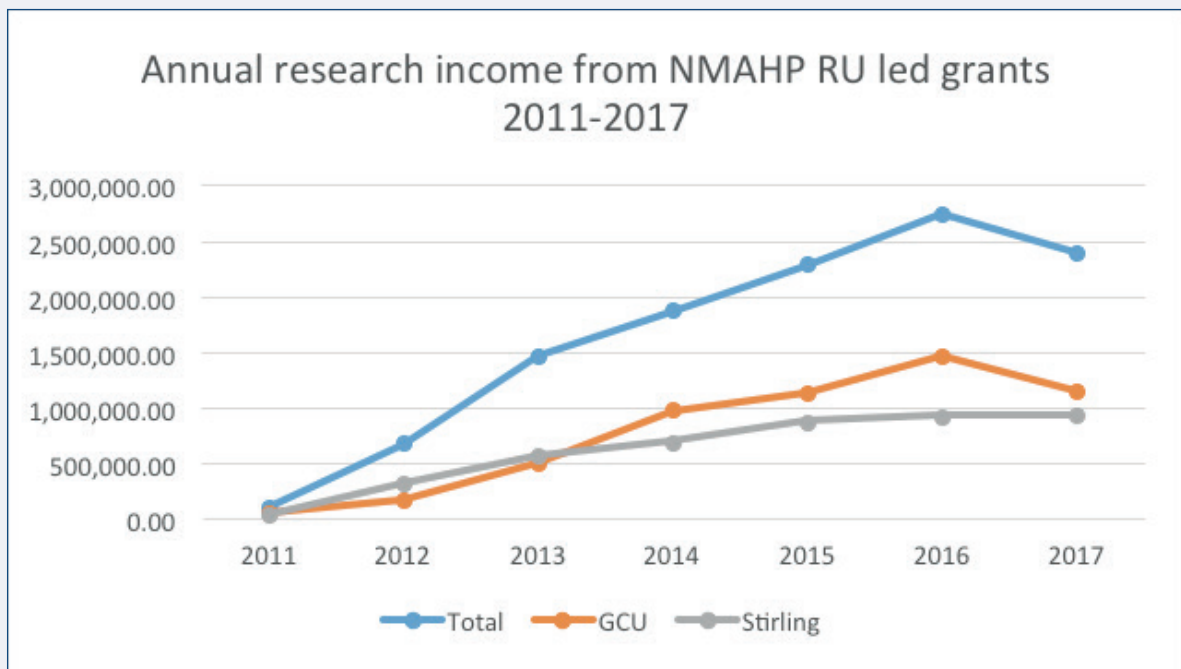


Figure 4

Annual research income 2011-2017 from NMAHP RU led grants by institution

Overall the Unit has produced 431 publications (journal articles, book chapters and published reports) between 2010 and May 2017 relevant to its two programmes of work. The Unit's publication profile follows a similar successful trajectory as for grant activity; increasing from 141 articles published in peer reviewed academic journals (2002 to 2009) (average of 20 per year) compared with 416 (journal only) articles published from 2010 -May 2017 (60 per year). Figure 6 shows the increase in number of publications since 2010.

The Unit now publishes around 60 peer reviewed papers per year in high impact and relevant clinical and methodological journals including: the Lancet, Journal of Advanced Nursing, International Journal of Nursing Studies, Cochrane Database of Systematic Reviews, Health Technology Assessment, Millbank Quarterly, Trials, BMC Health Services Research, BMC Family Practice, BMJ Open, European Journal of Oncology Nursing, Emergency Nurse, International Journal of Stroke, Supportive Care in Cancer, Pilot and Feasibility Studies, British Journal of Obstetrics and Gynaecology and many others.

One of our key targets from the previous review was to increase the quality and impact of our publications. We have conducted several different analyses using relatively new 'metrics' by which to judge such quality and impact of published work. Further details of the analysis of our outputs by the SCImago Journal Rank (SJR) (a measure of a journal's influence), the Field-Weighted Citation Impact (how citations compare with the field average for similar publications), and Altmetric (which calculates a media attention score for publications) are provided in Appendix 3, with additional analyses for selected papers presented in Volume 2.

Our contribution to Cochrane Reviews is significant, especially in the field of Stroke. NMAHP RU is the lead international producer of Cochrane reviews relating to Stroke rehabilitation, with the top 3 most accessed Stroke Cochrane reviews in 2015 all authored by our staff (also appearing amongst the Top 50 reviews across the Cochrane Library of over 17,000 reviews). See <http://www.nmahp-ru.ac.uk/news/2016/october/cochrane-Stroke-database/> for more information.

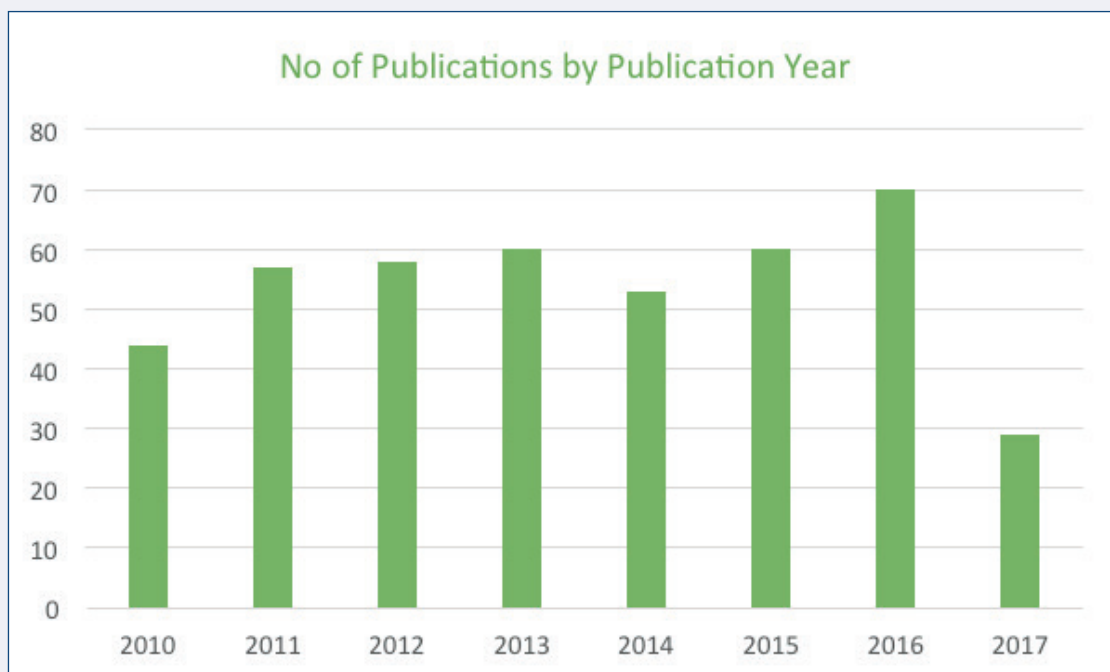


Figure 5
Number of Unit publications (journal articles, book chapters and published reports only) by year.

Whilst it can be difficult to determine the influence of research work on policy, Altmetric monitors a number of online policy documents and so allows some citing of NMAHP publications to be identified alongside our own knowledge of policy influences.

We have identified 31 (21 in Stroke) publications influencing policy across the following organisations: RCP and SIGN Guidelines, European Agency for Safety and Health at Work, World Health Organization, National Institute for Health and Care Excellence, UK Government (GOV.UK), Australian Clinical Guidelines Acute Rehab Management, Australian Clinical Guidelines for Stroke Management, Australian Policy Online, NZ Clinical Guidelines Stroke Management, USA VA and DOD Management of Stroke rehab, Canadian Best Practice Recommendations for Stroke care, Dutch SLT guidelines, and the Publications Office of the European Union.

As a specific example, the Unit was commended within the last REF for the impact its work has had on the care of women with pelvic organ prolapse, which was noted as “outstanding in terms of reach and significance” (see Volume 3: REF Impact Case Study). Our pelvic health workstream has conducted several multi-centre clinical trials and has established the evidence base for Pelvic Floor Muscle Training (PFMT) as an effective treatment for women with prolapse. The Pelvic health workstream has also successfully developed a Prolapse Symptom Scale and further tested a Prolapse Staging System to improve outcome measurement for women’s health physiotherapists in the UK. The research has informed local, national and international guidelines and changed practice in 48% of UK physiotherapists (see REF Impact case study).

The prolapse research programme has significantly informed international health policy and guidelines including the WHO International Consultation on

Incontinence expert committee which functions to promote improvements in the management of incontinence and prolapse worldwide.

Recommendations must be suitable for use in all parts of the world, recognising that the health services’ resources differ widely between countries. The resulting clinical manual is updated every four years and is vital to clinicians in the field of incontinence and prolapse, providing algorithms to guide practice. Professor Hagen has been an expert committee member on the 3rd, 4th and 5th editions of the manual and the publication includes findings from the Unit’s research studies, facilitating reach to a worldwide audience of practitioners. It is available via the European Association of Urology and International Consultation on Urological Disease (<http://www.icud.info/incontinence.html>) websites. Initial distribution of the 5th edition has been to 5,000 clinicians from over 200 countries, including all the member states of the United Nations.

These examples of evidence for impact are only some examples of the way in which the work of the Unit makes a difference to the health and wellbeing of the population of Scotland and beyond. It should also be seen in light of our extensive collaborations, especially our national and international collaborations and our exemplary PPI collaborations outlined in Sections 1.9 and 1.10 below, with further specific details of collaborating partners in Volume 3. We also provide further details on the impact of our research (and its impact potential) within our individual workstream reports in Section 2 of this document. We have also highlighted some examples of our impactful achievements within our Strategic Statement (see Appendix 7).

One of the key objectives of the unit is ‘to expand research capacity & capability across the professions to deliver the NMAHP researchers and research leaders of tomorrow’. As shown by our collaborations (in Section 1.9 below), we work closely with NMAHP practitioners across the NHS, involving them in the development, delivery and dissemination of our research to ensure, i) that our work is relevant to the real world of clinical practice, and ii) that we maximize opportunities to build research capability and capacity.

We have provided research placements for NMAHPs at different levels, and we have supervised a large number of NMAHPs undertaking Masters and Doctoral studies. The Unit has supervised 40 PhD students since 2010 and a further 11 Clinical Doctorate students (see Appendix 4). Many of our PhD and Clinical Doctorate students have undertaken part-time research studies alongside NHS or international clinical careers (Charlie Chung, Angela Kerrigan, Karn Cliffe, Ruth Astbury, Hege Prag Øra), Third sector service provision (Sally Boa), or alongside teaching roles within HEI’s (Katie Thomson).

Since 2012 the Unit, funded by a grant from the Chief Nursing Office, has coordinated and supported the Scottish Midwifery Research Collaboration (SMART) which was established following concerns about the potential for loss of senior research capacity in midwifery in Scotland. The award supported research projects in Robert Gordon, Dundee and Stirling Universities with collaborations involving all group members (MCH02.3). This group was co-ordinated by Professor Helen Cheyne and brings together senior midwife researchers in Scotland to work together to undertake research, write papers and build capacity for midwifery research <http://smartmidwifery.org.uk/>

Our approach to developing contract researchers and PhD students via a ‘knowledge, skills and competency framework’ (modelled on but extending the Vitae Researcher Development Framework), ensures that staff who have worked in the unit are highly employable as well-rounded academics and clinical academics. This is evidenced by the significant number of contract researchers and PhD students who have gone on either to achieve lecturer positions in our host and other HEIs, or to achieve high profile clinical academic fellowships e.g. Stroke Association Clinical Lectureship (Dr. Lesley Scobbie) or clinical academic posts such as Director of Research and Education at Strathcarron Hospice (Dr. Sally Boa), or other high profile professional roles (Dr. Mary Ross-Davie, Director of the Royal College of Midwives Scotland). Additionally, we have supported academic research sabbaticals and international exchanges and internships.

One of the ways in which NMAHP RU builds capacity and capability is to foster a supportive multidisciplinary environment for skills development in research methods.

A Quantitative Methods Group (QMG) was formed in October 2014 to provide general support in quantitative research methods for all members of the Unit, to offer a central point of contact for specific requests for support, and to promote staff development by improving knowledge and extending experience of quantitative methods. Membership of the group comprises statisticians along with researchers specialising in other disciplines with strong quantitative skills (psychology, sociology). This composition enables a broad range of support to the Unit whilst developing the skills of QMG members through multidisciplinary working.

In addition to the QMG, we also have our Qualitative Trialists Group (QTG), who use their qualitative research skills to support the development of interventions, understanding of trial implementation, and understanding of trial outcomes. Thirdly, we have an Implementation Science Group (ISG) (including external members) who meet to discuss methodological papers on implementation science; share developments in the field, and to foster collaborative research.

The Unit has also taken a strategic approach to capacity building across Scotland and beyond. The appointment in 2011 of two clinical academic fellows for a fixed term of three years 50%FTE was the pre-cursor for more involvement in expanding the clinical academic agenda throughout Scotland.

Since 2014 the NMAHP-RU has been working with the Chief Nursing Office Scotland to develop a programme of support to identify and address some of the perceived and real barriers to the increase of capacity and capability of NMAHP clinical research. This included the creation of a novel 're-engagement' fellowship scheme to bring previous research investment (primarily through successful doctoral studies) which was 'lost' to other NHS or HEI roles back into research capacity.

Three post-doctoral clinical academic nurse researchers were awarded a three year fellowship which required both research time alongside a continuing clinical role. Their applied research had to fall within nursing practice and be of importance to the NHS and people of Scotland. Two further schemes (the Vale of Leven Scholarship Scheme and the Gordon Aikman Scholarship Scheme) have been administered by the Unit on behalf of the Scottish Government in order to support research which is directly related to patients' (and or their families) care.

The Unit also set up a forum with the appropriate inter-institutional membership necessary to develop high level strategic commitment, policy and procedures to underpin future clinical academic careers and address the issues highlighted by a previous summit in Scotland. This body has produced several outputs, including a framework document to support clinical academic careers and a publication on the importance and value of clinical academic careers with examples from across Scotland.

On behalf of the CNO we have established the Scottish NMAHP Research Awards. Designed to showcase the most important and high quality NMAHP research in Scotland the awards will be presented every two years. The inaugural awards were presented in November 2015 with the second award ceremony due to be held in November 2017.

In going forward, the Unit wants to focus its capacity and capability building on supporting and developing Unit staff to become world leading researchers in their field, and thereby deliver on our internationalisation agenda as our next big step change (as ratified by our SAB in 2017). Compared with our position in 2010, the Unit now has a strong professoriate, with all having collaborated at some level internationally.

The next step change is to increase this international activity and to support the Professoriate to be leaders within international collaborations. At the same time, in order to increase capacity within the Unit (and for NMAHP research overall) we also need to develop the next tier of NMAHP researchers to become independent PI's and less dependent on the Professoriate for continuing their careers/employment. Over the next few years all Professorial staff within the Unit will be offered Strategic leadership training and all other core or University supported posts will obtain mentorship support to develop their independent research careers.

1.9

Strategic influence and collaborations

Influencing policy, practice and research at a strategic level is an important goal of the Unit. Collaboration and partnership with external organisations is key to this goal and one of the tasks for the Unit following the 2010 Review was to increase its international profile.

The Unit has extensive collaborations with a range of leading National and International organisations for research, policy, advocacy and practice. The geographical spread of our collaborations with researchers across the world is shown in Figure 6 with Figure 7 showing our European collaborations in more detail. In our previous 2010 review, international collaborations were primarily within Europe or in Canada and Australia.



Figure 6
NMAHP RU collaborations worldwide



Figure 7
NMAHP RU European Collaborations

An alphabetical list in Appendix 5 illustrates the involvement of the Unit in a range of key collaborative resources, organisations or networks and this is supplemented by lists of all collaborative partners and individuals within Scotland, the UK and internationally in Volume 3 (document available within the accompanying USB drive). Additional information on staff contributions to national and international committees is available in Appendix 6.

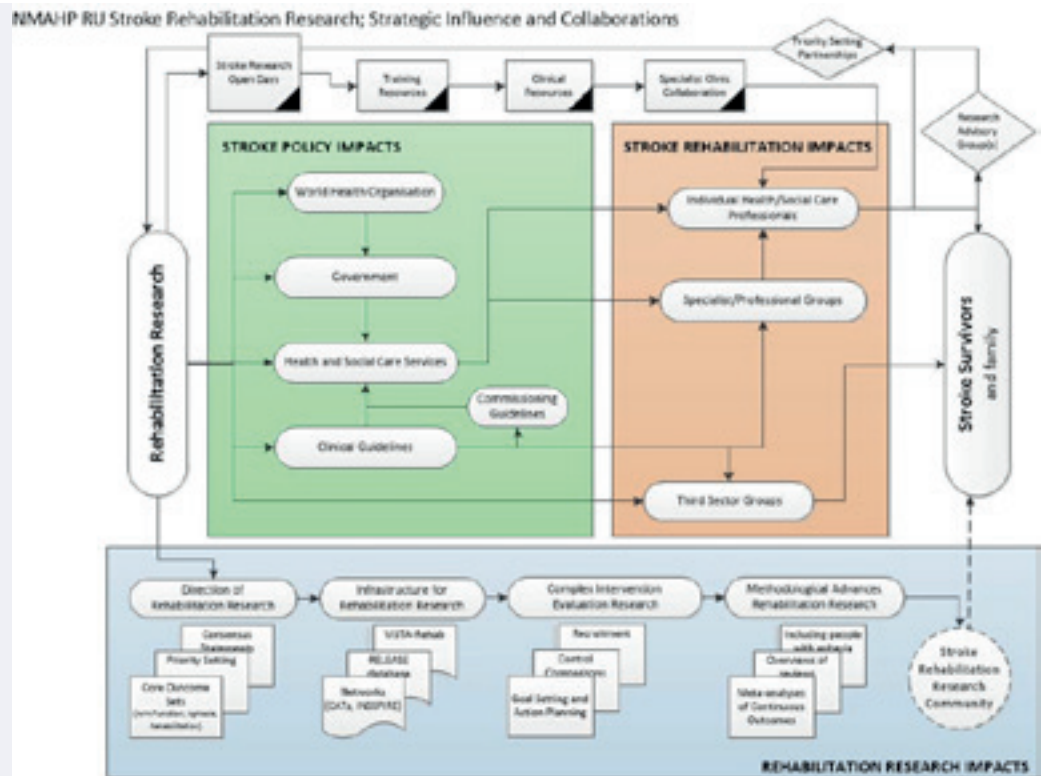
A key area for strategic collaboration to enable direct impact for the NHS and benefit to patient care is the work we undertake on behalf of the Chief Nursing Officer (CNO) in Scotland. The Unit has led the Scottish Maternity Experience surveys in 2013 and 2015, analysed the Scottish Cancer Patient Experience Survey free-text responses in 2016, conducted a realist synthesis and supports three PhD studentships to inform understanding of the Scottish Government programme of integration of health and social care in the early years. We have produce timely, rapid systematic reviews

commissioned by the Chief Nursing Officer to support policy decisions relating to the clinical supervision of midwives, and the roles of school-based and practice nurses. Within the CNO funded Scottish Person Centred Interventions Collaboration (ScoPIC) (ISSR02.1), we evaluated two National schemes using different Ward Team approaches to improving patient experiences of care (Releasing Time to Care (Plus) and the Caring Behaviours Assurance System) which involved the largest survey of ward based care in the UK alongside two parallel stepped wedge trials. These studies demonstrated clear evidence of which approach worked best to improve patient care experiences.

The Stroke rehabilitation workstream is one example of how this body of work has optimised its influence on Stroke policy (e.g. Government, clinical guidelines) which in turn impacts on the delivery of Stroke rehabilitation and care (see Figure 8 below).

The research agenda is influenced by priority setting activities and input from their Stroke Rehabilitation Research Advisory group and project specific groups. Their Life After Stroke Open Days supports direction interaction between Stroke survivors, family members, healthcare professionals and researchers. Relevant research findings are accessible to healthcare professionals through specialist training and other clinical resources. Novel clinical-academic collaborations not only shape the development of the next generation of healthcare professionals but also directly impacts on the availability of care accessible to Stroke survivors. High quality, clinically relevant research informs the development of national and international clinical guidelines which in turn influence clinical commissioning and service delivery in the NHS and third sector groups.

Figure 8
Impact of Stroke research on policy, rehabilitation and research



In line with plans for capacity and capability building within the NMAHP RU as outlined in Section 1.8 above, there will be an emphasis on the Unit achieving a step change in enhancing its international reputation and international collaborations.

The successful mechanisms through which the Stroke work (and other areas of work) within the Unit has established its international reputation (high quality systematic reviews, establishment and maintenance of an international trials database in the field; establishment of, and leading an international research collaboration) will act as a template for other workstreams to follow. Such strong international collaborations then have greater potential to impact on policy (national and international) and practice.

Much has still to be achieved in Stroke rehabilitation and other Unit workstreams. Considerable gains can be made through greater co-ordination of activities amongst the research community.

Facilitating the development of core outcome sets, consensus statements and priority setting activities will support synergistic working within research communities and optimise research efforts. Development of research resources, such as individual patient databases, to be shared with the wider research community/research networks will support further international collaborative research activities.

On a national level, we will continue to work in partnership with the CNO, HIS and NES in Scotland to conduct and disseminate research which is of immediate policy importance and relevant for practice.

1.10 Patient and Public Involvement in NMAHP RU

NMAHP RU aims to ensure that our strategy, workstreams and projects are enhanced by meaningful involvement of relevant people in all aspects of our research.

In line with our policy on public involvement in research, we adopt an inclusive and collaborative approach to research, ensuring that people affected by healthcare conditions addressed within our workstreams have opportunities for involvement. This patient and public involvement (PPI) enables our research to be informed by the real issues and experiences faced by the people of Scotland.

We have recently appointed two PPI representatives to our Strategic Advisory Group. From 2012-2016, 75% of our funded projects have had active involvement of relevant people (the 25% without public involvement are primarily very short-scale, or small, projects; funding for conference attendance or travel; or service evaluation projects). We also have PPI involvement at the level of workstreams (e.g. our Stroke Research Advisory Group has >40 PPI members; and the Maternal Mental Health Scotland Change Agents currently provide advice and practical support to the Maternal and Child Health workstream).

PPI covers the whole range of activities as expected by NIHR INVOLVE (developing funding applications and project materials, sitting on project advisory or management groups, writing study outputs/dissemination/presentation activities) and the Unit provides training to enable our PPI partners to undertake research activities.

We recognise that there is a moral and ethical imperative to ensure that our research addresses questions which are of the highest importance to the people of Scotland. Within all of our workstreams we therefore ensure that the relevant stakeholders contribute to research priorities and we are often recognised as leaders in this area, for example;

- we conducted a PPI and focus group study among new mothers in Scotland to establish research priorities in maternity care.
- we were part of the James Lind Alliance (JLA) priority setting partnership (PSP) relating to urinary incontinence and the identification of 10 prioritised and ranked uncertainties.
- we led a JLAPSP relating to life after Stroke in Scotland (Pollock 2013, Pollock 2012). The top priorities identified through this PSP are now reflected in the World Stroke Organisation research recommendations.
- we are leading a JLA PSP relating to pessaries for prolapse (PVH01.5).

We are lead researchers in methods of involving people in systematic reviews (Pollock 2015b), and we have run workshops and online seminars about how to involve people in systematic reviews.

Our ACTIVE project (involving a systematic synthesis of evidence relating to how stakeholders have been involved in systematic reviews; and interviews with stakeholders and researchers about methods of involving stakeholders in reviews (M01.8) has resulted in an online learning resource aimed at supporting systematic reviewers to involve stakeholders in their reviews, which should impact internationally on future reviews.

We strive to ensure that patients and the public from across Scotland have opportunities to contribute to our research. We have been recognised for developing and implementing innovative ways of enabling equitable involvement of Stroke survivors from across Scotland (Pollock 2014b). We have led and contributed to educational and training events for patients and the public. Examples include: CSO training sessions for PPI groups, a two day summer school for members of Independent Cancer Patients' Voice (a charity set up to enhance patient and public involvement in cancer research), and training to enable Maternal Mental Health (Scotland) change agents to undertake their own research (including ethics applications, data collection and analysis).

Where appropriate we use novel and innovative strategies to identify and recruit a wide range of patient representatives. For example, for our project to develop interventions to increase physical activity among inactive young people with long term conditions, we used purposeful online recruitment via asthma-related Facebook pages, forum groups and other social networking sites. Two mother and baby groups in disadvantaged areas were co-applicants on the BIBS study (HBC02.1) investigating incentives for smoking cessation in pregnancy and breastfeeding to ensure harder to reach women had a voice.

We have played a key role in highlighting that there are barriers to some subgroups of patients participating in health research, and that this has the potential to lead to inequalities in care. Our specific expertise relating to PPI in Stroke research has led to our contribution to NIHR resources for supporting Stroke researchers to enable participation of people with aphasia (see <https://www.nihr.ac.uk/nihr-in-your-area/Stroke/aphasia.htm>), and to us playing a key role supporting patients and public involvement in a number of collaborator-led projects (e.g. Stroke02.6, Stroke01.13).

We have used PPI extensively in co-designing interventions (e.g. MCH02.1, HBC01.14, LTCM02.1, LTCM03.4, PVH03.2, HBC01.1) and especially behaviour change interventions which we believe enables better up-take and adherence. As well as involving people within our research projects we always aim to ensure that the results of our research are accessible to patients and the public. For example, we have hosted 'Life after Stroke' Open Days at Glasgow Caledonian University; our most recent event, in May 2017 was attended by around 90 people, one-third who were Stroke survivors.

We will continue with our inclusive and collaborative approach, incorporating PPI into our workstreams to ensure that our research is relevant and meaningful to the people of Scotland. We plan to further enhance our PPI by gaining involvement at a strategic level, providing us with focussed input and advice relating to the body of research produced by the unit, and strengthening the relevance and knowledge transfer of our research to healthcare in Scotland. We have been exemplary in some of our approaches to PPI and over the next 5 years we will seek to expand these approaches to benefit all workstreams.

Part of the CSO's overall review process requires Units to produce a strategic statement on the case for CSO investment in the Unit, alongside the current and future strategic objectives of the Unit, which is then circulated by the CSO to key stakeholders for comment.

The Unit's Strategic Statement was circulated in May 2017 and stakeholders' comments were received in August 2017 for a response from the Unit to be included in this document. Both the Strategic Statement and the collated response from stakeholders to this are presented in full in Appendix 7.

Overwhelmingly, the comments acknowledged the strategic value of the Unit to the Scottish Government and to the NHS in Scotland, the UK and beyond. The Unit is seen as contributing significantly to developing the evidence base for NMAHP-delivered interventions, which in turn can impact on the people of Scotland who depend on high quality care from NMAHP practitioners. The need for a Centre of Excellence for NMAHP research was emphasised and the majority of respondents agreed that the Unit had a reputation as such a centre of excellence with an established body of experts with the methodological skills to undertake high quality research, particularly in complex intervention studies. The programmes of work undertaken within the Unit were seen as highly relevant and in key priority areas, with reference to some of our international work as being outstanding, respected and of significant value to other researchers nationally and internationally. Our contribution in providing independent review of the evidence to support the development of evidence-based educational resources for policy makers (CNO) and NMAHPs was also noted. Additionally, many respondents commented on the role the Unit has played in building research capability and capacity among NMAHPs.

In our proposals for moving forwards, continuing to build the evidence-base for NMAHP-delivered interventions was seen as essential and our attention to new approaches to care (such as e-health solutions, and new roles/skill mixes to efficiently deliver care) was seen as a positive and necessary focus. Attention to improvement science and implementation of the evidence-base was also noted as essential work. Our proposed cross-cutting programme on 'Improving Efficiency in Healthcare Research' could benefit from discussions with policy makers to understand their research needs in relation to producing timely and useful results. It was acknowledged by the stakeholders that the difficulty in such engagement often lies in accessing policy makers. This report highlights many examples of where the Unit has worked closely with the Scottish Government and NHS Scotland (Regional Health Boards and NHS Special Boards) and responded to their evidence needs. There is no doubt that this work has great potential for impact and the Unit is seeking to develop methods which can produce evidence within more modest timeframes but which is also trustworthy and high quality.

The proposed programme in the strategic statement on 'Seamless Systems and Comprehensive Care' (now named 'Transforming Care Delivery' as described below in Section 1.12), and the attention to systems wide approaches and working at the interface with social care, was also welcomed with requests to place greater emphasis on this, alongside efforts to address inequalities and preventative measures to keep people well for longer or to enhance self-care.

The Unit's continuing work in developing healthy living interventions (within our 'Innovations in NMAHP Healthcare Technologies' programme) will indeed respond to this request.

Collaborations with social care organisations, third sector organisations and social care research organisations were highlighted by stakeholders as a potential direction for the Unit if more care, self-care and prevention of ill health is to occur at home and in community settings. At the same time, stakeholders acknowledged the caveat that the Unit has limited resources and there may be a danger of diluting its expertise, especially when the evidence base for NMAHP delivered interventions is still relatively low. The Unit has many examples of conducting research with third sector partners and evaluating interventions to enhance self-care.

Our 'Transforming Care Delivery' programme will indeed encompass partnership working with social care organisations and social care researchers where social care impacts and interfaces with the changing and developing roles of NMAHPs and the interventions they deliver. The Unit has a world-leading workstream in Stroke rehabilitation and is therefore well able to expand the learning from its research into further rehabilitation and community care initiatives to assist supported self-management.

Although the vast majority of stakeholders' comments on our strategic statement were very positive, a small number of comments were made about the potential for CSO funding to be 'shared' more equally among Scottish HEIs, or for the Unit to contribute to developing NMAHP research across all HEIs (e.g. providing methodological support). The Unit has collaborated with most HEIs in Scotland as evidenced in our list of collaborators (see Volume 3) and in many cases provided research funding to these other HEIs from our grant success, or provided

our expertise and methodological support to their applications. We have contributed to many methodological skills sharing events (e.g. Conference workshops and symposia, SISCC national workshops, the CATS collaboration across Europe) and to widely available documents (e.g. CONSORT Guidelines for Pilot and Feasibility Studies, guidelines for reporting of meta-ethnography), in addition to providing our substantial support to capacity and capability building as outlined in Section 1.8 of this report. The Unit has limited capacity to provide a methods/research design service to all HEIs and indeed in the early days of the Unit, such support was seen as dissipating the resources leading to a consequent lack of prestigious grant capture, publications or international awareness of its work. The lack of sustainability of other research capacity building initiatives in Scotland has been disappointing, but has not been due to lack of support from the NMAHP Research Unit and a commitment to work in tandem with others – we have demonstrated that we work with many national and international partners, and will continue to seek to work with the very best internationally recognised experts in our fields.

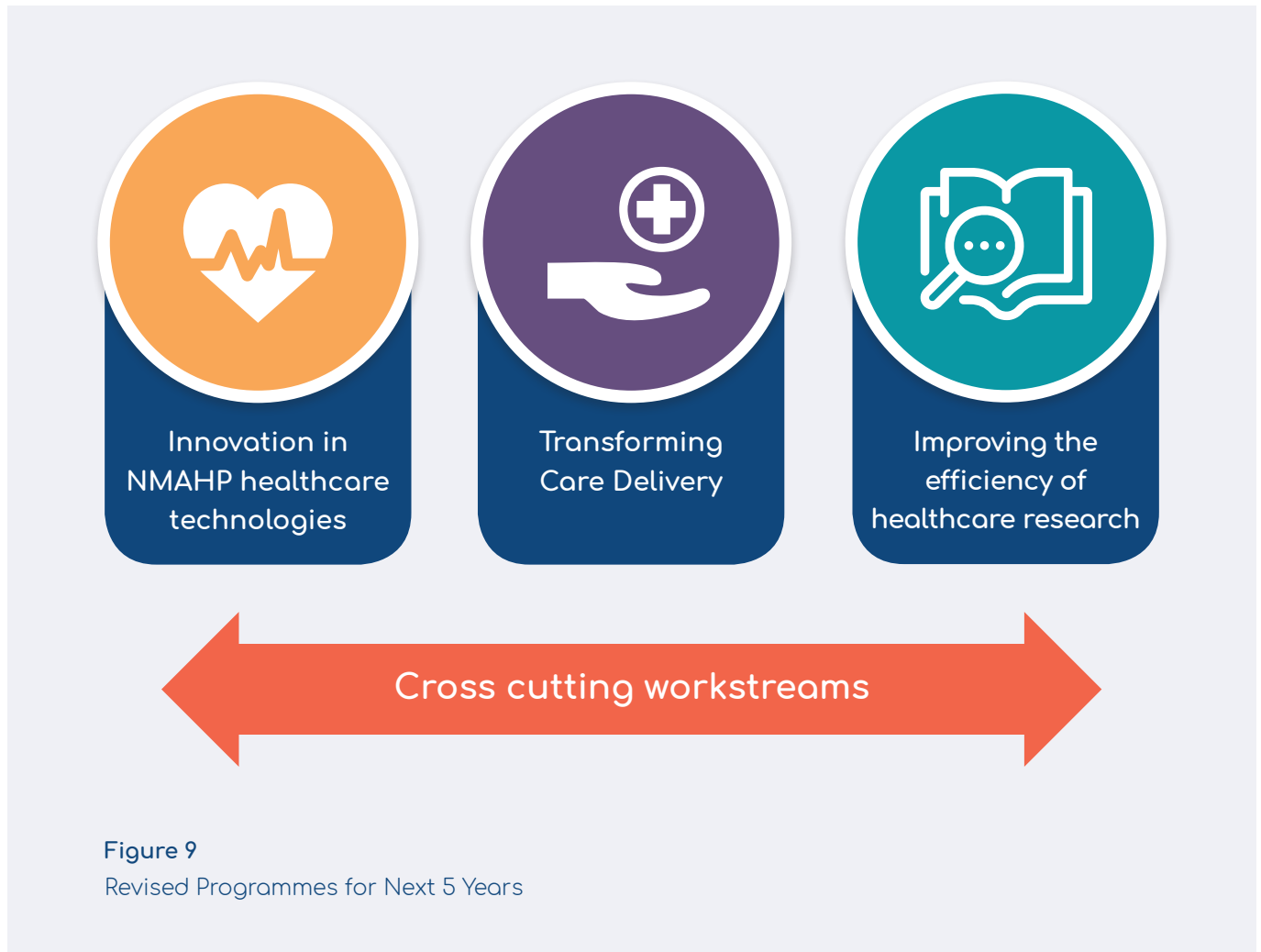
We believe we have demonstrated in this report that investing in a centre of excellence, which attracts a critical mass of top quality NMAHP researchers, is a good investment for the Scottish Government and the advancement of NMAHP research which is of international competitive standing.

Over the next five years, the Unit intends to build on the successes since our last review in our key areas of work (as described in Section 2 below), with specific attention to enhancing its international and world-leading reputation in these fields.

The Unit is now poised to be seen as an international centre of excellence for NMAHP research, and senior staff will be encouraged and supported to develop their international leadership roles. This requires both stability in future directions, to capitalise on our foundational work and provide existing staff with security and confidence in moving forward with their workstreams, whilst also adapting to the (fast) changing social/health and policy environment and horizon scanning for new opportunities. Therefore, some changes will be evolutionary and incremental and other changes may be more fundamental.

We have reviewed our current matrix model for linking clinical and organisational workstreams within our two programmes (Interventions and QDC) and concluded that the matrix approach helps to synthesise shared bodies of work across the Unit. This model prevents staff from working in 'silos' and encourages sharing of methodological advancements within programmes and across workstreams (e.g. the INDEX project on the methodology of intervention development (M01.2)).

It has become apparent that the two current programmes are too broad to describe what the Unit does and excels in, especially to external audiences. We initially proposed a change to four programmes of work in our strategic statement, however, based on feedback from our Scientific Advisory Board in September 2017, we have subsequently refined these to three proposed programmes, namely: 'Innovation in NMAHP healthcare technologies', 'Transforming care delivery' and 'Improving the efficiency of healthcare research'. These 'programmes' are bodies of work that any workstream (or member of staff) can contribute to and each has distinct methodological strengths underpinning them (see Figure 9).



We believe that this matrix model of presenting the Unit's work makes it understandable and relevant to a wider range of audiences. For example, policy makers may not be drawn to specific clinical workstreams but will readily see our programmes such as 'Transforming care delivery' (which all our workstreams can contribute to) as policy relevant.

Similarly, if we only presented our work under programme headings, its relevance to Stroke clinicians, for example, may not be readily identifiable. In this way, our presentation of Unit work will be more visible to clinicians, policy makers, patients and the public, as well as other academic researchers (including those with methodological interests).

1. Innovation in NMAHP healthcare technologies:

The importance of developing the evidence base for NMAHP interventions is still a strong driver for the need to invest in an NMAHP Research Unit and in delivering a programme of research focused on NMAHP led interventions. We aim to focus on developing the evidence base on two fronts: **NMAHP delivered Healthy Living Interventions, and NMAHP Therapeutic Interventions**. This reflects the future priorities for health and social care delivery and population health needs, in particular, the need to provide effective and cost-effective health and social care, prevent illness and promote healthy behaviours relevant to the roles NMAHPs play. The Unit will continue to use its expertise in developing innovative IT (e-health) solutions in both the health promotion and therapeutic fields of NMAHP research.

The Unit will continue to be world leading in developing its expertise in NMAHP (complex) trials methods, expanding its international reputation and collaborations in the fields of Stroke and Pelvic health to other

workstreams across the Unit.

We would like to attract international partners in NMAHP trials to strengthen the Unit (and Scotland) as a centre for excellence and therefore a key global collaborating centre for trials.

The Unit will continue to be creative and innovative in its intervention development, employing state of the art behaviour change theory and techniques alongside technological/digital solutions to facilitate behaviour change in the public/patients and healthcare professionals. In the next five years the Unit will seek to expand its interdisciplinary working with software and artistic (animation and script writing) professionals to develop innovative solutions for public health and therapeutic interventions that are accessible and acceptable to public/patients/carers and professionals. The interventions are designed to maximise reach and engagement in order to address important Government priorities around health inequalities.

2. Transforming Care Delivery

The focus of this programme will be guided by five key changes to healthcare: placing people and their healthcare journeys at the heart of understanding quality and delivery of care; health and social care integration; the need for more care to be delivered at home; the crucial role that primary care will play in future delivery; changing roles of healthcare professionals and use of non-professionals. Going forward it will be important to understand how systems of care adapt, interface and integrate with each other over time; how different systems operate to deliver seamless and comprehensive care for patients; and how NMAHP (and other new non-medical) roles contribute to this new system.

This programme will take forward learning from the previous QDC programme but with a new emphasis on: people and their life and healthcare journeys; NMAHP enhancement of self-care; new ways/models of delivery that transverse health, social and third sectors, roles and skills mixes; and understanding enhanced NMAHP roles (such as Advanced Nurse Practitioners (ANPs)).

However, in order to ensure that individual (staff roles) or system changes are evidence based and working to the benefit of patients, there is also a need to establish appropriate (patient focused) outcome measures to determine whether quality of care has been improved. The Unit will therefore continue to expand its existing expertise in developing appropriate patient and clinical outcome measures.

It is within this proposed programme of work (previously named 'Seamless Services and Comprehensive Care') that most stakeholder comment was made in response to our strategic statement. Overall, the sentiment of

focusing on systems working (interface and integration of health and social care) and the need for improvement/ implementation research was confirmed as a priority. In addition, there was a call from stakeholders for NMAHP research to contribute to the realistic medicine agenda, especially in relation to how this is to be implemented by NMAHPs who have been largely absent from the realistic medicine perspective when much of its goals will only be achieved by prevention, self-management and integrated care by NMAHPs and other sectors.

Therefore, the NMAHP RU is well placed, through linking all its programmes and workstreams, to contribute to realistic medicine and realistic care.

3. Improving the Efficiency of Healthcare Research

There is a need to reduce research waste and enhance efficiency and where possible respond to the needs of policy makers and the NHS with more timely production of research. The Unit has made a leading contribution in enhancing the secondary use of pre-existing research data (e.g. from international trials). It has excelled in the production of systematic reviews of existing research and in developing methodological innovations for producing systematic reviews. We have also engaged in using routine NHS data, linked to trial data, for cost-effective long-term trial follow-up and in using routine NHS linked datasets to understand patient pathways and identify at risk populations. This programme will provide a platform to showcase existing work and to extend the international excellence achieved in the field of Stroke (systematic reviews, trials databases), by applying lessons learned to other priority clinical areas such as Cancer and Mental Health as well as other workstreams such as Health Behaviour Change. It will include developing capacity to apply for more innovative and efficient trial designs, such as Trials within Cohort Studies (TwiCS).

There is now widespread recognition that research needs to be of relevance to patients (and families/carers and the public) and clinicians in order to increase its chances of having any impact. Our exemplary efforts to establish patient/public and professional research priorities will be

expanded within this programme and across all workstreams.

Our objectives to establish more international research collaborations within our workstreams will also contribute to promoting efficiency in research, with more potential to share study methods (that worked or did not work) and findings, and to pool data where possible to avoid having to re-run expensive trials. Successful methods employed within this programme and the workstreams will be shared, developed further and disseminated widely.

The Unit has been developing quantitative data management and data analysis skills within some staff members to capitalise on opportunities within Scotland to utilise routinely available data to answer research questions. However, both within and outwith the NMAHP research community there is a lack of highly skilled data analysts to be able to capitalise on the opportunities Scotland has in utilising its relatively unique routine health data with potential to be linked to a variety of other health (survey) and social datasets. In going forwards, the Unit will seek to expand its existing body of quantitative researchers with the necessary skills to further NMAHP research using large/linked datasets, and seek to partner with other institutions and organisations in enhancing both skills and research opportunities in these areas.

Research Programmes and Workstreams



Having a Scottish centre of excellence from which to draw NMAHP academic expertise for government led and more local NHS work to improve the quality of care is essential. Recent policy drivers including e.g. improving person-centred care, delivering realistic medicine and integrating health and social care can only benefit from the conceptual thinking and evidence development that academic enterprise produces.



Following the 2010 review the NMAHP RU was advised to focus its activity on two programmes of research to impact on NMAHP practice and benefit patient and population health. These were: Interventions and Quality and Delivery of Care and their focus and progress are described below.

In consolidating the pre 2010 Unit programmes (Decision making, Stroke, Urogenital disorders, and from 2009-2010, Primary Care Mental Health) into these two programmes, we did not want to lose the momentum, critical mass, and established reputations that these original programmes and their leads had amassed.

Since 2010, the Unit had to find a way of being strategic about how it used its resources and prioritised its work within two such broad programmes (see Appendix 8 Unit response to Review Recommendations Nos 5-8). Therefore, we developed a matrix model to allow for clinical research priorities (alongside tackling organisational and methodological problems) to continue within 'workstreams' which would all contribute to both main programmes (see Figure 10).

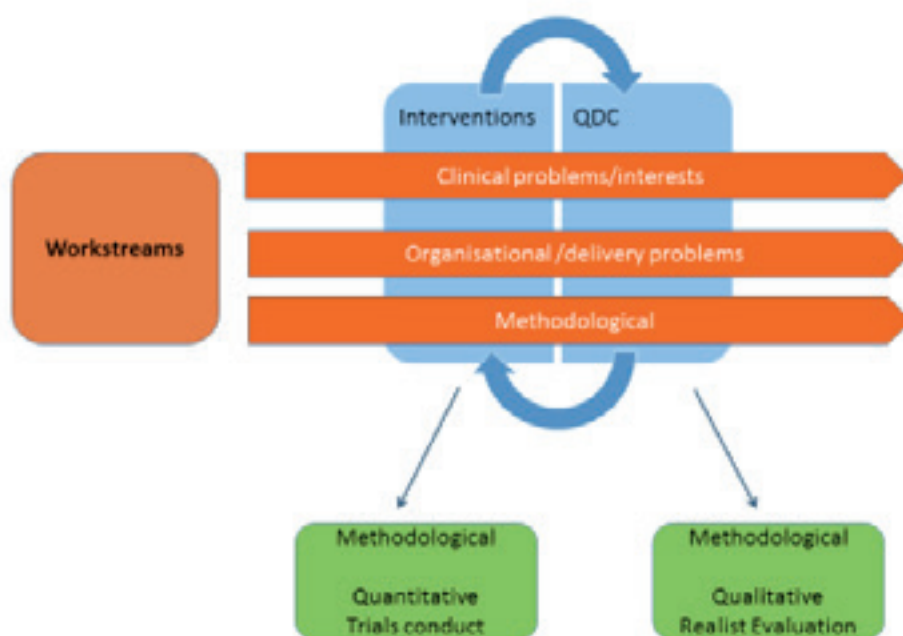
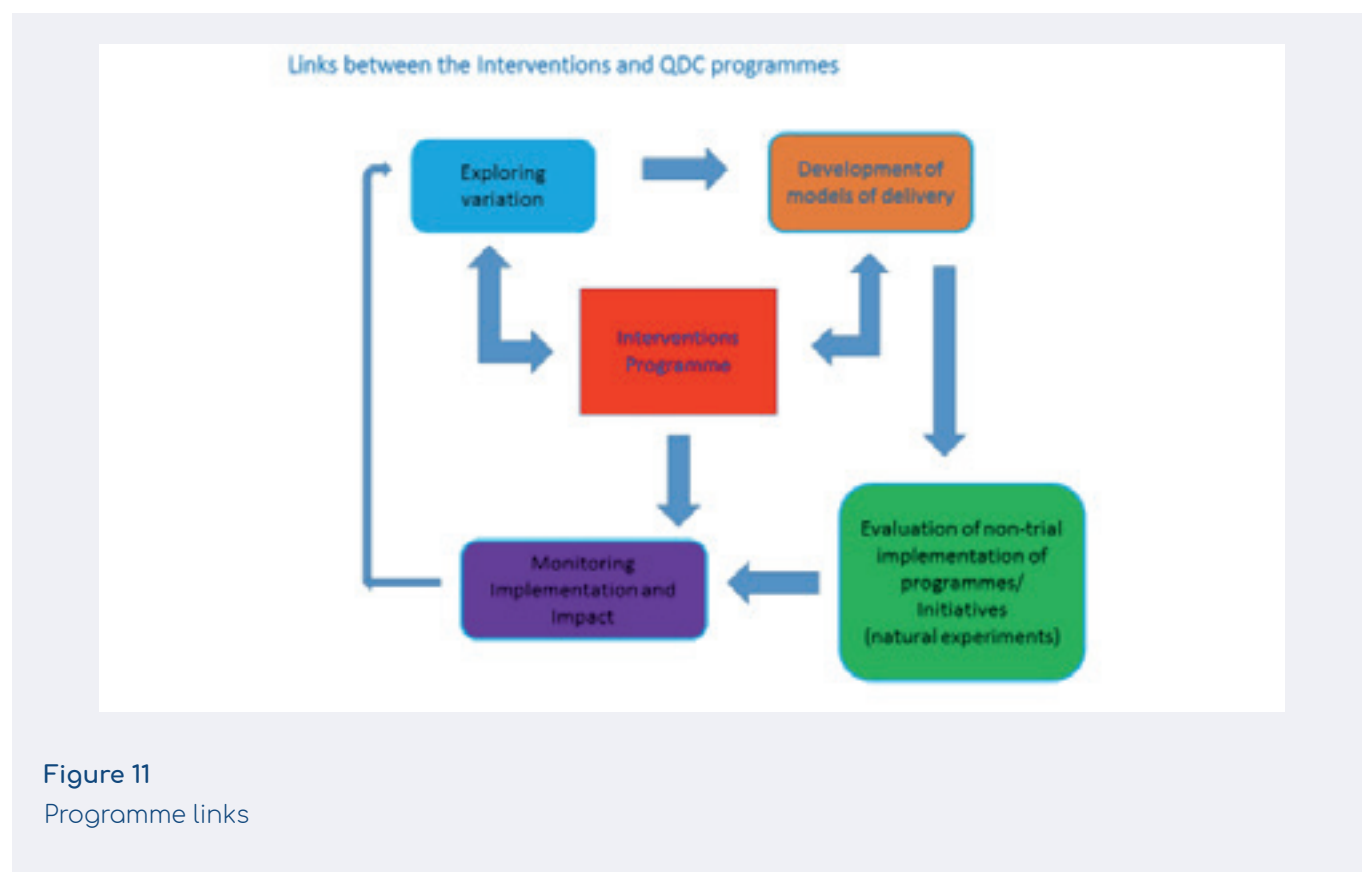


Figure 10

Relationship between NMAHP RU programmes and workstreams: a matrix model

Our two programmes were seen as feeding into the work of each other, depending on the nature or stage of the problem being addressed. The development of the evidence base within the interventions programme would then move into the 'implementation' stage, bringing in the required knowledge from implementation science and the potential for new models of care to be delivered.

The problems (for which interventions may be required to be developed and tested) would be identified from studies of variation in quality, delivery or outcomes for patients. Figure 11 below shows how the Interventions and Quality and Delivery of Care programmes linked to each other in terms of the types of studies they specialised in.



Significant problems most often require a series of projects to understand the problem, scope existing evidence, identify potential solutions or develop and trial solutions, which are then taken forwards to implementation, including understanding implementation problems. It was within our workstreams that the Unit had a good understanding of the key problems and/or priorities in the field. It was within workstreams that we would commit to undertaking research to address problems or priorities through to impact.

The problem-centred workstream approach helped the Unit to prioritise its resources by answering a series of questions before committing to a body of work (see Figure 12).

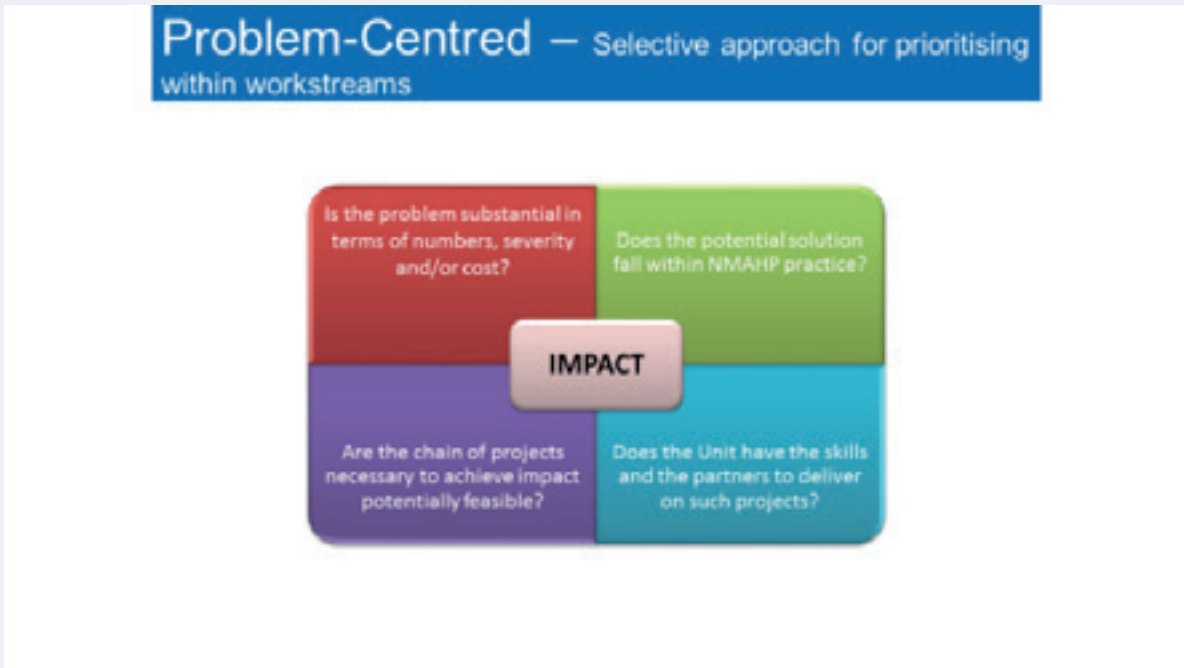


Figure 12
Problem centred approach for prioritising within workstreams

The problem based approach helped to articulate the current status of the problem and how the Unit would contribute to this, including articulating the level of impact at which we aimed to make a difference. This is articulated in Figure 13.

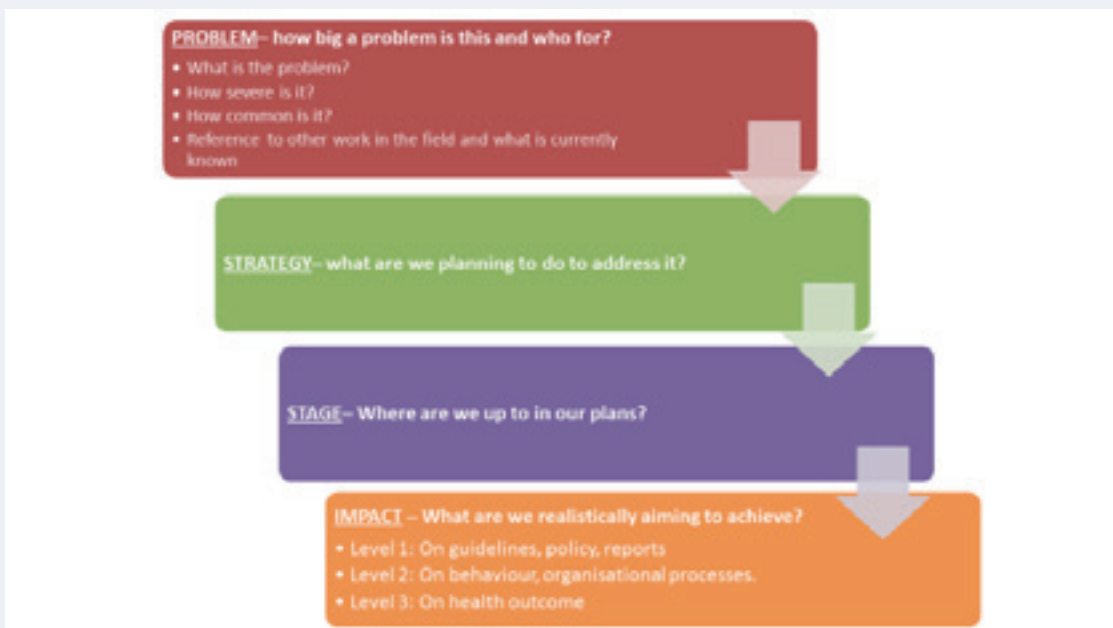


Figure 13
Outline of problem, strategy, stage and impact.

The NMAHP RU excels in developing the methodological expertise necessary for the conduct of NMAHP research, recognising the challenges of the environment and often unique caring and therapeutic interventions delivered by nurses, midwives and AHPs.

We have already described our substantial input to Cochrane and other systematic reviews and the development of review methodologies. We have particular expertise in designing and conducting pragmatic NMAHP Intervention trials (see <http://www.precis-2.org/> and <http://www.nmahp-ru.ac.uk/news/2016/october/indexing-complex-intervention-development/>). Several of our staff have published key papers on methodological uncertainties in complex interventions and trial design (e.g. Wells 2012, Bugge 2013, Loudon 2015, Levati 2016). Other staff have been involved in CONSORT Guidelines for pilot and Feasibility studies (Eldridge 2016) and Guidance for qualitative research applied to trials (O’Cathain 2015). In parallel, methodological research is being undertaken to inform our approach, including the MRC funded INDEX study (M01.2) which is producing guidance on intervention development, and other innovations in the design and conduct of Pilot and Feasibility Studies and Trials (e.g. taking forward PRECIS-2 (HBC01.14)). The Clinical Trials Units we work with (Dundee, Aberdeen, Edinburgh, Birmingham, Belfast, York, Bristol) and the health economists (Aberdeen, Glasgow Caledonian, Glasgow, Birmingham) are important collaborators.

Methodological approaches to intervention development is a strength in the Unit: with many studies funded since the last Review having included an intervention development phase (e.g. LTCM03.4, HBC02.1, LTCM02.1) and the use of technologies (e-health) for intervention delivery (e.g. LTCM01.5, HBC01.1, HBC01.13, HBC01.3, HBC01.8).

We coordinate VISTA-Rehab (Stroke02.7), an international resource for Stroke rehabilitation trials that can be used for novel exploratory analysis of anonymised data.

Additionally, the unit has specific expertise in using realist evaluation methods and realist evidence synthesis to develop and evaluate complex healthcare interventions, working with experts in the field such as Bangor University. Previous realist evaluation studies include a European evaluation of suicide prevention strategies (OSPI); an evaluation of the Scottish normal birth pathways (Keeping Child Birth Natural (KCND)); and two step-wedged realist trials of complex nursing improvement programmes (ScoPIC (ISSR02.1)). Having led many evaluations of national and international implementation programmes, we are key partners in the [Scottish Improvement Science Coordinating Centre](#) (M01.3) and lead the ‘context’ workstream within this initiative.

2.2

Interventions

This programme encompasses the Unit's body of work evaluating care and therapy interventions delivered by NMAHPs.

It draws on the methodological skills, expertise, and experience of the Unit's researchers, for example, in delivering systematic reviews to inform NMAHP practice, and in conducting multicentre NMAHP trials and studies informed by the MRC complex interventions framework. This programme builds on the Unit's strengths and extensive experience in evaluating NMAHP care and therapy interventions in the areas of Stroke rehabilitation, pelvic health, maternal and child health.

The main remit of the Interventions Programme is to evaluate NMAHP interventions, provide evidence of effectiveness, inform NMAHP practice and thereby improve patient outcomes.

Strategic aims:

- To undertake research (primary, secondary and implementation research) which addresses the effectiveness of NMAHP interventions in the Unit's workstream areas, with the ultimate aim of impacting on the health of the Scottish population and beyond
- To undertake methodological research which improves our ability to successfully and efficiently evaluate NMAHP interventions and to maximise likely impact
- To engage in cross-programme working with the Quality & Delivery of Care programme to enhance our research in the phases of: 1) intervention development and 2) translation of evidence relating to effective interventions

Achieving impact:

The Interventions programme capitalises on commissioned calls, priority setting information and other opportunities in pursuing impact on practice with research undertaken. The following criteria are used to ensure maximum impact:

- a. selecting high impact areas,
- b. within NMAHP domains,
- c. with potential for future implementation,
- d. with high patient priority
- e. relevant to policy
- f. value for money
- g. NMAHP RU has relevant expertise

The key driver for this programme is to address the above imperatives, thereby focusing on interventions which affect many people, and/or interventions which have the potential to demonstrate substantial impact on patients' health and wellbeing. The programme also includes attention to interventions which enhance the skills of NMAHP professionals (e.g. PCAM), as well as technological interventions to improve patient outcomes.

Findings from any of the Unit's workstream could potentially lead to the development and testing of interventions within this programme, such as findings from systematic reviews and work which identifies patient priorities for research.

The methodological work of the Interventions programme underpins evidence stages by improving the processes in evidence generation (e.g. recruitment, retention, outcome selection and measurement). Progressive methodological approaches are used in the development and modelling of complex interventions within NMAHP clinical settings and of maximising adherence to interventions so as to optimise impact. Method development work within the programme relates to intervention and trial design focused on future implementation, the development of person-centred outcome tools to allow NMAHP-focused outcomes to be measured, enhancing use of statistical methods within a variety of study designs, and the development and maintenance of research databases.

The Unit has developed a critical mass of NMAHP Trialists to support methodological developments in randomised controlled trials, including economic evaluation, of complex interventions relevant to the nursing, midwifery or allied health professions. Our trials are supported by the:

- Trial Management Group: which consists of highly experienced trial managers and researchers
- Quantitative Methods Group: which consists of experienced statisticians and data analysts
- Qualitative Trialists: which consists of researchers who use their qualitative skills to support the development of interventions; understanding of trial implementation; and understanding of trial processes, context and outcomes.

2.2.2 Activity: grant awards and publications

- The Interventions programme has led or collaborated in a total of 97 projects since 2010 to May 2017. This research has a total value of £27,302,516 (with £6,349,423 awarded to the NMAHP RU). The Unit has led on 39 of these awards, with a value of £7,629,738 (with over £5 million of this to the NMAHP RU). We collaborated on 58 projects worth over £19.5 million (with over £1 million awarded to the Unit).
- The Interventions programme has delivered 241 publications since the last review, increasing from 21 in 2010 to 47 in 2016. The quality of outputs has already been described in Section 1.7 above.

2.3

Quality and Delivery of Care

The delivery of care is shifting, from a medically focused acute hospital model, to one which involves multi-disciplinary teams working in partnership with patients, carers and voluntary sector partners at home and in the community. There is also an emphasis on addressing quality and safety issues (among others) through enhancing practitioner judgement and decision making and reducing variation in practice.

This programme aims to contribute research knowledge to enable safe and effective changes to the delivery of care provided by NMAHPs. This programme focuses on identifying problems and variation in quality and delivery of care and understanding why they occur. It concerns understanding the behavioural (patient and practitioner) and organisational influences on care delivery and uptake of best practice. It also researches the implementation and translation of evidence based solutions into practice, along with further examination of models of delivery of care. This includes exploring: who delivers care; where and how it is delivered; who receives care; and what are the outcomes of care delivery.

The processes by which professionals and patients make decisions about care are central elements of this programme, alongside the organisational context in which decisions are made and care is delivered. A key influence on the delivery of care is the recognised importance of the patient experience and patient involvement. The inclusion of patients in developing the research agenda was seen as central to the future direction of the Unit's activity as was the continuing involvement of service users in research.

Strategic aims of the Programme

To enable safe, effective and patient centred changes to the delivery of care provided by NMAHPs by:

- Exploring and developing models of delivery (location, technology, staff skill mix)
- Researching up-take and implementation of effective/evidence based models of delivery (adoption, consistency of implementation, costs)
- Exploring the processes by which patients and clinicians make decisions about care
- Exploring patient experiences of quality and delivery of care, and up-take and adherence/
- concordance among patient groups (reach)
- Exploring variation in outcomes (inequalities, inappropriate/avoidable admissions, mortality and adverse events) and maintenance of intervention outcomes
- Developing theory and methods in implementation health research

In order to achieve these strategic aims we identified two developing fields of research in which the Unit should seek to strengthen its knowledge and expertise. These were: Implementation Science, and research involving Data Linkage and use of Big Data.

Implementation Science

Implementation science (also known as improvement science) is a developing field of study focused on the methods, theories and approaches that facilitate or hinder efforts to improve quality and the scientific study of these approaches. From around 2011 the Unit set out to develop expertise in Implementation Science to provide robust research evidence of which strategies work to facilitate implementation of evidence based healthcare in a safe and effective way, reaching the intended target audience and maintaining the outcomes demonstrated in controlled trials.

Our QDC programme and our expertise in realist evaluation and the study of 'context' in implementing interventions already had much to contribute to this field of study. Our involvement in the SISCC collaboration in Scotland has also enhanced the Unit's contribution to this agenda across Scotland. We were able to attract an Impact Fellow (funded for 2 years by University of Stirling) to the Unit and to secure funding from GCU for a Senior Research Fellow in Implementation Science on the basis of our growing expertise and the need to develop this field within HEI's if we are to improve the potential impact of our research. These posts have been supported by several PhD students within the Unit contributing to our critical mass in IS research and its methods.

Data linkage and use of Big Data

In order to understand and monitor variation in quality and safety in the delivery of care, it is important to be able to access and interrogate existing datasets or to link new/bespoke datasets to existing ones. It is also important to improve efficiency in research (in both its costs and its timeliness). Many of the Research Councils have been investing in 'Big Data' initiatives as they see the value and need for data analytics in all spheres of health. Such analyses can help understand patient demand and flow as well as staff availability, or the impact on these by changes to services across systems. Data can be used to identify or predict 'at risk'

populations and the targeting of scarce resources.

Personal analytics devices may become the norm in the future as more self-care is encouraged and monitored in the community. The potential for new research and thereby for improvements to healthcare monitoring and delivery are extensive but will require new skills within the research community. NMAHP's cannot afford to fall behind other colleagues in using big/linked data in its research.

The NMAHP research Unit has conducted a number of projects using linked datasets to identify 'at risk' groups and also to study (sub-optimal) patient care pathways. The Unit has also led the way in supporting research databases such as Vista-Rehab. We support PhD students who are developing data analyst skills as well as supporting a full-time statistician (funded by GCU) who can support the development of these skills in others. One of these studies was showcased by the FARR institute of Health Informatics research as one of the UK's most significant examples of using data in research. We will continue to build on this expertise in our future programme on 'Improving efficiency in healthcare research'.

2.3.2 Activity: grant awards and publications

- The QDC programme has led or collaborated in a total of 54 projects since 2010 to May 2017. This research has a total value of £11,803,460 (with £5,711,958 awarded to the NMAHP RU). The Unit has led on 35 of these awards, with a value of £5,810,959 (with over £5 million of this to the NMAHP RU). We collaborated on 19 projects worth £6 million (with over just over £0.5 million of this awarded to the Unit).
- The QDC programme has delivered 190 publications since the last review, increasing from 17 in 2010 to 25 in 2016. The quality of outputs has already been described in Section 1.7 above.

The following Sections (2.4.1 to 2.4.6) summarise the Unit’s workstreams, outlining their remit and the main areas of ‘problem’ focus, with examples of the projects undertaken to address the problem areas, including examples of impact, as well as future plans.

The interconnectedness of the programmes, workstreams and cross-cutting problem areas are illustrated in Figure 14.



2.4.1

Stroke rehabilitation (Stroke)

Introduction

Each year more than 10 million people worldwide have their first Stroke². Many survive and in the UK alone there are an estimated 1.2 million Stroke survivors^{3,4,5,6}. Stroke is the most common cause of adult complex disability in the UK⁷. Three quarters of Stroke survivors experience physical deficits. The cost of Stroke in the UK is high, estimated at £9 billion each year; direct Stroke-related care costing £4.6 billion, informal care £2 billion and lost productivity £2 billion^{8,9}. The care and rehabilitation provided by nurses and allied health professionals is essential in maximising Stroke survivors' recovery and return to life after Stroke.

Our research programme specialises in the development, conduct and delivery of the highest quality Stroke rehabilitation research which will in turn improve the effectiveness of Stroke care and rehabilitation for Stroke survivors in Scotland and beyond. We work closely with Stroke survivors, carers, the NHS, and the third sector both nationally and internationally. Academically our projects involve collaborations with expert Stroke rehabilitation researchers across 36 countries. Since 2010 our research team have secured >£8Million in external funding from a range of funders including the European Cooperation in Science and Technology, NIHR (HSDR

and HTA), the Chief Scientist Office, the Scottish Stroke Improvement Fund, the Cochrane Collaboration, Tavistock Trust for Aphasia, Dunhill Medical Trust, the Stroke Association and Chest, Heart and Stroke Scotland.

We strive to ensure the implementation of improvements in the care and rehabilitation of Stroke survivors.

We achieve this through:

- tackling research questions that are relevant and timely (e.g. Stroke04.3)
- conducting the highest quality research (e. g. Stroke02.2; Stroke01.1)
- innovative research approaches and solutions (e.g. Stroke02.6; Stroke04.2)
- communicating our findings directly to Stroke survivors and clinicians (e.g. Stroke03.1; Stroke 03.2; Stroke04.3)
- informing national and international clinical guidelines. The Royal College of Physicians' National Clinical Guidelines on Stroke (2016)¹⁰ cited research that emerged from all of our Stroke problem areas described below (e.g. Stroke01.2; Stroke01.3).

²Feigin VL et al Update on the global burden of ischemic and hemorrhagic Stroke in 1990-2013: the GBD 2013 Study. *Neuroepidemiology*.2015;45:161–176. doi: 10.1159/000441085.

³NHS Digital. (2016). *Quality Outcomes Framework (QOF) 2015-16*. Accessed August 2017.

⁴Welsh Government. (2016) *General Medical Services Quality and Outcomes Framework Statistic for Wales 2015-16*. Accessed Aug 2017.

⁵SD Scotland. (2016). *Quality and Outcomes Framework 2015-16*. Accessed August 2017.

⁶Department of Health. (2016). *Quality and outcomes framework (QOF) achievement data 2015/16*. Accessed August 2017.

⁷Adamson et al. Is Stroke the most common cause of disability? *Journal of Stroke and Cerebrovascular Diseases* 2004; 13:171-177.

⁸Nichols et al. *European cardiovascular disease statistics 2012*. Brussels: European Heart Network; 2012.

⁹Saka et al. Cost of Stroke in the United Kingdom. *Age and Ageing*. 2009;38(1):27-32

¹⁰Royal College of Physicians Intercollegiate Stroke Working Party. *National Clinical Guideline for Stroke*. 2016. Accessed August 2017.

In rigorously addressing clinically relevant questions, we select from a wide variety of research methods including; systematic reviews and overviews, direct and indirect network meta-analyses, national surveys, randomised controlled trials (individual, cluster and stepped-wedge designs, pilot and definitive), feasibility studies, n-of-1, Q-methodology, qualitative and mixed method investigations. In addition, we seek the advancement of Stroke rehabilitation research by (i) developing the rehabilitation research infrastructure, (ii) promoting a greater co-ordination of rehabilitation research efforts, (iii) contributing to rehabilitation research methodological innovations and, (iv) supporting the development of the future generation of Stroke rehabilitation researchers (Fig 8).

(i) Developing Stroke rehabilitation research infrastructure
 Since 2010 we have developed two specialist databases containing anonymised individual patient data from pre-existing aphasia research (RELEASE (Stroke01.4)) and Stroke rehabilitation trials (VISTA Rehab Stroke02.7). These databases include individual patient data from more than 16,000 people after Stroke following the synthesis of almost 200 primary research datasets the product of collaboration with external partners across 24 countries. The VISTA-Rehab archive is already available for additional secondary analyses, providing data for Stroke01.11 and Stroke02.6 for example. One legacy from the RELEASE project will be a similar aphasia specific archive.

Stroke rehabilitation research can be challenging given its multidisciplinary nature and complexity of interventions delivered, the individualistic nature of Stroke impacts and the challenges of capturing outcomes relevant to Stroke survivors and their families. Our role in developing specialist interdisciplinary networks (e.g. Stroke01.2, Stroke01.3 and Stroke01.7) has enhanced the co-ordination, multidisciplinary relevance, capacity, scope and dissemination of research undertaken which efficiently advances this field of science and clinical practice.

Our research programme is increasingly recognised nationally and internationally as a high quality training centre for the next generation of Stroke rehabilitation researchers. Since 2010 we have supported nine competitively funded PhD studentships (of 11 overall), two post-doctoral fellowships and a prestigious five-year clinical lectureship with NHS Forth Valley.

Our students have received notable awards from UK Society for Behavioural Medicine, the Royal College of Nursing [Frost], were shortlisted by the Society for Clinical Trials for the Thomas C. Chalmers Student Award [McGill] and invited speakers at several international conferences [e.g. Hazelton, Scobbie, Chung, Duncan Miller].

(ii) Promoting co-ordination and efficiency of Stroke rehabilitation research efforts

We seek to reduce research waste and increase efficiency in this complex research area. We facilitated two research priorities setting initiatives for Life after Stroke (Stroke04.3) and Stroke nursing (Stroke01.2). We facilitated international consensus on core outcome datasets for arm function (Stroke02.4) and language problems after Stroke (Stroke01.2) and contributed to the international Stroke Rehabilitation Research Roundtable recommendations^{11,12}. We have supported the co-ordination of research activities on vision, oral health, mood and fatigue after Stroke through participation in funded writing groups. We are a leading centre for Cochrane systematic reviews of complex nursing and AHP rehabilitation interventions authoring the top three most cited Cochrane reviews on Stroke in 2016 (Stroke01.1; Stroke02.2; Stroke02.3).

(iii) Rehabilitation research methodological innovations

Many research design and analysis issues are raised in the complex field of Stroke rehabilitation. We address these through our research and reporting; for example, improvements to the accuracy of recruitment estimates in randomised controlled trials of Stroke rehabilitation (Stroke02.8), choosing suitable attention control comparators in randomised controlled trials of aphasia interventions (Stroke01.1), developing of complex interventions and enhanced reporting standards for stepped-wedge cluster randomised controlled trials (Stroke04.2). We have championed the importance of ethically appropriate inclusion of people with aphasia in Stroke rehabilitation research using accessible information sheets and consent forms (e.g. Stroke01.13). Our involvement of Stroke survivors, healthcare professionals and other stakeholders to enhance Cochrane reviews is also significant informing the development of Cochrane review training materials (Stroke02.3).

Our programme of research is organised into subthemes which focus specifically on the communication (Stroke01), arm function (Stroke02), vision (Stroke03) and oral health problems (Stroke04) that arise after Stroke.

Stroke01: Communication

Experienced by a third of people who have a Stroke (approximately 400,000 people living in the UK) aphasia is an acquired loss or impairment of language (affecting reading, writing, speaking and understanding of language)¹³. Other communication impairments are also common after a Stroke¹² such as motor speech disorders which lead to weakness, in-coordination or paralysis of the muscles required to produce speech and are collectively known as dysarthria. Aphasia is related to poorer performance on measures of activities of daily living, mobility, continence and emotional well-being after Stroke than other Stroke survivors without aphasia^{14,15,16}.

Continence problems and pain may be less likely to be identified and fewer people with aphasia return home after Stroke than others with Stroke but no but no language impairment. Aphasia subsequently affects hospital discharge destination¹⁷ and the likelihood of successful return to work. Aphasia is a long term consequence of Stroke with 61% continuing to experience communication problems a year after onset¹⁸. The wide ranging and debilitating impact of communication impairment on people who experience Stroke (and the subsequent impact on their families, communities and society as a whole) highlights the importance of the effective management and rehabilitation of these communication impairments.

Aphasia research is highly complex. The degree to which aphasia impacts on the understanding and expression of spoken and written language varies across individuals. Stroke survivors are also a highly heterogeneous group varying in age, educational background and cognitive abilities, all factors known to impact upon communication abilities after Stroke. Interventions are multifaceted and vary in theoretical approach, timing, dose, duration, intensity, frequency and participants' adherence. Outcome performance on language measures are mediated by cognitive, visual and hearing acuity while bias within trial designs requires careful consideration.

¹¹Kwakkel et al. Standardized measurement of sensorimotor recovery in Stroke trials: consensus-based core recommendations from the Stroke Recovery and Rehabilitation Roundtable. *International Journal of Stroke* 2017; 12(5) 451-461.

¹²Walker et al. Improving the development, monitoring and reporting of Stroke rehabilitation research: consensus-based core recommendations from the Stroke Recovery and Rehabilitation Roundtable (SRRR). *International Journal of Stroke* 2017; 12(5) 472-479.

¹³Ali et al on behalf of the VISTA Collaboration. Aphasia and dysarthria in acute Stroke: Recovery and Functional Outcome. *Int Jn Stroke*. 2013;10:400-406.

¹⁴Paolucci et al. Rehabilitation of left brain-damaged ischemic Stroke patients: the role of comprehension language deficits. A matched comparison. *Cerebrovasc Dis* 2005;20:400-406.

¹⁵Gialanella et al. Rehabilitation length of stay in patients suffering from aphasia after Stroke. *Top Stroke Rehab*. 2009;16:437-444.

Research conducted during the review period

The importance of Stroke-related communication impairment as perceived by Stroke survivors, carers and healthcare professionals was highlighted with communication appearing twice in the James Lind Alliance Top 10 research priorities (Stroke04.3)¹⁹. We reviewed, collated and synthesised the randomised controlled trial evidence of the effectiveness of speech and language therapy approaches to aphasia rehabilitation compared to no access to therapy (Stroke01.1).

We support greater co-ordination of the research effort through our collaborations which span 36 countries. With funding from the European Co-operation in Science and Technology we established the Collaboration of Aphasia Trialists (2013-17; Stroke01.2) extended by the Tavistock Trust for Aphasia (2017-2020; Stroke01.3). This network supports 179 multidisciplinary members from neurology, psychology, linguistics, anthropology, statistics, engineering and speech and language therapy. As a consequence of this work we have championed the need for consistency in our aphasia terminology²⁰ and supported the development of an international consensus on a core set of aphasia outcomes. Using secondary data analysis we examined the representation of people with aphasia in acute Stroke trials (Stroke02.7). We created an archive of aphasia primary research datasets from more than 5500 people with aphasia (Stroke01.4). Using this data we are examining the impact of therapy timing, dose, intensity as well as the predictors of recovery from aphasia after Stroke.

Clinical innovations supported by our work includes the multi-lingual adaptation of the Comprehensive Aphasia Test²¹ in 14 additional languages (Stroke01.2) which supports therapists working in these languages and facilitates multi-centred, multi-lingual collaborative research activities. We are also examining the effectiveness of tele-rehabilitation (Stroke01.6), computer-based naming therapy (Stroke01.5), peer support (Stroke01.9), art therapy (Stroke01.15), and asset-based approaches (Stroke01.2; Stroke01.3) for people with aphasia. We looked at the evidence of hearing impairment amongst people with aphasia (Stroke01.12) and long-term consequences of Stroke (Stroke01.10). A GCU funded PhD studentship will develop an accessible version of the G-AP tool (Stroke02.9) for people with aphasia (starts October 2017).

Effective communication of information for people with aphasia alongside other Stroke survivors has an important role in recovery. Our work looks at enhancing information provision in relation to secondary Stroke prevention (Stroke01.7, Stroke01.18), reduction of fatigue (Stroke01.16, Stroke01.17), and promotion of physical activity after Stroke (Stroke 01.18; Stroke01.19). We have highlighted the ethical and clinical importance providing people with aphasia an equal opportunity for research participation²² and actively promote this approach. Our work informed the development of NIHR resources to support Stroke researchers to provide this access. Locally, we supported the development of accessible materials in trials of drug therapy (Stroke01.13) and interventions for fatigue (POSITIV trial in start up).

¹⁶Thomas et al. Communication and Low Mood (CALM): a randomized controlled trial of behavioural therapy for Stroke patients with aphasia. *Clinical Rehabilitation* 27, 398-408. 2013.

¹⁷Gialanella et al Rehabilitation Length of Stay in Patients Suffering from Aphasia After Stroke. *Top Stroke Rehab* 16, 437-444. 2009.

¹⁸Pedersen et al. Aphasia after Stroke: type, severity and prognosis. *The Copenhagen Aphasia Study. Cerebrovasc Dis* 17, 35-43. 2004.

¹⁹Pollock et al. Top ten research priorities relating to life after Stroke. *Lancet Neurology* 2012; 11:209

²⁰Worrall et al. Let's call it "aphasia": Rationales for eliminating the term "dysphasia". *International Journal of Stroke* 2016; 11(8) 848-851. DOI: 10.1177/1747493016654487

²¹Swinburn K, Porter G, Howard D. 2004, *Comprehensive Aphasia Test*. Psychology Press, Oxford.

Impact

Our Cochrane review of SLT for aphasia after Stroke is amongst the top 3 most cited Cochrane reviews on Stroke (2016). We worked in tandem with the Royal College of Physicians' Intercollegiate Stroke Working Party to inform the development of the UK clinical Stroke guidelines relating to aphasia rehabilitation (2016) as well as similar guidelines in Norway and the Netherlands. Earlier review versions (2010; 2012) informed Stroke clinical guidelines in Australia, Canada, and New Zealand.¹⁻² Our international network of aphasia researchers has supported capacity building for aphasia researchers with members securing an additional €1.5Million for collaborative aphasia research activities (Stroke01.2; Stroke01.3). This collective provides a valued international perspective on the needs of people with aphasia, the availability and structure of services and infrastructural challenges.

Thanks to the 179 multidisciplinary, multinational and multilingual aphasia trialists the CATs network has achieved significant advances in the development and coordination of aphasia science, especially from the professional's point of view. Dr Cristian Leorin, Cooperative Easy, Italy, Action Rapporte

The impact of our workstream on SLT services locally, nationally and internationally was recognised with the presentation of the Robin Tavistock Award to Prof Brady in acknowledgement for the work undertaken alongside many NMAHP RU colleagues in this workstream including Ali, Campbell, Davis, Dickson, Elders, Lindsay, Maxwell, Morris, Pollock, VandenBerg, Williams B and Williams L.

Research going forwards

Findings from the analyses in our ambitious RELEASE project (Stroke01.4) will provide new insights into predictors of recovery, prognosis and optimisation of the effectiveness of interventions for aphasia. Many specific research questions will be generated and will require further, focused definitive evaluation. Additional research questions not taken forward in the RELEASE study can also be efficiently examined within the legacy database. Funding from the Tavistock Trust for Aphasia (2017-2020) supports a broader membership of the Collaboration of Aphasia Trialists, more inclusive of aphasia researchers in the USA, Canada and beyond. We will continue our international collaboration to complete our ongoing activities and further stimulate aphasia research, support high quality multinational aphasia research initiatives and collaborative efforts in the development of multilingual tools.

²²Brady MC et al. People with aphasia: capacity to consent, research participation and intervention inequalities. *International Journal of Stroke*. 2013;8(3):193–6. doi: 10.1111/j.1747-4949.2012.00900.

Stroke02: Arm function after Stroke

Up to 80% of Stroke survivors experience difficulties with arm function after Stroke²³. Such problems affect many daily activities (such as feeding, dressing and grooming) and participation,²⁴ contributing in turn to carer burden. Half continue to experience problems years after their Stroke^{25,26} with poor arm function associated reduced health-related quality of life²⁷ and well-being²⁸.

Optimising the effectiveness of interventions for arm function after Stroke has been identified as a shared research priority by Stroke survivors, families and healthcare professionals^{17,29}. Despite a growing number of randomised controlled trials on this topic, methodological limitations prevent the formation of clear clinical recommendations. While the current evidence base is rapidly surpassed by rapidly emerging rehabilitation technologies and novel applications of existing technology.

Research conducted during the review period

Two of the top 3 most cited Cochrane reviews on Stroke explored the effectiveness of different treatments for recovery of arm function after Stroke (Stroke02.2; Stroke02.3). Moderate quality evidence suggested that intensive, repetitive and functional movements may be most effective in the rehabilitation of arm function. Meta-analyses of naturally skewed continuous outcomes common in Stroke rehabilitation reviews however can be challenging. In a Stroke Association and Rosetrees Trust funded project (Stroke02.6) we examined how common a problem this was for Stroke rehabilitation reviewers and explored a range of approaches to address the issue.

We have evaluated the feasibility and effectiveness of clinical innovations for arm rehabilitation, such as the use of commercial gaming devices (e.g. Nintendo Wii in Stroke02.12), dynamic lycra orthoses (Stroke02.13), executive function based interventions (Stroke02.11) and optimised intervention timing and dose (Stroke02.14).

While Stroke survivor centred goal setting is fundamental to effective rehabilitation, clinical implementation remains vague and unsupported (Stroke02.9). We also aim to facilitate that implementation (Stroke02.10).

Our methodology work includes leading an international consensus for the development of a standardised core outcome set for arm function rehabilitation research (Stroke02.4) while an award winning project examined adherence measurement for Stroke rehabilitation studies (Stroke02.5). We are also providing vital insight to improving the accuracy of recruitment estimates, strategies and reporting for Stroke rehabilitation trials (Stroke02.8) while the accuracy of effect size estimates using the Barthel Index and the modified Rankin Scale will also be explored using anonymised trial data from VISTA-Rehab (Stroke02.7).

²³Nakayama et al. Recovery of upper limb function in Stroke patients: the Copenhagen Stroke study. *Arch Phys Med Rehabil* 1994; 75:394-398.

²⁴Sveen et al. Association between impairments, self-care ability and social activities 1 year after Stroke. *Disability and Rehabilitation* 1999;21(8):372-7.

²⁵Broeks et al. The long term outcome of arm function after Stroke: results of a follow-up study. *Disability and Rehabilitation* 1999;21:357-64.

²⁶Kwakkel et al. Probability of regaining dexterity in the flaccid upper limb: impact of severity of paresis and time since onset in acute Stroke. *Stroke* 2003;34(9):2181-6.

²⁷Franceschini et al. Is health-related quality of life of stroke patients influenced by neurological impairments at one year after Stroke?. *European Journal of Physical and Rehabilitation Medicine* 2010;44(6):389-99.

²⁸Morris et al. Predicting health related quality of life 6 months after Stroke: the role of anxiety and upper limb dysfunction. *Disability and Rehabilitation* 2013;35(4):291-9.

²⁹[Chartered Society of Physiotherapy. Research Priority Project \(Neurology\)](#) 2010. Accessed Aug 2017.

Impact

Our Cochrane overview findings have been widely disseminated at national and international conferences and local training days. Methodological innovations for overviews (Stroke02.2) have contributed to the development of other projects (PVH02.7) while Pollock is co-founder and lead of the GRADE Overview project group part of the [GRADE Working Group](#). Our work on the meta-analysis of naturally skewed continuous outcomes will inform future Cochrane Handbook updates. The newly developed core outcome set is an important advance for

future rehabilitation research and will enhance future research activities. Our recruitment research will improve the accuracy of future rehabilitation research trials estimates. While the results from current randomised trials of lycra interventions and regimen optimisation are awaited and will inform future developments. Work undertaken in this subtheme was supported by many NMAHP RU colleagues including Ali, Bain, Brady, Campbell, Chung, Duncan E, Duncan Miller, Farmer, Frost, Levati, McClurg, McGill, Morris, Pollock, Scobbie, Thomson and Williams B.

Stroke03: Vision after Stroke

Around one fifth of Stroke survivors experience lasting effects on their vision³⁰. Worldwide 6.9 million people have Stroke-related visual impairment while approximately 250,000 live in the UK^{20,31}. Visual problems experienced by Stroke survivors can impact on activities of daily living, mobility, reading, driving, quality of life, depression and anxiety, ability to participate in rehabilitation and length of hospital stay^{22,32,33,34}. Stroke-related brain damage can result in a wide range of possible visual effects - the most common being a loss of vision on one side of space.

Other common problems include alterations to normal eye movements and the ability to pay attention to, or understand, visual information. Assessment and management of visual impairment after Stroke has received limited attention in Stroke care and rehabilitation and the services Stroke survivors receive varies considerably³⁵. Consequently Stroke survivors with visual impairments experience high levels of unmet need²⁵. Identifying effective management options is a top 10 research priority for Stroke survivors, carers and clinicians¹⁷.

³⁰Ali et al on behalf of VISTA. Recovery From PostStroke Visual Impairment: Evidence From a Clinical Trials Resource. *Neurorehabil Neural Repair*. 2013;27(2):133–41.

³¹Feigin et al. Global and regional burden of Stroke during 1990–2010: findings from the Global Burden of Disease Study 2010. *Lancet*. 2014;383(9913):245–54.

³²Sand et al. Visual impairment in Stroke - a review. *Acta Neurol Scand*. 2013;127(Suppl 196):52–6.

³³Leff et al. Structural anatomy of pure and heminaopic alexia. *J Neurol Neurosurg Psychiatry*. 2006;77:1004–7.

³⁴Barer. The influence of visual and tactile inattention on predictions for recovery from acute Stroke. *Q J Med*. 1990;74:21–32.

³⁵Rowe FJ et al. Care provision and unmet need for post Stroke visual impairment. London: Thomas Pocklington Trust; 2014.

Research conducted during the review period

We have provided new insights into the visual problems experienced by Stroke survivors, their recovery over time and influence on functional outcome and quality of life, as measured using quantitative scales. Using qualitative semi-structured interviews we explored the impact of visual impairment on Stroke survivors' everyday life. Dr Christine Hazelton, supported by a Stroke Association Junior Research Training Fellowship (Stroke03.2), gained novel insights into the impacts of this impairment from the Stroke survivors' perspectives (including practical limitations, loss of social role and activities and emotional impacts) and identified patterns of recovery (Figure 15).

We have identified the assessment and treatment methods used across Scottish Stroke wards and hospital based eye departments and highlighted the barriers to better care. Scanning training was common and aims to teach Stroke survivors to compensate for visual impairments. Our suite of Cochrane Reviews relating to vision amongst the Stroke population also highlighted scanning training as a promising intervention. Gathering feasibility data (e.g. acceptability, cost, therapist support and eye movements targeted) we considered ten different scanning training approaches used in Scottish centres and provided clinically relevant training on these to health and social care professionals across Scotland (Stroke03.1). An n-of-1 exploration of four different scanning training interventions with home dwelling Stroke survivors provided important information on the feasibility of these training approaches.

Working within a collaborative writing group (Stroke03.4) we developed a pilot RCT to compare the clinical effectiveness of prism glasses, visual search training and standard approaches to care (Stroke03.3). Other scanning training evaluations are also being explored.

Impact

Our research has informed healthcare providers, policy makers (Scottish Parliament Cross Party Working Group) and clinical guidelines in the UK and Canada. Alongside dissemination in academic journals and at international conferences (targeting Stroke and vision rehabilitation researchers) we have also shared our findings with health and social care professionals in a series of well received training workshops. Attendees at one workshop for example, rating the “relevance and usefulness to clinical practice” as good (60%) to very good (40%). We developed user-friendly guides to scanning training and an online [YouTube lecture](#) to maximise the accessibility of this information. Our work also informed the development of the Chest, Heart and Stroke Scotland, Stroke Awareness and Training Resources (STARs) [module on Vision](#) which is an international training resource for Stroke healthcare professionals.

We also hosted a *Vision after Stroke* themed Research Open Day at Glasgow Caledonian University which was attended by almost 100 Stroke survivors, family members, health and social care professionals and students. Delegate comments included “*Keep up the great work!*” “*Great to have an event relating to vision and Stroke to raise awareness of visual problems after Stroke*” while others reported benefiting from “*...being able to speak to experts on my condition and get advice*”

In a pioneering collaboration between the NMAHP Research Unit, Glasgow Caledonian University’s department of [Vision Sciences](#) and [Visibility](#) (a third sector charity for people with sight loss) a new specialist clinical service for Stroke survivors with visual impairment was piloted in 2016-17. This joint initiative aimed to provide a full visual assessment for Stroke survivors attending for visual rehabilitation and will inform the rehabilitation process.

It is hoped that it will provide a rare opportunity for undergraduate Optometry students to gain specialist Stroke-care skills which in turn directly develop NHS capability and a capacity for this specialist patient population. The vision after Stroke work has benefited from the contributions of several NMAHP RU staff members including Brady, Campbell, Hazelton, Pollock and Taylor.

Research going forwards

Dr Christine Hazelton currently holds a GCU funded Postdoctoral Research Fellowship which is supporting the development of this workstream. Supported by multi-disciplinary collaborations (University of Bristol, Liverpool University), this workstream aims to develop the high-quality evaluations of novel scanning training interventions which build upon findings of our completed primary and secondary research.

Dr Hazelton was recently in receipt of a [Magnusson Award](#) to support a research trip to the Optometry department in the State University of New York (SUNY) and specialist Occupational Therapist Dr Mary Warren, University of Alabama. In the absence of high quality evidence, both centres of clinical and research excellence have developed innovative clinical practices which Dr Hazelton will explore.

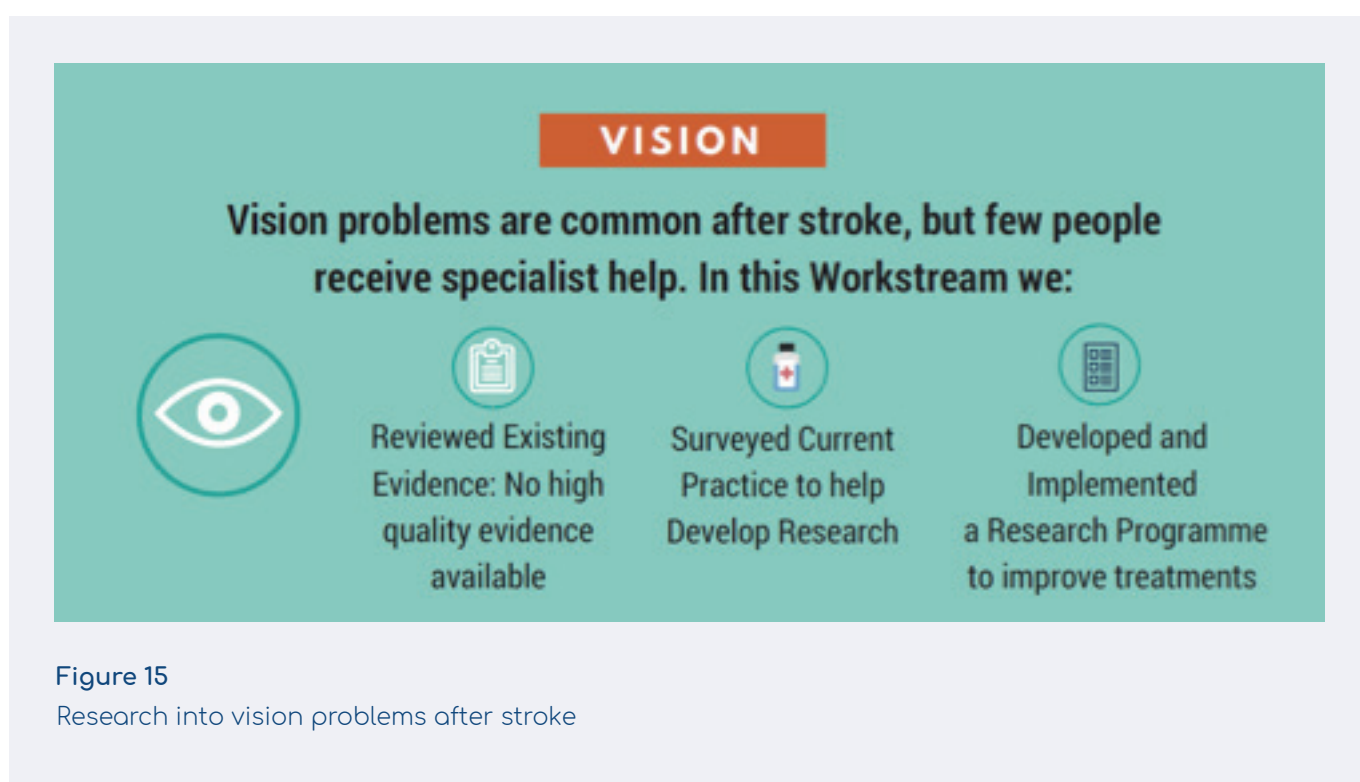


Figure 15

Research into vision problems after stroke

Stroke04: Oral Health after Stroke

Each year Stroke associated pneumonia affects 20% of Stroke survivors (approximately 33,000 people), tripling the risk of death at 30 days, and leading to poorer rehabilitation outcomes, longer hospital stays and greater dependency at discharge^{36,37,38,39}. Over the next 20 years admissions to Stroke care settings are expected to increase by 30%⁴⁰ elevating the numbers at risk of pneumonia. The onset of Stroke associated pneumonia is thought to be related to the

severity of patients' Stroke, their functional impairment (both pre- and post-Stroke onset) and level of consciousness³⁴. Swallowing difficulties (dysphagia) and associated aspiration of food and fluid into the lungs are also often implicated but aspiration alone does not fully account for the incidence of pneumonia^{34,36}. The possibility of a relationship between the occurrence of Stroke associated pneumonia and patients' oral health is receiving increasing attention.

Research conducted during the review period

Systematic review evidence gathered in nursing home populations indicates that enhanced oral health care (OHC) has a preventative effect on the incidence of pneumonia (absolute risk reductions between 6.6% and 11.7%; numbers needed to treat 8.6 to 15.3 individuals). Our Cochrane systematic review of interventions for improving patients' OHC following Stroke (Stroke04.1) included three small randomised controlled trials. We found some indication that OHC interventions may benefit the rate of pneumonia and denture cleanliness, but the evidence in the context of Stroke recovery is not conclusive. Current evidence is inconclusive due to weak design, small sample sizes, inadequate reporting, and poor description of clinically feasible interventions.

Providing OHC to patients with different Stroke and dental profiles (those with natural teeth, dentures, both or neither) within NHS Stroke care settings is challenging. Dry mouth, oral ulcers and stomatitis are common side effects of medication. Dysphagia and poor oral clearance of food and fluid residue further contribute to dental decay and microbial load. Some patients have pre-existing oral health problems - gum disease for example has been linked to the incidence of Cardiovascular disease, Diabetes and Stroke⁴¹. The more severe a Stroke, the more dependent the Stroke survivors are on others to support or facilitate their oral health care.

Based on our extensive preclinical and Phase I work we demonstrated variations in practice across Scottish Stroke care settings and lack of support for nursing staff providing this care. We updated our Cochrane systematic review of the evidence base which, despite the addition of evidence from three new trials, highlighted the paucity of evidence to inform OHC practice (Stroke04.1). Working with a multidisciplinary group we identified the lack of protocols of OHC and assessment tools for use in the Stroke care setting. We successfully co-produced an assessment tool, protocol and training intervention and delivered this evidence-based complex OHC intervention in a single site Stroke Oral healthCare pLan Evaluation feasibility study (SOCLE). The importance of capturing interaction between the different intervention components across different dimensions of Stroke care was reported in our highly accessed Trials publication⁴². We piloted a stepped wedge cluster RCT to compare the clinical and cost effectiveness of the complex OHC intervention to standard OHC (SOCLE II; Stroke04.2). Working across four Scottish Stroke rehabilitation wards (NHS Lanarkshire and NHS Greater Glasgow and Clyde) we recruited 325 patient participants and 112 members of nursing staff with follow-up on patient outcomes using Information Statistics Division data.

³⁶Langhorne et al Medical complications after Stroke. *Stroke* 2000;31:1223-1229.

³⁷Hilker et al. Nosocomial pneumonia after acute Stroke – implications for neurological intensive care medicine. *Stroke* 2003;34:975-981

³⁸Katzan et al. The effect of pneumonia on mortality among patients hospitalized for acute Stroke. *Neurology* 2003; 60(4):620-625

³⁹Perry et al. Screening for Dysphagia and Aspiration in Acute Stroke: *Dysphagia* 2001;16:7–18.

⁴⁰Lopez et al. Global and regional burden of disease and risk factors 2001: Systematic analysis of population health data. *Lancet* 2006; 367:1747-1757.

⁴¹Michishige et al. Relationships between activity of daily living, and oral cavity care and the number of oral cavity micro-organisms in patients with cerebrovascular diseases. *J Med Invest* 1999;46:79-85

⁴²Brady MC et al. Developing and evaluating the implementation of a complex intervention: using mixed methods to inform the design of a randomised controlled trial of an oral healthcare intervention after Stroke. *Trials* 2011;12:168

Impact

Our OHC research has informed the clinical guidelines for Stroke in the UK, Australia, Canada and New Zealand. Our adoption of a stepped wedge model has provided new insights into the reporting of stepped wedge trials and became a well received methodology ‘teaching session’ at the recent European Research in Rehabilitation Forum meeting 2017.

We were also invited to contribute to a range of international, multidisciplinary clinical workshops in Ireland and across the UK (Stroke04.1-2). Our research contributed to a module in the internationally accessed HYPERLINK “<http://www.stroketraining.org/>” Stroke Training and Awareness Modules. This workstream has been supported by the contributions from several NMAHP RU staff including Bain, Bowers, Brady, Campbell, McGowan, McQueen and Gray.

Research going forwards

The findings from SOCLE II will contribute to the development of a definitive randomised control trial (SOCLE III). A collaborative group involving researchers with a shared interest in OHC from the Universities of Manchester, Central Lancashire and Bangor are seeking to develop this further. A consensus paper highlighting the current evidence base, the challenges of research in this topic area, best practice and recommendations for future research has been submitted. We are currently updating the associated Cochrane review with the data from SOCLEII and potentially other relevant randomised controlled trials. Similarly, our national survey of OHC practice in Stroke care settings is also in development in collaboration with Professor Dame Caroline Watkins and Dr Elizabeth Lightbody (University of Central Lancashire) with a parallel version to be circulated in Australia by Prof Sandy Middleton (Australian Catholic University, Sydney).

⁴²Brady MC et al. Developing and evaluating the implementation of a complex intervention: using mixed methods to inform the design of a randomised controlled trial of an oral healthcare intervention after Stroke. *Trials* 2011;12:168

Introduction

The Pelvic Health workstream (previously 'urogenital disorders') focuses on improving a range of symptoms experienced by a wide variety of people: male and female, young and old. These problems affect bladder, bowel, pelvic floor and sexual function, and have the potential to impact on personal, social and work activities, and thus impair quality of life and emotional wellbeing. They may coincide with other long-term conditions, e.g. for many patients with neurological disease bladder and bowel symptoms are a distressing part of their condition, or can exist in their own right. The prevalence of these problems also tends to increase with age but are not an inevitable part of ageing. In addition, there is strong evidence supporting a link between vaginal delivery and urinary incontinence, bowel problems and pelvic organ prolapse, both in the short- and long-term. Thus, although not usually life-threatening, these issues are common and wide-ranging and warrant investigation within a Unit focusing on the Nursing, Midwifery and Allied Health Professions, who provide a large amount of the treatment and care for those at risk and affected.

Projected demographics indicate a rise in numbers of older people thus absolute numbers of individuals with bladder, bowel and pelvic floor dysfunction are forecast to increase substantially. These issues are fundamentally important to a person's physical and mental wellbeing, and effective basic care (e.g. use of catheters, continence products, vaginal pessaries) and (conservative) therapeutic interventions (e.g. pelvic floor muscle training, bladder retraining, abdominal massage, lifestyle education) are needed to optimise outcomes.

Bladder, bowel and pelvic floor dysfunction are often distressing for carers and families to manage and a leading cause of hospitalisation for many.

Within the workstream we aim to employ rigorous research methods to provide the highest levels of research evidence relating to interventions provided by nurses, midwives and allied health professionals which support and promote pelvic health. It is the only body of work in the UK which focuses specifically on providing evidence relevant to NMAHP practice in these areas. The work is typified by research which builds towards large multi-centre trials of high impact interventions. Thus we contribute to building capacity for "intervention science" which is still relatively uncommon in the NMAHP professions.

Research in the workstream falls into three sub-themes relating to prevention and management of (1) pelvic organ prolapse; (2) bladder conditions, and; (3) bowel conditions.

PVH01: Prolapse

Pelvic organ prolapse, defined as the symptomatic descent of one or more of the anterior vaginal wall, posterior vaginal wall, the uterus (cervix), or the apex of the vagina from the normal anatomical position, has been a long-standing focus within the workstream, identified in

the future plans described in the Unit's 2002 review documentation. Since then an extensive body of research has been developed, which is internationally recognised and continues to expand.

Research conducted during the review period

There are four broad types of intervention for prolapse: PFMT, surgery, pessary, pharmacology. Authorship on the Cochrane reviews relating to these treatments for prolapse has been the foundation for the projects in this sub-theme, addressing the evidence gaps identified in these reviews.

Our Cochrane review of conservative management, including Pelvic Floor Muscle Training (PFMT) for prolapse was first published in 2004, updated in 2006 and 2011, and is now in its fourth update with over 30 trials included. This review work was the foundation for our pilot trial and definitive multicentre trial (POPPY) showing the benefits of PFMT as a treatment for prolapse, published in the *Lancet* in 2014, shortlisted for BMJ paper of the year and awarded best clinical abstract at the 2011 annual International Continence Society conference. A follow-up survey of women's health physiotherapists in the UK provided some evidence of the impact on practice of this work (<http://impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=44618>), however further research to address the implementation of the evidence generated was required. The PROPEL study (PVH01.6) was funded by the NIHR HS&DR to formally investigate the uptake of PFMT for prolapse in diverse service settings in the UK. This study also includes long-term follow-up of the women from the POPPY trial using record linkage.

Prevention or delay of onset of prolapse may be possible with long term practice of PFMT and this was the focus of the PREVPROL trial (PVH01.1) funded by Wellbeing of Women, assessing the effectiveness of PFMT in the prevention of prolapse. The results, which showed a symptom benefit over two years, were published in the *Lancet* in 2017⁴⁴, reported as an NIHR Signal and awarded best clinical abstract (joint) at the 2016 annual International Continence Society conference. The 400 women participating in PREVPROL were recruited from our earlier ProLong study, an international longitudinal follow-up of women giving birth in 1993/1994 in Aberdeen, Birmingham and Dunedin (New Zealand).

Surgery for prolapse is a common procedure, with women having a 7% risk of prolapse repair surgery during their lifetime (Olsen 1997). Three projects within the sub-theme have a focus on surgery: two large multicentre trials led by HSRU evaluating the effectiveness of different surgical methods for prolapse repair (PVH01.3, PVH01.4) and one unit-led pilot study assessing the feasibility of a trial of PFMT as an adjunct to surgery (PVH01.2). The latter is of most relevance to NMAHP practice and, given the positive indications from the pilot data and controversies with prolapse surgery (high recurrence rates, mesh complications), will be taken forward in the next review period.

⁴⁴Hagen S, Glazener C, McClurg D, Macarthur C, Elders A, Herbison P, Wilson D, Toozs-Hobson P, Hemming C, Hay-Smith J, Collins M. Pelvic floor muscle training for secondary prevention of pelvic organ prolapse (PREVPROL): a multicentre randomised controlled trial. *The Lancet*. 2017 Feb 3;389(10067):393-402

Therapeutic pessaries are removable mechanical devices that are inserted inside the vagina to provide structural support to the pelvic organs: vagina, uterus, bladder or rectum. They are commonly used as first-line treatment for prolapse when surgery is not suitable or desired by the woman. Nurses and physiotherapist are often involved in the fitting of pessaries and the ongoing care. Complications include vaginal discharge, bleeding and ulcerations. The success rate for pessaries varies greatly in the literature due to varying definitions, however the largest studies reported 68% success at 1 year and 28% success at 5 years.

Following on from a feasibility study investigating PFMT as an adjunct to a pessary for management of prolapse, we began to investigate the barriers we had experienced

Research going forwards

There are good theoretical reasons, and growing empirical evidence to suggest, that pelvic floor problems such as prolapse are consequences of pregnancy and delivery. Prevention of prolapse is currently difficult due to an inability to identify women at high risk. It is possible that variables known before and during childbirth could be used to develop a prediction model that estimates the long term risk of prolapse and other pelvic floor disorders after childbirth. Using data from the ProLong study and the PREVPROL trial (PVH01.1), we have been collaborating with University of Gothenburg, University of Otago and Duke University (UR-CHOICE collaboration) to develop clinical prediction models for use in practice to inform women of their individual risk.

We are currently seeking funding for further follow-up of the ProLong cohort which will enhance this collaboration.

in involving women and healthcare professionals in research relating to their use. We undertook a multidisciplinary survey of relevant healthcare practitioners in the UK, and also interviewed women who had used a pessary or considered using a pessary. This work has been the focus of Dr Carol Bugge's secondment to the Unit from the University of Stirling which has led to a recent successful HTA application TOPSY (see below). As part of a GCU-funded PhD, we are now in the process of undertaking a James Lind Alliance Prioritisation Partnership (PVH01.5) to identify from women and healthcare professionals the top 10 research uncertainties relating to pessaries. The findings will be available in September 2017 and will guide our future pessary research.

We propose to contact women in the ProLong cohort and will send them a questionnaire, an invitation for pelvic floor examination and use data linkage to collect routine NHS data about treatment received for pelvic floor problems. Many of these women will now be menopausal/peri-menopausal when often pelvic floor symptoms e.g. prolapse, urinary incontinence, get worse and seek treatment. This would constitute the longest ever prospective follow-up of post-natal pelvic floor dysfunction worldwide, informing estimates of future need for treatment and research, and ultimately improving women's health during and after pregnancy.

Building on our systematic review and feasibility work, we have submitted an application for a 4-year trial on pessary self-management to NIHR HTA in response to their commissioned call in this area. The TOPSY (Treatment Of Prolapse with Self-care pessary) trial would assess if self-management of a pessary is more effective at improving women's quality of life than standard pessary care (visiting the clinic or GP for pessary follow-up).

Given the compliance problems with pessaries, we are also interested in ways of reducing the main side-effect of vaginal discharge which can lead to discontinuation. A proposal has been submitted to the Cunningham Trust for a PhD project to investigate the role of the microbiome in discontinuation of pessaries, and to isolate specific bacteriophage to eradicate the outgrowth of undesired bacterial populations. A long-term aim of this work would be to develop a pessary with fewer side-effects.

PVH02: Bladder conditions

The ability to control bladder function, and maintain continence, is of great importance to most individuals and their carers, and difficulties in this respect have been directly associated with admission to institutional care. Bladder dysfunction however is common for many groups in society e.g. those with neurological conditions,

Following on from the SUPER feasibility study, we will continue to look at the role of PFMT for women having prolapse surgery. We will focus on women having repair of anterior and/or posterior prolapse. These are the most common types prolapse and therefore the results will be most useful clinically, and will complement the results of a trial of PFMT for upper compartment prolapse which has recently been published.

Many of the interventions we evaluate, including PFMT, depend on the cooperation and motivation of the patient, to adhere to the chosen intervention and participate in their self-care. Obvious cross-cutting areas for future research focus are the behaviour change dimensions of such interventions. We have started to look at the use of behavioural change theories and taxonomies in our OPAL study (see below).

and is not an inevitable part of ageing. The prevalence of urinary incontinence in men and women has been shown to vary widely from 2 to 60% in subjects living at home and 23 to 93% in institutionalised patients. Due to increasing longevity it is anticipated that there will be a greater demand for continence services.

Research conducted during the review period

Existing evidence of effectiveness of conservative interventions for bladder problems is often not easily accessible to the practitioners who need to put it into practice. Translation of evidence into practice can be helped by providing a broad overview of all the available evidence spanning a range of treatment modalities. This was the aim of the CRUISE Cochrane Overview study (PVH02.7) funded by the Physiotherapy Research Foundation which focused on synthesis of evidence relating to female urinary incontinence. The results once available will directly inform an update of the Chartered Society of Physiotherapist's 2004 clinical guideline on the management of female urinary incontinence.

Two projects within this sub-theme are generating evidence on the role of PFMT in the management of female urinary incontinence. OPAL (PVH02.4) is concerned with the long-term adherence to PFMT and whether this can be enhanced by the use of electromyographic biofeedback. 600 women have been randomised to receive either PFMT alone or PFMT with biofeedback (both in clinic, delivered by a therapist and at home, self-administered with a hand-held unit). Severity of incontinence will be compared between the groups at two years, and cost-effectiveness will be assessed.

PFMT may not be equally effective for all women and it would be desirable to identify in advance which women would benefit most and to tailor the intervention accordingly. This is the focus of an ongoing Canadian Institutes for Health Research funded project, led by collaborators in Montreal, which will develop a clinical prediction rule to guide treatment for women with stress urinary incontinence (PVH02.6).

The use of urinary catheters is necessary for some individuals in order to manage their bladder problems. Four projects within this sub-theme relate to different aspects of catheter care. Three focus on intermittent self-catheterisation – an intervention used by around 50,000

individuals in the UK who have difficulty with bladder emptying, for example those with neurological conditions such as Multiple Sclerosis. COSMOS (PVH02.1), a mixed-methods study led by the Unit, investigated factors associated with the decision to continue or discontinue with intermittent self-catheterisation in people with MS. Ongoing support from professionals and family was an important factor in the success of using intermittent self-catheterisation, whilst development of a UTI in the early stages was a predictor of discontinuation. Importantly, individuals needed a period to adapt to the idea of intermittent self-catheterisation before starting this process which was a significant step for them. The Unit has collaborated significantly as regional/ work package lead on the ANTIC (PVH02.8) and Multicath (PVH02.3) projects. ANTIC is evaluating the effectiveness of daily antibiotics in preventing urinary tract infection in individuals who use intermittent self-catheterisation, whilst the Multicath programme grant focuses on the evidence for re-usable (versus single-use) catheters to inform future practice and guidelines.

Long-term indwelling catheters is a long-standing area of interest for the workstream, leading on from our Cochrane review published in 2010 on the use of catheter washouts. During the review period an update to this review has been published⁴⁵ and feasibility work (PVH02.5) has been completed in preparation for a multicentre trial of the effectiveness of washouts for prevention of catheter blockage. This work has been the focus of Dr Ashley Shepherd's secondment to the Unit from the University of Stirling.

Tibial nerve stimulation, a conservative intervention for the treatment of bladder over activity, has been the subject of two feasibility studies, in two different populations, in this sub-theme. The potential for a trial of this intervention was tested in care homes residents (PVH02.2) and in individuals who had suffered a stroke (PVH02.11). The former has been taken forward to a full trial (ELECTRIC – PVH02.9) which has recently been funded by NIHR HTA.

⁴⁵Shepherd AJ, Mackay WG, Hagen S. Washout policies in long-term indwelling urinary catheterisation in adults. The Cochrane Library. 2017 Mar 6.

Research going forwards

Following on from the results of our Cochrane Overview of conservative management of UI in women (CRUISE), we have identified that there was none or very low quality evidence for treatments such as bladder training, timed voiding, fluid balance, or obesity, despite patients being routinely given such advice. The effectiveness of such interventions needs to be established, however such a study also requires the establishment of robust outcomes especially relating to QoL, an economic evaluation and long-term follow-up.

A Unit-led application for a multicentre trial of the use of washouts for long-term indwelling catheters has been shortlisted by NIHR HTA in response to their commissioned call and a full proposal is being prepared for submission in September 2017. If this trial is funded it will be the only largest, robust trial in this area and will make significant advances in the evidence base, and will

provide much-needed guidance for practice.

A Parkinson's UK-supported workshop which we facilitated, involving clinicians and individuals with PD who have bladder issues, identified transcutaneous tibial nerve stimulation (TNS) as a potential treatment option by patients and clinicians, should it prove to be effective. This has resulted in us submitting an application for a large RCT of TNS in individuals with PD to Dunhill Medical Trust We will have feedback in December 2017.

PVH03: Bowel conditions

Bowel problems very often co-exist with other problems that we address in the Pelvic Health workstream, and much of the research described in PVH01 and PVH02 includes measurement of bowel function within it. Bowel dysfunction per se, is a very neglected and under-researched area despite its significant impact on QoL. The stigma associated with faecal incontinence often makes it difficult of patients and clinicians to talk or ask about it. The focus of this sub-theme is specifically the common bowel problems experienced by people with acquired neurological conditions such as stroke, Multiple Sclerosis and Parkinson's Disease.

Research conducted during the review period

Constipation is a common side-effect of Multiple Sclerosis and is often managed with medication. The use of abdominal massage for relief of constipation is a simple intervention that can be taught to, and implemented by, most individuals or their carers, but evidence of its effectiveness has been lacking. Following on from a feasibility study of the use of abdominal massage by people with MS, we carried out a multicentre trial of effectiveness funded by NIHR HTA (AMBER (PVH03.2)). A final report has been submitted to the funders.

People with Parkinson's Disease, similar to those with Multiple Sclerosis, can suffer from constipation, and a feasibility study of abdominal massage in this population, funded by the PD Society, was completed during this review period (SCAMP (PVH03.1)).

Research going forwards

During the AMBER trial it was highlighted that some individuals found it difficult to deliver self-massage and that this may be problematic in maximising effectiveness. As a result, in collaboration with engineering colleagues, a project to develop a hand-held device to assist people with Multiple Sclerosis in self-massage is being prepared for a PhD studentship.

Massage for chronic constipation in adults more generally is the focus of an international trial funded by Horizon 2020, for which the Unit is principal investigator, responsible for trial delivery in Scotland. The trial is evaluating the Mowoot, an existing medical device which is used by the individual to automatically deliver colon massage.

Summary

During the period from 2011 to 2017 the Pelvic Health workstream has produced 55 publications and has attracted grants totalling £11m, with £2.75m coming to the Unit. This demonstrates that the clinical issues addressed in the workstream are a priority for funders, and that the resources will be available to support the work through the next review period. More importantly, the issues focused on in the workstream are escalating

health problems due to increasing longevity in our populations. This will lead to greater demand for effective and person-centred interventions, and therefore good evidence to support these interventions and their implementation remains vital.

⁴⁵Shepherd AJ, Mackay WG, Hagen S. Washout policies in long-term indwelling urinary catheterisation in adults. The Cochrane Library. 2017 Mar 6.

Introduction

Reduction of the long term health and social impacts of inequality and the improvement of the health and wellbeing of mothers and young children is central to the Scottish Government's ambition to make Scotland the best country for children to grow up. This vision is central to our work in the Maternal and Child Health (MCH) work stream.

The work stream draws on a wide range of research methods to address important issues in the health and wellbeing of women through pregnancy, birth and the early years of parenthood, and for infants the critical period from pre-birth to pre-school. The work stream aims to produce robust and useful research evidence to inform high quality health and social care policy and practice, and to work closely with policy makers, practitioners, and service users to support implementation of effective and efficient interventions to improve maternal and child health and wellbeing.

At the time of the previous review work in this theme was concerned with midwives judgement and decision making in particular, in relation to early labour and labour care in remote and rural areas. Following the review, the unit's programmes were reorganised to focus on Interventions and on Improving the Quality and Delivery of Care.

Accordingly our research in maternal and child health has developed to include wider aspects of maternity service policy, organisation and delivery. Development of themes within this work stream have been informed by three main drivers. Firstly the Scottish Government's early years policy (<http://www.gov.scot/Topics/People/Young-People/gettingitright>) which has had a focus on early intervention and on wellbeing, while maternity policy has been concerned with promotion of normal birth and more recently, on patient safety. Secondly research priorities generated by women who have used maternity services. A priority setting project was undertaken with groups of young mothers and families in four NHS Boards.⁴⁶ Through this exercise a list of research issues of importance to mothers was generated and this has been used to inform funding applications during this review period. Finally the work stream builds on our previous research and on the expertise of Unit research staff, articulating with work undertaken across other work streams. For example the MCH work stream has drawn on the expertise of Prof Margaret Maxwell in research in mental health. Prof Pat Hoddinott joined the Unit in 2012 bringing a body of research in interventions to improve breastfeeding outcomes and primary prevention studies for smoking cessation in pregnancy and post-natal

⁴⁶Cheyne H, McCourt C, Semple K. (2013) Mother knows best: developing an evidence informed, consumer led, agenda for maternity care. *Midwifery* 29. 6 705-712

Research conducted during the review period

Research conducted during the review period has been focussed on three broad themes; Maternal and Infant Mental Health and Wellbeing, Maternity Services Policy and Quality of Care Delivery and Supporting Healthy Choices and Behaviours for Maternal and Child Health. These themes form a distinct body of work relating to maternal and child health however, there is considerable methodological and theoretical overlap with other work streams, in particular with Health Behaviour Change. We have continued to build on methodological strengths and expertise with several large scale projects using realist evaluation and realist synthesis approaches and a strong body of research using behaviour change techniques and innovative methods of intervention delivery for example using narrative story telling (MCH03.1). Several of these projects are reported in the Health Behaviour Change work stream.

Work on topics that were part of the decision making research programme during the previous review period has continued through post graduate students and long term collaborative partnerships. For example with the International Early Labour Research Group and Clinical Doctorate student Karn Cliffe whose thesis '*Does the way in which the latent phase (early labour) was experienced affect the process, duration and outcome of labour?*' has just been submitted.

This work stream links closely to the research undertaken at The Stirling Centre for Child Wellbeing and Protection (<https://www.stir.ac.uk/ccwp/>) and Prof Cheyne is currently centre deputy director. This link facilitates joint working and PhD supervision with social work, 3rd sector organisations, education and social science academics and builds multi-disciplinary expertise.

MCH01: Maternal and Infant Mental Health and Wellbeing

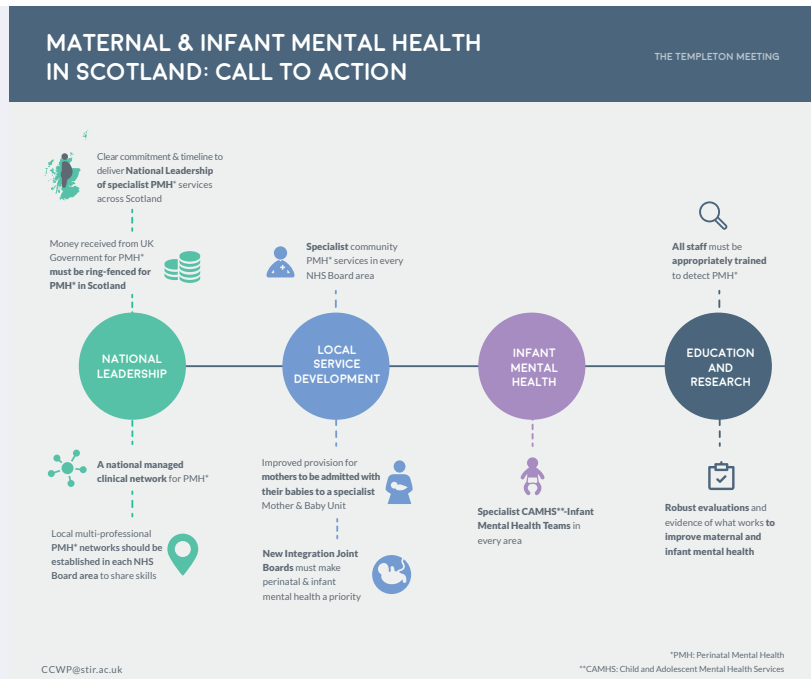
Depression and anxiety affect up to 20% of women during pregnancy and in the first postnatal year with a societal cost of around £8.1 billion annually. Without effective and timely treatment, perinatal mental illness can become long-term and may inhibit a mother's ability to provide her baby with the sensitive, responsive care that he or she needs. This in turn may have an impact on the child's emotional and intellectual development potentially creating a trans-generational cycle of poor mental health and reduced wellbeing.

In this theme we have worked collaboratively with perinatal health services, third sector organisations and women with personal experience of perinatal ill health to undertake research of direct relevance to them (see Figure 16).

Research was undertaken to evaluate an innovative local peer support programme for women with postnatal depression (MCH01.2). The perinatal befriending support service was developed and implemented by Aberlour – Scotland’s Children’s Charity. The programme involved training local volunteers who then provided regular support to women with perinatal mental ill health at risk of social isolation during the first year after giving birth. We undertook an evaluation informed by a realist evaluation framework and using standardised questionnaires, interviews and focus groups. In line with principles of co- construction and engagement underpinning this theme stakeholders from Aberlour worked with the research team in the analysis of qualitative data. Findings indicated that the women using the befriending serviced experience improvements in their mental health, wellbeing and self-confidence. A key element in the success of the programme was the personal relationships and trust that was developed between the befrienders, programme staff and the women and families who used the service.

It has been estimated that a substantial minority (around one in seven) of women develop significant clinical anxiety during pregnancy. However, it is difficult to accurately estimate incidence and to provide timely and effective interventions due to the lack of a suitable screening tool. We are undertaking a study, funded by the Scottish Government Chief Scientist Office as a PhD studentship to develop and validate a screening tool for antenatal anxiety (MCH01.1). The project is currently ongoing. A systematic review of existing tools, interviews with women with personal experience of perinatal mental ill health and clinicians via a Delphi study has informed the development of a prototype questionnaire which is currently being tested in a population of pregnant women in one NHS Board. The project will be complete in September 2018.

Figure 16
Maternal and Infant
Mental Health Partnership



Partnerships with service users, third sector and perinatal mental health services

Helen Cheyne, Margaret Maxwell, Irene Calveley

Synergistic partnerships have developed with perinatal mental health services in NHS Greater Glasgow and Clyde, third sector organisations in particular Aberlour – Scotland's Children's Charity and NSPCC and the Maternal Mental Health Scotland Change Agents, a group of women who have personal experience of living with perinatal mental ill health. Aberlour directly funded the unit to undertake an evaluation of their pilot Perinatal Befriender Project (MCH01.2) and they have subsequently provided PPI support to several other Unit projects (eg MCH03.1). We are working closely with NHS Greater Glasgow and Clyde's perinatal mental health service in the CSO funded PhD studentship (MCH01.1) to develop and test a screening tool for antenatal anxiety one of several co-generated research priorities. The Maternal Mental Health Change Agents have also worked closely to support and advise on the PhD project and in turn we have supported them to undertake their own research project – described below, providing research training and support in undertaking interviews and data analysis and in assisting with ethical and research governance procedures. We jointly organised a seminar of experts including NHS 3rd sector and service users involved in maternal and infant mental health in Scotland. This resulted in the 'Call to Action' see below and directly contributed to the successful advocacy for the establishment of a Perinatal Managed Clinical Network in Scotland. We anticipate that these mutually beneficial, non-hierarchical partnerships will improve the quality, relevance and impact of our work long term.

Talking about mental health in pregnancy in Scotland

The aim of this study is to explore barriers faced by midwives and mothers in talking about mental and emotional health during routine antenatal care. The study has been developed and undertaken by Maternal Mental Health Scotland Change Agents supported by researchers from the Nursing Midwifery and Allied Health professionals Research Unit at Stirling University and the Perinatal Mental Health Service at NHS Greater Glasgow and Clyde. Change Agents are women with lived experience of perinatal mental health problems who want to help ensure that every woman is asked about their mental and emotional health during their journey into parenthood, and that health professionals feel confident in asking and responding to them. The research involved focus groups with midwives and interviews with mothers who have lived experience of perinatal ill health. The groups will discuss the role of midwives in talking to mothers-to-be about their mental and emotional health during antenatal care, possible barriers in talking to them about mental and emotional health and what supports could be in place to help them to talk about these issues more easily and effectively. Interviews with women recruited via non NHS sources, will explore their experiences of talking about emotional and mental health issues with their midwives during antenatal care and their perceptions about barriers and facilitators to talking about these issues. The study is funded by a grant from SeeMe obtained by the Change Agents.

Joining the Dots: A call to action on maternal and infant mental health in Scotland.

On 4th of May 2016 a group of individuals and representatives of organisations actively involved in delivery of care, education and research in the field of perinatal and infant mental health met to discuss current issues in maternal and infant mental health in Scotland. The group produced a 10 point call to action to improve maternal and infant mental health in Scotland reflecting the concerns and priorities of the group.

Postnatal depression in women from three distinct ethnic groups in Malaysia was the subject of a PhD undertaken by Malaysian midwife Siti Roshaidai Mohd Arifin (Perspectives of Postnatal Depression in Malaysia: Exploring Experiences of Women and Healthcare Practitioners). Siti explored the understanding and experiences of women who had experienced (or were experiencing) postnatal depression and their healthcare providers. Her study found that while women across cultures experienced postnatal depression similarly their explanations and understanding of their condition varied. Health care professionals working in community settings lacked knowledge about postnatal depression and about appropriate referral and treatment options. We are continuing to work with Siti and collaborators in South East Asia to build research capacity and seek large scale funding for work on perinatal mental health in this region.

The Scottish Governments policy focus on the early years is the topic of several projects in the MCH workstream. Three interlinked PhD studentships described in the Maternity Services Policy and Quality of Care Delivery strand explore practitioner's responses to early years' policies (MCH02.5). Building on Unit expertise in systematic reviews and realist approaches we are currently undertaking a realist review of early years interventions with the aim of bridging the knowledge gap regarding the underlying mechanisms governing how and why interventions work, and for whom they work, in given contexts, to achieve desired outcomes (MCH02.3). The review is now complete and the report is being written.

MCH02: Maternity Services Policy and Quality of Care Delivery

We are undertaking several projects examining the Scottish Governments early years policy framework- Getting it Right for Every Child (GIRFEC) (MCH02.2; MCH02.5; MCH02.3). GIRFEC represents a distinctive case study of a national transformative programme. It aims to ensure that the wellbeing of each child is the central focus of all services that come into contact with children in Scotland, including NHS and social care, third sector and criminal justice. The principles of integration (seamless services), early intervention and common understanding of terminology and assessment aims to ensure that all services work together to improve outcomes for children and young people. However, there are inherent tensions around intrusion, data gathering, professional roles, and balancing well-being against child protection.

This has provided a unique opportunity to study the 'real time' implementation of a national programme of change. Three interlinked PhD projects (MCH02.5) are each addressing the overarching question – Is Scotland's early years' policy making Scotland the best country in the world for children to grow up. Each PhD project has developed a set of questions focussing on the differing perspectives of social work, education and health. The PhD studentships are funded by a collaboration of funders Aberlour – Scotland's Children's Charity, NHS Forth Valley, Children in Scotland, Social Work Scotland and University of Stirling. The students have the opportunity to work closely with their funders providing them with unique insights into their priorities and concerns and ensuring that their PhD work is relevant and useful to practitioners, families and policy makers.

In this review period we have undertaken research that aimed to inform and support improvements in the quality of maternity care delivery. We carried out a national evaluation of the Scottish Government normal birth initiative – Keeping Childbirth Natural and Dynamic (KCND).⁴⁷ Using realist evaluation methods we conducted multiple case studies combined with national audits of maternity care through the implementation working closely with lead midwives, service managers and other stakeholders to both inform and evaluate the KCND programme. Findings highlighted to importance of context, local champions and of securing high level ‘buy-in’ in successfully implementing a large scale programme of change. Methods and findings of this project have informed subsequent projects across the unit. The process of undertaking the KCND evaluation highlighted that there had been no national survey of women’s experience of maternity care in Scotland since 1998. We successfully negotiated with the Scottish Government Health and Social Care Directorate to undertake a national maternity experience survey in 2013, working in partnership with the Scottish Government Patient Experience Survey Programme ((MCH02.4). The survey was repeated in 2015, informing the National Maternity and Neonatal Strategy – The Best Start. The maternity survey now forms part of the rolling programme of national patient experience surveys. This project is an example of the way in which the work stream has aimed to work closely with the NHS to ensure that we are producing information that is rigorous, timely and useful.

Responding to the research priority setting exercise described above we have undertaken research using methods drawn from management science to improve the quality of postnatal care (MCH02.1).

The PRAM project (Postnatal Resource Allocation Model) used multi-criteria decision analysis with programme budgeting and marginal analysis in a project that aimed to support midwives and maternity service managers to undertake evidence based service redesign of postnatal care. PRAM enables stakeholders to assimilate information on current postnatal care pathways and then provides comparative feedback on costs and quality associated with various change options. Through discussion of possible trade-offs and revision of options decisions can be made on new postnatal care pathways. PRAM has been widely disseminated to maternity services and has been successfully implemented in one NHS Trust in England, the process is currently ongoing in two NHS Boards in Scotland. However, the process of implementation of change in postnatal care is notoriously slow. We are currently working with Prof Virginia Schmied (Western Sydney University) aiming to implement PRAM in three maternity hospitals in Australia. Methods used in the PRAM project are currently being applied to inform options for implementation of continuity of carer in UK maternity services.

PhD students have undertaken studies of midwifery support in labour (Mary Ross Davie, *Measuring the quantity and quality of midwifery support of women during labour and childbirth: The development and testing of the ‘Supportive Midwifery in Labour Instrument’*), and approaches to improving intrapartum care of obese pregnant women (Angela Kerrigan – no title yet). A clinical doctorate student has undertaken a mixed methods study examining women’s experiences of early labour care and associations between time of admission to hospital in labour and subsequent birth outcomes (Karn Cliffe).

⁴⁷Cheyne, H, Abhyankar P, and McCourt C. (2013) Empowering change: Realist evaluation of a Scottish Government programme to support normal birth. *Midwifery* 29.10: 1110-1121

MCH03: Supporting Healthy Choices and Behaviours for Maternal and Child Health

The Unit has a strong body of research on health behaviour change. Much of this research may be described equally in the Maternal and Child Health and the Health Behaviour Change work streams. Within this review period a considerable body of research has been undertaken to support breastfeeding. Research undertaken by Prof Pat Hoddinott and collaborators has focussed in supporting breastfeeding in various contexts.

Interventions have been developed and feasibility tested to support breastfeeding (HBC02.01, MCH03.4, MCH03.3, HBC02.04, MCH03.5); the effectiveness of telephone interventions to improve breastfeeding outcomes is being assessed in Sweden and Croatia (MCH03.4) and Doctorate student Marianne Lind is developing a social media breastfeeding intervention to integrate with the Family Nurse Partnership Scheme in Scotland.

Smoking during pregnancy carries serious risks to mother and infant health and is strongly related to inequality. In Scotland 17% of women were recorded as smokers at the first antenatal appointment; ranging from 10% to 24.5% between NHS boards, from 4.5% in the least deprived women to almost 29% in the most deprived with rates as high as 38% in pregnant women under 20 years of age. We are currently undertaking a pilot and feasibility trial of a novel story telling intervention delivered via text messages to support smoking cessation in pregnant women (MCH03.1). The intervention was developed in a PhD project (Mary Steele) informed by methods described in the HBC work stream.

The intervention comprises a narrative story of a fictional young pregnant woman 'Megan' trying to stop smoking by overcoming a series of commonplace barriers. Behaviour Change Techniques relevant to smoking cessation are embedded in the story and women also receive pictures depicting the size of their baby and information about its stage of development. This study is currently recruiting in two NHS Boards. It complements methodological learning from other narrative text message interventions in progress in the Health Behaviour Change workstream (HBC01.01, HBC01.03, HBC01.07 and HBC01.08, HBC01.13). It also complements work on incentives for smoking cessation in pregnancy (HBC02.01, HBC02.03), because incentives alone are less effective than incentives provided with additional support. Our experience in using text messaging to support health behaviour change is also being used in this workstream to support weight loss and maintenance of weight loss in the postpartum period (MCH03.6).

Research going forwards

In this review period, we have worked closely with service providers and service users to address important and relevant research priorities. We have developed methodological expertise in particular in realist methods of evaluation and reviews. Looking forward we will continue to focus on areas where we have built methodological capacity and where we have internationally recognised expertise. We will continue to work with collaborative partnerships developed during this review period in particular with third sector and service user organisations.

Maternal and Infant Mental Health and Wellbeing: Key priorities in this theme are further validation of the screening tool for antenatal anxiety, establishment of a research hub for perinatal mental health in Malaysia, and to extend research in this theme to include projects focussed on infant mental wellbeing.

Maternity Services Policy and Quality of Care Delivery: Over the next five years the key area of change for maternity services across the UK will be implementation of the twin maternity service transformation strategies The Best Start (Scotland) and Better Births (England). Implementation of two closely aligned policies set in contrasting health systems within the UK presents a unique opportunity to explore the processes by which the key principles of NHS change programmes are interpreted and implemented in diverse policy and practice landscapes and to increase understanding of the interconnected roles of context and interventions in creating mechanisms for change. This will be a future research priority for the work stream. We will continue to work with maternity services in the UK and Australia to support improvement of postnatal care using PRAM.

We will apply methodological approaches developed in the PRAM project and expertise in implementation research gained across work streams to undertake research to provide evidence on how national health policies are implemented and how effective implementation strategies work in practice.

Supporting Healthy Choices and Behaviours for Maternal and Child Health: supporting behaviour change for maternal and infant health will continue to be an important research theme. The unit has developed a strong body of research, collaborations and expertise in this area which are described in the HBC work stream and will continue to grow. More detailed future plans for breastfeeding research, incentives for behaviour change around childbirth and post-natal weight management are described. Further, the University of Stirling has highlighted Health Behaviour Change as one of the University Research Themes supported by infrastructure and capacity building funding. We are currently working with colleagues across the University and with external partners to develop externally funded research in this theme. A key priority will be to seek funding for a full –scale trial of the SKIP-IT smoking cessation intervention, assuming successful completion of the pilot and feasibility trial.

Summary

The provision of rigorous research evidence to support and inform midwives, maternity service managers and policy makers, mothers and families and to improve the health and wellbeing of mothers and young children is central to the work of the NMAHP Research Unit. In this review period we have worked closely with maternity service users and providers, we have built close collaborations with multi-professional academics from across our host universities and internationally and in particular with academics involved in social care through or link with the Centre for Child Wellbeing and Protection. We have worked to support research capacity in midwifery research in Scotland and internationally.

We have developed expertise that is recognised internationally in behaviour change methodologies and in realist approaches to large scale evaluation and review. Our work on supporting breast feeding is also recognised internationally for its innovation scale and impact. Looking forward we will continue to undertake research that is highly relevant to Scotland's world leading transformational programme of health and social care with its central focus on the health and wellbeing of mothers and young children and on reducing the health and social impacts of inequality.

2.4.4 Health Behaviour Change (primary prevention) (HBC)

Introduction

The Health Behaviour Change (HBC) workstream focuses on the primary prevention of disease in order to improve health and wellbeing throughout the life course. The workstream integrates the principles and practices of behaviour change science across all of the Unit's work, and is part of the Unit's Interventions Programme. The behaviour change interventions address smoking, obesity, alcohol consumption and physical activity, which are priority areas for Scottish Government and are also areas where NMAHPS are expected to contribute to improving patient and public health.

Scotland's population has a rising prevalence of obesity and alcohol consumption, which are key policy concerns within Scottish Government. Considerable progress to reduce smoking through legislation has occurred, but it is still a major contributor to cancer, cardio-vascular and respiratory morbidity and mortality. Following an ecological and systems approach to behaviour change, novel interventions are required at the individual, family, social network and local health service levels to complement legislation and government policy. Interventions to prevent future ill health require integration with health and social care services in order to improve reach and use staff resources efficiently. Health inequalities is an important consideration underpinning Health Behaviour Change research because lifestyle behaviours that increase the risk of poor health cluster together in the most disadvantaged communities and within families. There are inequalities of engagement with services to support behaviour change, with the inverse care law evident. The more educated and advantaged are the most likely to attend appointments, join groups and be motivated to self-manage lifestyle change.

There are also gender differences with men less likely to engage in services to support behaviour change compared to women. Nurses, midwives and allied health professionals who provide health care to the people of Scotland have a key role to play in contributing to research in behaviour change, by working in multi-disciplinary teams with psychologists, health economists, social sciences and research methodologists. They have a unique contribution to make through their holistic understanding of how lifestyle behaviours relate to health and wellbeing in the day-to-day lives of people. Through preventing ill health and promoting wellbeing, effective behaviour change interventions have the potential to reduce some of the burden on public services, which are struggling to cope with increased demand. The Government is keen to change Scotland's reputation as "the sick man of Europe" and develop new approaches to health improvement. Research to find new approaches that are effective and cost effective ways to promote and sustain lifestyle behaviour change is necessary in order to achieve this goal.

Our research aims to develop novel behaviour change interventions which can be tested for effectiveness and cost-effectiveness, through public and patient involvement and close collaboration with health and social care stakeholders. Since the previous review, this workstream has expanded. Several of the senior staff in the Unit senior contribute expertise to Health Behaviour Change across the Unit workstreams: smoking cessation in pregnancy (Professors Hoddinott and Cheyne) and in cancer (Professor Wells), obesity (Professor Hoddinott), alcohol (Professor Williams), physical activity (Professor Williams, Dr Morris) and mental health and wellbeing (Professor Maxwell).

Research conducted during the review period

A considerable body of research has been undertaken since the last Review, building on the expertise of the UK Centre for Tobacco and Alcohol Studies and the Health Behaviour Group at the University of Stirling, and strong collaborations within Scotland (HSRU, HERU, Dundee) and in Europe. Studies in the HBC workstream are grouped into two themes:

- Primary prevention of ill health
- Incentive interventions to change health related behaviour

As behaviour change is relevant to a broad spectrum of research, some studies are described in other workstreams. Where interventions relate to the secondary prevention of a specific disease or in specific populations, these studies are described in either Long Term Condition Management (LTCM) or Stroke (Stroke). Our work covers the whole life course from pregnancy to old age. Where the target population are either pregnant or have recently given birth, the studies are described in the Maternal and Child Health (MCH) workstream.

HBC01: Primary prevention of ill health through behaviour change interventions

This covers primary prevention of ill health where behaviour change interventions target well populations to address obesity, alcohol, smoking and physical activity. The research targets three important aspects to addressing health behaviour change: health inequalities; gender and situated behaviour change.

Health inequalities

The HBC studies have a strong focus on addressing health inequalities and ensuring a broad reach to populations that are less likely to engage with health services. The Unit has built considerable expertise in delivering behaviour change interventions via text message (HBC01.3, HBC01.7, HBC01.8, HBC01.1, MCH03.5, MCH03.1, MCH03.6), in partnership with automated software systems in Dundee (HBC01.3, HBC01.7, HBC01.8, HBC01.1, MCH03.1) and the London School of Tropical Medicine (MCH03.6). Text message interventions are attractive because they have broad reach (93% of adults used a mobile phone in 2016), facilitate autonomy for the recipient, are relatively low cost to access and deliver compared to face-to-face interventions and provide equity across urban, rural and

remote populations, which is relevant to policy in Scotland. The text message interventions build on Mark Grindle's interdisciplinary PhD (graduated 2015) that uses narrative story-telling, with the 'banter' and humour as recommended by the Romeo qualitative evidence review. M Grindle's PhD embraced the learning from commercial film, television and computer game narrative strategy to inform behaviour change interventions.

Gender: interventions targeting either men or women

With colleagues at HSRU and HERU in Aberdeen, we undertook systematic reviews to integrate quantitative, qualitative and health economic evidence to investigate what interventions work to reduce obesity in men (ROMEO, HBC01.6). This work was undertaken with close involvement of the Men's Health Forum Charity who provided a public and patient contribution to the work. We found that men are seldom involved in the design of interventions, men are less likely to engage in interventions for weight management than women, and that interventions should be designed and tailored according to gender.

The NIHR funded ROMEO report has been included in NICE guidelines for management of obesity in men and The Men's Health Forum with Public Health England have published guidance on How to make weight loss services work for men which is available on their website which is impacting on UK practice⁴⁸. Men's health Forum Charity are continuing to collaborate with us on the Game of Stones study (HBC01.1) which arose from the ROMEO systematic reviews. NIHR funded studies (HBC01.3, HBC01.7, HBC01.8) aiming to reduce alcohol consumption delivered tailored text messages specifically for more disadvantaged men with problem and binge drinking. There was a high level of engagement with the intervention and high retention rate for men participating in the trial.

In parallel we are gaining considerable expertise in developing and testing behaviour change interventions tailored for women, particularly around childbirth (see Maternal and Child Health Workstream) and more disadvantaged women (HBC01.14)

Situated behaviour change interventions

A strong rationale exists for situating interventions to change behaviour in the places where people are in their everyday lives, rather than expecting people to travel to receive an intervention.

Recruitment and engagement are important problems for both the gathering of evidence of effectiveness and understanding the reach of interventions, particularly for more disadvantaged or vulnerable populations. Many of the places selected for delivery of interventions or assessing trial outcomes are outside the NHS and public sector, in recognition of the current resource constraints: Bingo clubs (HBC01.4, HBC01.10); Breast Cancer Charities and Weight Watchers (HBC01.2), Schools (HBC01.9), local communities (HBC01.1, HBC01.5, HBC01.11, HBC01.14, MCH03.5, MCH03.6). School based interventions are one approach to addressing healthy lifestyle behaviours in childhood and adolescence (HBC01.9). This is a crucial time to focus on healthy lifestyle behaviours to prevent health problems later in life. A systematic review was undertaken to inform such interventions in a the adolescent population (HBC01.13)

HBC02: Incentive interventions to change health related behaviours

This builds on an internationally recognised body of work led by Prof Hoddinott. The NIHR HTA funded BIBS (Benefits of Incentives for Breastfeeding and Smoking Cessation in pregnancy) study (HBC02.1). The BIBS study included systematic reviews, evidence synthesis, primary qualitative research and surveys and was a platform study for the design of trials. Subsequently, CRUK and CSO have co-funded the CPIT III multi-centre randomised controlled trial (HBC02.2, HBC02.3) to test the effectiveness and cost-effectiveness of shopping voucher incentives for smoking cessation in pregnancy. In this trial, shopping vouchers are

awarded for attendance at a smoking cessation service and providing biochemical proof of smoking cessation through Carbon Monoxide levels (breath test) and verification through serum cotinine measures in routinely collected blood samples. The BIBS study designed a survey to assess the acceptability of different financial incentive strategies for smoking cessation in pregnancy amongst the general public. This survey has been replicated with colleagues in France, to provide comparative data for representative samples of the UK and French public.⁴⁹

⁴⁸Men's Health Forum and Public Health England (2014). How to make weight-loss services work for men. [Booklet] ISBN: 978-1-906121-16-7. Haynes Publishing

⁴⁹Berlin N, Goldzahl L, Bauld L, Hoddinott P, Berlin I. Public acceptability of financial incentives to reward pregnant smokers who stop smoking: a United Kingdom - France comparison. *European Journal of Health economics*. 2017. Available on-line: DOI 10.1007/s10198-017-0914-

Financial incentives on their own are unlikely to be effective without additional tailored support and a BIBS study Discrete Choice Experiment (HBC02.1) found that additional text message support is likely to increase the effectiveness of shopping voucher incentive interventions to increase smoking quit rates in pregnancy. The research investigating incentives for behaviour change ties in with research investigating text message interventions (HBC01.3, HBC01.7, HBC01.8, HBC01.1, MCH03.5, MCH03.1, MCH03.6).

Qualitative data from the BABI studies (HBC02.4, HBC02.5) found that financial incentives for breastfeeding are challenging due to the lack of a validated objective outcome measures suitable for use in trials, compared to smoking cessation where outcomes can be biochemically validated. Offering women a free breast pump would be the most acceptable incentive to the UK public and to early years' health professionals. The BIBS study (HBC02.1) found that the cost of a breast pump was considered prohibitive by younger, more disadvantaged women, who are the least likely to breastfeed their infants. Addressing health inequalities of breast pump access is being addressed by the BABI studies (HBC02.4, HBC02.5) funded by Glasgow Children's Hospital Charity and Scottish Government which are developing a breast pump incentive intervention. The collaboration between Edinburgh Napier and NMAHP-RU is working closely with Early Years policy makers in Scottish Government. A Cameron Carnegie Bursary is supporting midwife Nicola Gillespie to undertake a MSc whilst working on BABI (HBC02.4, HBC02.5).

The ongoing NIHR funded Game of Stones study (HBC01.1) investigates whether narrative text messages with or without financial incentives can help obese men, particularly those from disadvantaged areas to meet weight loss targets. The incentive intervention is underpinned by the findings from the ROMEO evidence syntheses, the BIBS study review of incentive interventions for all health related behaviour change and behavioural economic theory on loss aversion, endowment and commitment contracts. Loss aversion is the concept that losses matter to people more than gains and are therefore, in theory more likely to motivate behaviour change. The endowment is operationalised by a fake cheque given at the start of the trial stating that the University has put money in a named account. The commitment contract is operationalised through attendance to be weighed at a community or Health Centre venue at set time points to assess whether 5% and 10% weight loss targets have been met at 3, 6 and 12 months.

Research going forwards

We plan to continue the development and testing of interventions with broad reach and acceptability in partnership with those who we seek to help. We will do this by combining theory, evidence, logic models and narrative to ensure that a wide range of perspectives are considered. The three underpinning themes of health inequalities, gender and situated behaviour change will continue. Opportunities have been identified through our high quality systematic reviews of the evidence base (HBC01.6, HBC02.1, HBC01.13) and through our strong public and patient involvement collaborations (Section 1.10) which ensure that our research incorporates the perspectives of the people who will most benefit. PPI colleagues tell us that attention to the delivery of interventions, so that they are appealing; easy to access; facilitate choice and opportunity for the people they will help is crucial. In addition it is important that interventions are future proofed for sustainability and efficiency. Priority will ensure that interventions are scalable, with broad reach, and seamlessly integrate with health and social care services. However, these interventions will also consider how scarce health professional time can be utilised efficiently and how the interventions can reduce the burden on the NHS and public services through disease prevention. Wellbeing and mental health are also key research topics within the Unit, and this will also underpin the Health Behaviour Change research we undertake. The methodological work already in progress, which will produce guidance on developing complex interventions (M.2), will continue.

Primary prevention of ill health through behaviour change interventions

In the coming years, Health Behaviour Change primary prevention research will focus on 3 key areas 1) obesity research, through applying theory and evidence to testing interventions for healthy eating, increasing physical activity and reducing sedentary time, 2) smoking cessation and 3) breastfeeding (see Maternal and Child Health workstream).

Obesity: Two NIHR funded feasibility trials testing text message interventions are in progress (HBC01.1, MCH03.6) and if they meet set progression criteria, funding for definitive effectiveness and cost-effectiveness trials will be sought. Increasing physical activity/reducing sedentary behaviour is an important component of interventions to tackle obesity and will also continue as part of secondary prevention and rehabilitation programmes in the Stroke and Long Term Condition Management workstreams. Unit staff will benefit from the expertise available through being in the Faculty of Health and Sport and through continued collaboration with health Psychology at the University of Stirling.

Smoking cessation: The CPIT III trial (HBC02.2, HBC02.3) will commence in Autumn 2017. A recent grant application to CRUK for feasibility testing of a social network intervention for smoking cessation in pregnancy was unsuccessful, but will be re-submitted with the changes recommended by the reviewers. A stakeholder workshop with midwives and smoking cessation advisors has contributed to the development of this intervention, to ensure it can be integrated seamlessly into existing pregnancy services. If the SKIP-IT (MCH03.1) intervention is shown to be feasible, funding for a full trial will be sought.

Incentive interventions to change health related behaviours

The multi-centre pragmatic CPIT III trial to investigate the cost-effectiveness of financial incentives to help women to quit smoking in pregnancy commences in Autumn 2017. NMAHP-RU (Professor Hoddinott and Dr Harris) are leading the process evaluation.

Australian and American collaborators are seeking funding to replicate the BIBS survey of the acceptability of financial incentives for smoking cessation in pregnancy in order to create a database to allow compare attitudes across four countries (UK, France, Australian, USA). This will build on the established collaboration with French researchers (see footnote 46 above).

The results of the Game of Stones feasibility trial (HBC01.1) led by Pat Hoddinott with Stephan Dombrowski from Health Psychology at University of Stirling will be available towards the end of 2018. This three arm trial has set progression criteria, which if met will lead to a NIHR funding application to test either the novel incentive intervention.

Summary

Research in health behaviour change has grown in volume, quality and impact since the last Review. The evidence base has been established through rigorous systematic reviews, primary research and strong collaborations with PPI, academic and health service partners. International recognition and pathways to impact are growing particularly for our work on incentive interventions for smoking cessation, breastfeeding and obesity. Publications are strong and are expected to grow as the interventions that we have developed and feasibility tested translate into funding for definitive randomised controlled trials and potentially change practice.

As far as we are aware this is the first intervention of its nature to be tested for weight loss and weight maintenance. The BABI studies (HBC02.4, HBC02.5) will seek further funding to test breast pump incentive interventions. Scottish Government have recently confirmed funding to design a step wedge trial to evaluate a proposed free breast pump hire scheme policy. This will be aligned to the new policy introduced in August 2017 to provide baby boxes containing non-financial incentives for every new baby in Scotland to give them an equal start in life and to promote wellbeing. The proposed breast pump hire policy will be linked to baby boxes and will aim to address the health inequalities in breast pump access reported in the BIBS study (HBC02.1).

Scotland has an ambition to change its reputation as the “sick man of Europe” and to do this diet, physical activity, breastfeeding and will need to remain a priority, particularly in the early years and around childbirth. Our planned research will inform this ambition through the design and testing of health behaviour change interventions. The research will continue to consider the impact on health inequalities which is a Scottish Government priority. This will be underpinned by methodological research to ensure the studies are of the highest quality.

Introduction

It is estimated that around 2 million people in Scotland have at least one long-term condition that brings with it significant human, social and economic costs. As the population ages, the prevalence of long term conditions will increase, placing an additional burden on already stretched health and social care services. People living with long term conditions are more likely to experience poor mental and physical health, more likely to be admitted to hospital and more likely to use primary care services. Nurses and Allied Health Professionals have a crucial role to play in addressing the physical and psychosocial needs of people living with long term conditions, and in supporting self-management so that specialist services are appropriately used and directed to people with the most complex needs.

This workstream focusses on understanding the needs and experiences of people who live with long term conditions, and on developing patient-centred

interventions to improve health and wellbeing. Two substantial areas of research within this workstream are mental health and cancer. The third area of work comprises projects on improving self-management and reducing risk in the elderly and in people with specific health problems e.g. coronary heart disease and amputation, as well as in children and young people with asthma and cystic fibrosis. Many cross-linkages exist with other Unit workstreams such as 'Innovations in services, systems and roles' and 'Health Behaviour Change'.

Improving patient-centred care is an underlying goal of the research conducted in this workstream. Projects aim to understand the experiences, needs and priorities of people living with long-term conditions so that interventions are targeted appropriately.

Research conducted during the review period

Much of the research conducted in this workstream has taken a real-world approach, reflecting the reality and challenges of managing long term conditions in a complex and dynamic health and social care system, therefore producing evidence which is highly applicable. Several mixed-methods feasibility studies have been carried out, and a variety of research designs have been used, including Phase 1-3 randomised controlled trials, systematic reviews and evidence syntheses. Projects in this workstream formed the basis of a NMAHP RU research symposium on Developing complex interventions at the 2016 RCN International Research

Conference in Edinburgh, showcasing cutting-edge methods and solutions for a variety of long term conditions. Improving patients' experiences and enhancing self-care and participation in services is a central component of the work conducted in this workstream. Our research has been focussed on three main sub-themes: Improving mental health and wellbeing; Improving outcomes and experiences after cancer; and Interventions to improve self-management of long term conditions.

LTCM01: Improving mental health and wellbeing

Around a third of the population are affected by mental health problems at any one time, and improving mental health is a major priority for Scotland and the rest of the UK. A significant body of work on improving mental health and wellbeing has been conducted in the unit, under the leadership of Professor Margaret Maxwell. Several major projects have focussed on depression, a long term condition which has a profound impact on all aspects of life, including productivity in the workplace. Building on the award winning European Alliance Against Depression studies, the fourth EU funded project for this collaboration was the ground-breaking PREDI-NU project (LTCM01.5), which was awarded Euro 1.8m through the European Health programme 2010 to increase awareness of and develop self-management materials for mild to moderate depression. Ten countries participated in this European collaboration reviewing the literature on internet based CBT, which informed the development of an online self-management tool for mild to moderate depression (iFightDepression) which was feasibility tested in 6 countries and has been made available in 9 languages. The findings were commended by the EU Policy Officer for Mental Health at a European Commission meeting in Luxembourg in 2012.

Other studies have used innovative community-based approaches to improve uptake of mental health services ReMoDe (Recovery versus Mindfulness models for Depression; LTCM01.1).

Another significant area of work under this sub-theme focusses on suicide, which is now the leading cause of death in young people in the UK. Many of the Unit's projects (including all the EU funded studies) aim to prevent suicide by raising awareness among healthcare professionals and identifying people who are most at risk of suicide. A large data linkage project examined the hospital records of people who died by suicide in Scotland over a thirty year period, finding that more deaths occurred soon after people were discharged from general hospitals than psychiatric hospitals and identifying a need for better suicide prevention interventions, especially in accident and emergency (see Figure 17).

100 Ways of Using Data to Make Lives Better

A series from The Farr Institute of Health Informatics Research showcasing the UK's most significant examples of using data in research

Can Data Be Used to Help Prevent Suicides?

A team of researchers from The Farr Institute in Scotland analysed data to see if there is a relationship between people dying by suicide and the last time they visited hospital.



Nadine Dougall, Prof Paul Lambert, Prof Margaret Maxwell and Dr Alison Dawson, University of Stirling
Prof Richard Sinnott and Susan McCafferty, National e-Science Centre, University of Glasgow
Carole Morris, David Clark and Dr Anthea Springbett, NHS Information Services Division, Edinburgh

Public Health
Case Study 11

The Challenge

Suicide is tragically the leading cause of death in young people in the UK. Men are affected three times more than women and more people die each year by suicide than by road traffic accidents.

Whether people who die by suicide had recently attended general or psychiatric hospitals, or whether they have a history of mental ill-health isn't often known. By looking at hospital records and the last hospital visit of individuals who died by suicide, scientists can identify the people who are most at risk and also where action can be taken to reduce the number of people losing their lives in this way.

The Research

Three decades worth of suicide records in Scotland, from 1980 to 2010 for those aged 15 or over were linked to hospital records. The data was made anonymous before being studied in a safe and trustworthy way. Permission was granted from the NHS to verify that the data was being used in the public's best interest and that the researchers were qualified to access it.

The Results

The results showed that more people were discharged from general hospitals than psychiatric hospitals before they died by suicide. Many of these deaths occurred soon after people left hospital which suggests that there could be missed opportunities to prevent some people from dying by suicide.

Two thirds of the 16,411 suicides studied could be linked to hospital records and were examined to see what treatment individuals had received before they took their own life.

A quarter of people died by suicide within three months of the last time they were discharged from hospital and only 14% of those

discharged from a general hospital had a diagnosed mental illness recorded in their medical records during last visit. One in five of these people had a previous history of mental illness that had not been recorded.

The Impact

The research will help improve activities and training in hospitals that can prevent some suicides from happening. It showed that by making better use of health records, hospitals could follow-up with patients who have self-harmed, in particular young men, and assess those who have a history of self-harming or of mental illness.

This work was presented to The Farr Institute's NHS Benefits Realisation Taskforce as an example of the benefits that using data in research can provide for patients. This group assesses how the Institute's work in Scotland is supporting safe and effective improvements to health and care for patients.

It was also presented at a House of Commons event run by the All-Party Parliamentary Group for Medical Research to highlight the importance of using data in medical research.

As well as being reported by The Independent, the research was referred to by the Royal College of Psychiatrists, the professional body responsible for managing standards in psychiatry, as a study that "prompts call for better suicide prevention activity in general hospitals".

For further information or to seek help with suicidal thoughts or feelings please contact the Samaritans www.samaritans.org

Enquiries to Cherry Martin, Communications Manager, The Farr Institute of Health Informatics Research, cherry.martin@ed.ac.uk



Produced by The Farr Institute of Health Informatics Research



www.farrinstitute.org

Figure 17

Using data to make lives better: exploring risk factors for suicide

Interventions to improve mental health and wellbeing also focus on developing the assessment skills of nurses and AHPs working with people with long-term conditions to identify biopsychosocial needs which underlie many long term conditions and inhibit people's ability to engage in self-care. The PCAM project (LTCM01.2), for example, tested the feasibility of using a Patient-Centred Assessment Method in the context of annual practice nurse reviews for patients with long term conditions in primary care.

After PCAM training, there was evidence of more attention being given to patients' mental wellbeing and social issues in consultations, with more signposting to Third sector/community based (self-help) resources. The development and testing of the PCAM has been in partnership with University of Minnesota with building international interest in the tool via its website (www.pcamonline.org).

LTCM02: Improving outcomes and experiences after cancer

There are now two and a half million people living with cancer in the UK and this population will rise to four million by 2030. Although some types of cancer still have a poor prognosis, cancer is increasingly viewed as a long term condition with 500,000 people in the UK living with long term consequences of cancer treatment that have a significant effect on everyday life. For example cancer survivors are more likely to experience poor physical and mental health, other chronic conditions and secondary cancers. Improving health and wellbeing and addressing the long term effects of cancer and its treatments are now major priorities for UK governments.

Cancer charities play a major role in improving the outcomes and experiences of people with cancer, and Unit researchers have worked in partnership with a number of key charities to increase the potential for evidence to have a direct impact on policy and practice. Recent projects include the analysis of free-text comments provided in the first Scottish Cancer Patient Experience Survey (LTCM02.6), working with Macmillan Cancer Support and the Scottish Government, and the development of a sarcoma specific patient reported outcome measure (LTCM02.3), in partnership with Sarcoma UK.

This sub-theme includes several studies exploring the potential to improve the health behaviours of people with cancer, through weight loss, smoking cessation and/or diet and lifestyle change. Such projects have been designed to recognise the significant challenges of health behaviour change in the context of extremely demanding treatments. Other research in this theme focusses on interventions to improve quality of life, for example the SIP study aimed to develop a swallowing intervention in people with head and neck cancer (LTCM02.1), and the Beatson Cancer Centre project evaluated a late effects clinic in haemato-oncology (LTCM02.4).

An additional body of work, with cross-linkages to the Innovations in Services, Systems and Roles (ISSR) workstream, focusses on the role and contribution of cancer nurses to patient experiences and outcomes. NMAHP RU researchers have led a large systematic review (ECCO Oncopolicy project ISSR02.12), which forms the first of three stages in a major European project - Recognising European Cancer Nursing (RECaN). The findings of this review will be combined with evidence from four case studies, conducted in European countries where nursing is at different stages of development, to influence education, professional recognition and policy initiatives at a European level.

LTCM03: Interventions to improve self-management of long term conditions.

This sub-theme focusses on a range of long term conditions for which self-management is essential. The treatment of both asthma and cystic fibrosis, for example, depends largely on patients and their carers adhering to continued intervention. Unit researchers have developed interventions, in partnership with patients and carers, to improve adherence to chest physiotherapy in children with cystic fibrosis and to encourage physical activity in young people with asthma. Other projects have been centred on decision-making, goal setting and action planning, to promote patient involvement and patient-centred care in people living with a prosthesis after amputation and in people living with long term asthma.

Several projects within this theme have used novel technologies to engage patients with long term conditions in self-management.

For example, the CSO-funded project “Development of interventions to reduce patient delay with symptoms of acute coronary syndrome: identifying optimal content and mode of delivery” (LTCM03.3) has developed 3D computer models of hearts to help patients understand the changes which occur in the heart when there is disease. Our SCooP project (LTCM03.4) created a video to help children with cystic fibrosis and their parents/ carers adhere to chest physiotherapy, and our Physical Activity in Asthma project (LTCM03.1) produced a 3D interactive animation film to encourage young people with asthma to be more active. All of these projects communicate key messages in an accessible way, so as to encourage health behaviour change. Figure 18 shows a storyboard used to develop the computerised animation for our Physical Activity in Asthma project (LTCM03.1).

Figure 18
Storyboard from the Physical Activity in Asthma project



Another important area of work focusses on improving independence. A large multi-centre trial, following a successful pilot study, is currently evaluating a speech and language therapy intervention to improve speech and communication difficulties in people with Parkinson's disease (LTCM03.9 and LTCM03.10). Other studies in this theme focus on preventing falls in the elderly (LTCM03.5 and 7). Falls are a major cause of fracture, unplanned hospital admission, poor recovery with associated co-morbidity development e.g. incontinence,

Research going forwards

Strategies to improve self-management are key to improving health and reducing the NHS burden, and our research plans for this workstream centre around this issue. Two of our asthma studies (LTCM03.1 and LTCM03.2) have produced promising interventions, which we plan to further develop and test, in order that they can be evaluated in a definitive trial and implemented into practice. We will be working with the Asthma UK Centre for Applied Research to submit proposals to NIHR for funding. We are also currently having discussions with the MS Service in Scotland who are currently looking at the use of novel technologies to monitor patient symptoms with the aim of more appropriate face to face contact with clinicians.

Summary

The management of long-term conditions is likely to remain a major challenge for health and social care for the foreseeable future, in Scotland and beyond. NMAHPs play a huge role in promoting self-management, as well as developing and delivering rehabilitative and supportive interventions to improve the experiences and outcomes of people with long-term conditions.

leading to institutionalisation or death in people with long-term conditions. Two Unit projects focus on podiatry interventions to reduce falls. These projects have been conducted in care homes, providing contextual data on the feasibility issues of undertaking research in research-naïve settings, which are likely to become increasingly important as the population ages.

In addition, such technologies can enhance self-management by encouraging exercise, diet changes, strategies for improving bladder and bowel control etc.

Interventions to improve self-management of mental within long term conditions will also be taken forward from their current feasibility trials to establish their evidence base before implementation e.g. PCAM and iFightDepression. The expertise the Unit has acquired in data linkage will be taken forward in new studies to understand the role of childhood adversities on mental ill health and suicide. Additional work on suicide will include understanding how services and healthcare practitioners (including mental health nurses) respond to children and young people who are identified with suicidal behaviour and ideation (LTCM01.7). These latter studies will cross-link with the Maternal and Child Health workstream.

This workstream makes an important contribution to the understanding and management of mental health conditions, cancer, neurological and respiratory diseases, and we will continue to develop innovative and robust methodological research, which has an impact on the lives and wellbeing of individuals and their families.

Introduction

Scotland faces significant challenges in poor population health due to persistent health inequalities and intergenerational deprivation. Successive Scottish Governments have sought to lead the way in re-shaping our health and social care systems to respond to these challenges and in supporting the development and testing of health care interventions and innovative health care solutions to improve population health and wellbeing.

Most of these solutions occur within complex systems and impact direct on NMAHP roles. Consequently these services, systems and roles require, and often form, new complex interventions that require to be developed and evaluated.

Research conducted during the review period

The Innovations in Services, Systems and Roles workstream brings together the majority of the Unit's work in this area over the last review period. There are close relationships between this workstream and others, especially at an individual project level. Thus some innovations, systems and roles projects (REF: MCH 02.1; PVH 01.5) are reported within separate workstreams for completeness of their workstream narrative,

but also fit within this workstream, and draw on the Unit's overall expertise and focus in developing and evaluating emerging innovations in a complex and ever changing policy environment. The Innovations in Services, Systems and Roles workstream has two key sub-themes: 1) Pre hospital Emergency Care; and 2) Development and evaluation of innovations in developing services, systems and roles.

ISSR01: Pre-hospital emergency care

Pre-hospital emergency care spans the life spectrum and covers a wide range of health conditions, interventions, health and social care providers and physical locations. Pre-hospital emergency care can take place in urban, rural or remote settings and may be delivered by a range of clinicians including paramedics and other allied health professionals, nurses, as well as a range of other care providers such as ambulance technicians, lay community first responders, and social and voluntary care providers.

The aging social demographic and concurrent increase in multi-morbidities and ability of ambulance clinicians and others to deliver increasingly sophisticated care to a wide range of emergencies has dramatically increased the complexity of pre-hospital emergency care over the last decade. Currently pre-hospital emergency care faces several wicked problems, which are so significant they are at the forefront of current affairs. These include crowded emergency departments, unnecessary hospital admissions, and sub-optimal treatment pathways resulting in poor quality patient outcomes and experiences.

The Scottish Government's 2020 vision is to enable people to live longer healthier lives at home, or in a homely setting. The actions required to achieve this directly impact on pre-hospital emergency care and include: prioritising staying at home instead of admission to hospital; avoiding unplanned or emergency admissions; integrating health and social care and more effective working with other agencies, the third and independent sectors. In order to achieve these challenging goals it is necessary to improve our understanding of how pre-hospital emergency care systems work so that a range of interventions can be developed and evaluated to improve outcomes. This work-stream actively addresses these problems.

A key feature of this work-stream is the NMAHP-RU's 13 year collaboration with the Scottish Ambulance Service (SAS) who deal with over 600,000 pre-hospital emergencies each year. This has led to a close relationship between the Unit and ambulance care across Scotland. Research problems that have been addressed have emerged from practice, but been deeply rooted in policy priority areas. The close connections with the ambulance service have led to swift implementation of a number of evidence-based interventions into practice. The Collaboration has also resulted in an increase in research capacity within the SAS, including an MPhil for a Clinical Governance Manager within the SAS (Keith Colver), and the graduation of Scotland's first and currently only doctoral paramedic (Dr. David Fitzpatrick). David has been located within the Unit since the commencement of the Collaboration and holds an honorary Senior Research Fellowship with the University of Stirling as well as his Consultant Paramedic position (Research and Development) within the SAS. Dr Edward Duncan (Associate Professor, NMAHP-RU, and University of Stirling) holds an honorary

senior research post with the SAS and is a member of their Research, Development and Innovation Governance Group. Nationally, Edward and David sit on the National Ambulance Service Research Group, and the Emergency Medical Services Research Forum, and David is a panel member of the NIHR HTA Emergency and Hospital Care Advisory Panel. The work-stream has undertaken a range of exploratory, intervention development and evaluation studies using differing research methods as appropriate to the problem. One area of current work (mental health and self-harm emergencies) relates closely to the Unit's mental health research, with potential for future cross workstream collaborations (e.g. Stroke) in the future.

We have undertaken a body of work focusing on improving the intervention and follow-up of people who experience a pre-hospital hypoglycaemic emergency. Hypoglycaemia ('hypo'), when blood glucose (sugar) is too low, commonly affects people with diabetes. It is a side effect of treatment with insulin or certain tablets, not eating properly or excessive exercise. The brain needs glucose to work, so 'hypos' can lead to confusion, or in severe cases coma, which needs external medical attention for recovery. Hypos lead to around 100,000 ambulance attendances, costing £13.6 million each year in England^{50,51}. Around 1 in 10 people have another severe hypo within a fortnight of calling an ambulance¹. The research aims to help patients prevent this from happening, to develop an ideal process/pathway of care for ambulance and community staff to follow, and to test how well this works. Better care and follow-up are likely to lead to fewer repeat hypos, reducing ambulance calls or hospital admissions, improving patients' health and wellbeing, and reducing healthcare costs^{1,2}.

⁵⁰Fitzpatrick D, Duncan EA (2009) Improving post-hypoglycaemic patient safety in the prehospital environment: a systematic review. *Emerg Med J*, 26(7), pp. 472-478.

⁵²Khunti K, Fisher H, Paul S, Iqbal M, Davies MJ, Siriwardena AN (2013) Severe hypoglycaemia requiring emergency medical assistance by ambulance services in the East Midlands: a retrospective study. *Prim Care Diabetes*, 7(2), pp. 159-165.

To date five separate projects have contributed to the development of this work-stream:

- A systematic review of post-hypoglycaemic patient safety in the pre-hospital environment¹.
- Three externally funded studies:
 - o Improving self-referral to primary care following hypoglycaemic emergencies: the development and initial assessment of a research-based intervention. Diabetes UK.
 - o A national prevalence survey of impaired awareness of hypoglycaemia in patients who have been attended by the Scottish ambulance service due to a severe hypoglycaemic event. Scottish Ambulance Service (ISSR 01.1).
 - o A Linked data study of the impact of hypoglycaemia on healthcare services (ISSR 01.2)
- Two PhD theses:
 - o Theresa Ikegwuonu (co-funded by The Scottish Ambulance Service and the University of Stirling) Diabetes and Pre-Hospital Emergency Care. Completed October 2013
 - o David Fitzpatrick (co-funded by the Scottish Ambulance Service and the University of Stirling) Hypoglycaemic emergencies in Pre-hospital emergency care. Completed June 2015.

The systematic review on improving post-hypoglycaemic patient safety in the pre-hospital environment¹ was awarded the Royal College Ambulance Service Liaison Committee (JRCALC) Award for the 'Research Most Likely to Influence Practice' (2009) in recognition of the Systematic Review of post-hypoglycaemic patient safety in the pre-hospital environment. The review went on to change JRCALC national clinical guidelines on the treatment of pre-hospital treatment of hypoglycaemia. These guidelines are used by all ambulance services in the UK and guide practice internationally.

This research has also influenced national policy making. Edward and David were invited speakers at Scottish Parliament Round Table events on hypoglycaemia in 2014 and 2015. David now sits on the Scottish Diabetes Group, a national steering group to oversee the review and ongoing development of the national diabetes strategy and to provide expert advice to the Scottish Government Health Directorate.

Another important area of work focuses on mental health and self-harm emergency care. Ensuring effective processes and positive outcomes for people experiencing a mental health crisis is essential. Nine million, seven hundred thousand emergency calls were made to ambulance services in England and Scotland in 2014-2015. Patients who are experiencing a mental health crisis or who have self-harmed account for a substantial proportion (10%) of these calls. The quality of services and outcomes for people who experience mental health crisis are highly variable and compare poorly to those received by people requiring a physical health emergency response and there are no evidence-based protocols to support best practice for this patient group in the pre-hospital environment. It is likely that mortality and morbidity levels for people experiencing a mental health crisis could be improved. However, little is currently known about what happens to people experiencing a mental health or self-harm emergency who are attended by the ambulance service.

Little was known about what happens to people experiencing a mental health or self-harm emergency who are attended by the ambulance service. Therefore we undertook a scoping project as part of an international post-doctoral secondment of a Canadian Paramedic (Dr. Tim Ewart) who came to work at the Unit for three months.

Following this we gained funding from the Chief Scientist office to undertake an epidemiological study using linked patient records of mental health emergencies, including self-harm, to: a) understand the characteristics of this population; b) describe their current care pathways; and c) describe their clinical outcomes (ISSR 01.3). This information helped identify potential opportunities to develop further interventions to decrease numbers of patient suicide and levels of distress, and may avoid unnecessary emergency ambulance and emergency department contacts.

Linked data analysis using detailed data-sets such as the NHS Scotland Information Services Division unscheduled care data-mart can provide meaningful sources clinical and service information that can be used to support intervention development and service reorganisation. The method used in this study could be replicated with other clinical conditions. The data from this study were presented at a key stakeholder workshop and used as the basis of future intervention development. Linked records however, only tell part of the story. Further study is required to understand patients' experience of emergency departments and practitioners' perceptions of their competencies in dealing with this patient population. Such knowledge will further support future intervention development that will then be tested through pragmatic clinical trials and other evaluation methods.

ISSR02: Development and evaluation of innovations in developing services, systems and roles.

This sub theme has focused on developing and evaluating services, systems and roles to ensure that the right care is delivered in the right place, at the right time, and in a manner that puts the person receiving services at the centre of their care. As part of this work, the Unit has developed expertise in complex evaluations of large scale quality improvements initiatives.

The importance of the Mental Health and Self-harm Emergency Care linked data findings for health policy and health service delivery has been recognised.

Representatives from the Mental Welfare Commission attended the workshop and reported the study findings to their Chief Executive Officer. Our results will now inform the Mental Welfare Commission's statutory service evaluation.

Commission staff will consider how the study results can inform the questions they will ask of patients in their next annual survey, as well as during future themed hospital visits. The Principal Investigator (Edward Duncan) met with leaders of the Scottish Government Mental Health Improvement Program and others in October 2016. The importance of the study results were recognised and the program members' emphasised that the results would further refine their thinking about strategic action. The linked data study was presented at the UK national 999 EMS Research Forum in 2017 and won the research award for "Highest Quality Research". This award funds the Principal Investigator (Edward Duncan) to present the research at the Paramedics Australasia International Conference in Melbourne in November 2017. Whilst in Australia, Edward will meet with colleagues in Monash University, La Trobe University and Ambulance Victoria to investigate opportunities for international collaborations in the development and evaluation of pre-hospital mental health and self-harm emergency care interventions.

These include the ScoPIC study (ISSR 02.1) which included two independent step wedge trials of Releasing Time to Care (RTC™plus) and the Caring Behaviours Assurance System (CBAS™) with longitudinal evaluations embedded within each study.

Throughout the course of the study 1507 patients consented to participate and completed study questionnaires, and 168 staff interviews of approximately one hour in duration were completed and analysed. Other quality improvement evaluations conducted by the Unit include a qualitative evaluation of a Social and Health Integration Partnership (The Govan SHIP Project) (ISSR 02.2), an evaluation of advanced nurse practitioner roles in primary care (ISSR 02.3) and a qualitative baseline evaluation of community hub pilots in NHS Fife and NHS Forth Valley (ISSR 02.4).

Other complex evaluations have centred on different aspects of developing services, systems and roles. This includes improving caseload management (ISSR 02.5) designing and evaluating services (ISSR 02.6), and developing and evaluating interventions to improve patient and professional decision making (ISSR 02.8)

Research going forwards

With the Scottish Government policy focus on the challenges of health and social care integration and the delivery of Realistic Medicine this workstream will remain a priority focus area. Our ongoing research will form an important part of the Unit's new 'Transforming Care Delivery' programme. We will undertake research to improve our understanding of: placing people and their healthcare journeys at the heart of understanding quality and delivery of care; health and social care integration; the need for more care to be delivered at out of hospital; the crucial role that primary care will play in future delivery; changing roles of healthcare professionals and use of non-professionals.

The findings of the IPEC study are currently being prepared for submission to high impact journals, but have already been presented at international research conferences, to lead nurses across NHS Scotland, and to Scottish Government policy makers. This dissemination activity has directly influenced the future direction of these interventions and influences the future implementation of other national quality improvement initiatives.

This work will take forward learning from our research to date, with a new emphasis on people and their journey's, NMAHP enhancement of self-care, new ways/models of delivery that transverse health, social and third sectors, roles and skills mixes, and understanding enhanced NMAHP roles, such as Advanced Nurse Practitioners. We will build on the knowledge and expertise that we have developed within this workstream to undertake research that address Global Health Challenges in pre hospital emergency care research and another areas. Such research will provide a step change in the innovation and internationality of the research to date and provide excellent opportunities for inter-sector working and development of the capability and capacity of researchers working in this area.

Summary

Research conducted within the 'Innovations in Services, Systems and Roles' workstream during the review period focused on key problems and challenges facing the NHS in Scotland that fit within our existing Quality and Delivery of Care research programme. We developed and evaluated interventions that supported individuals to staying at home instead of admission to hospital; avoiding unplanned or emergency admissions. We have undertaken a data-linkage study to determine the nature of the problems in care pathways and outcomes for patients who experience a mental health emergency. Our ongoing collaboration with the Scottish Ambulance Service has enabled us to develop and evaluate interventions that are then rapidly implemented in practice showing a positive and sustained impact on ambulance care service delivery. The collaboration has led to an increase in paramedic research capacity and has positioned the Unit as one of the leading contributors to pre-hospital emergency care research within the UK, with a growing international research profile.

The Unit has developed expertise in complex evaluations of large scale quality improvements in primary and secondary care. Projects completed within this workstream have provided practical and academic contributions to caseload management, service evaluation, and developing and evaluating interventions to improve patient and professional decision making.

Looking forward we will continue to build on our existing pre-hospital care research to improve health outcomes and reduce unnecessary hospital admissions. Within growing research capacity we envisage being able to lead on a larger number of research council bids, in collaboration with academic and clinical partners from across the UK and internationally. As funding for global research challenges is becoming more prominent we are seeking to expand our pre-hospital emergency care expertise into the global health challenge environment. Service, system and role development and evaluation will remain a focus within the Unit's new Seamless Systems and Comprehensive Care research programme, responding to the changes in health and social care provision and providing meaningful evaluation of emerging services and roles.

Appendices



We now have an established group of experts able to undertake high quality research that underpins NMAHP practice. NMAHPs throughout the UK and beyond can access robust systematic reviews to support the development of clinical guidelines and pathways which are used as the basis of service improvement and service redesign across Scotland.



Appendix 1: Staff biographies



Ali, Myzoon, BSc (Hons), M. Res (Neuroscience), PhD

Myzoon is a Senior Research Fellow with research interests in use of big data to answer research questions, standardisation of outcome assessment in Stroke clinical trials, establishment and use of international collaborations to coordinate Stroke research and optimisation of Stroke service delivery for post-Stroke aphasia. She completed a PhD at the University of Glasgow where she worked to establish and promote the Virtual International Stroke Trials Archive (VISTA), a resource consisting of patient data from acute Stroke clinical trials. She joined the NMAHP Research Unit in September 2008 to develop VISTA-Rehab, an expansion of VISTA to aid the planning of Stroke rehabilitation trials.



Brady, Marian, PhD

Marian is the founding Director of the Stroke Rehabilitation research programme since 2000. Alongside a dynamic multidisciplinary team the programme delivers high quality evidence which improves the Stroke care and rehabilitation experienced by Stroke survivors in Scotland and internationally. Marian's research seeks improved recovery from Stroke-related language (aphasia) and speech problems (dysarthria) and better oral health and continence care of Stroke survivors. It informs several international clinical guidelines.

She is the founding Chair of the Virtual International Stroke Trials Archive for rehabilitation trials (VISTA-Rehab) which includes data from 10,000 Stroke survivors. In 2013 she established the Collaboration of Aphasia Trialists which supports 27 collaborative projects spanning 36 countries - RELEASE reuses research information from 6000 individuals with aphasia to seek improvements in recovery and rehabilitation after aphasia. She received the international Robin Tavistock Award (2016) for her contributions to aphasia, Honorary Life membership of the Stroke Society for Australia (2015) and she holds an Honorary Chair at the University of Queensland, Australia.

An Associate Editor with the Cochrane Stroke Group, her systematic reviews have appeared in the top 10 most accessed reviews in the world and are amongst the most cited reviews on Stroke. She has published extensively on the development and evaluation of complex interventions including randomised controlled trials of oral health care (SOCLEII) and speech and language therapy interventions (Big CACTUS, PDCOMM). As an experienced speech and language therapist, working in community and hospital settings in Ireland and Scotland she left the NHS as senior Stroke rehabilitation specialist to complete her PhD at the University of Strathclyde (2000).



Calveley, Eileen, MSc, MA

After gaining an MSc in Health Psychology, Eileen has worked for NMAHP-RU for 4 years on a number of projects. Currently evaluating a pilot web-based GP Consultation system using qualitative methods, previous projects have included: the pilot study of the Person-Centred Assessment Method (PCAM), exploring the feasibility and acceptability of a primary care nurse-led assessment tool to identify mental health issues and encourage behavioural change in patients with long term conditions; investigating mothers' perceptions of their need for continuity of midwifery care in the maternity period; evaluating the impact and effectiveness of the pilot Aberlour Perinatal Befriending Support service; and a feasibility study of Recovery models in comparison with Mindfulness-based Cognitive Therapy for managing recurring depression.

Research interests include promoting behavioural change in people with long term conditions and the relationship between mental and physical health issues. Eileen is currently undertaking a distance-learning taught PhD in Organisational Health & Wellbeing at Lancaster University.



Campbell, Pauline

Pauline is a Research Fellow who joined the unit in 2012. Her current role at NMAHP RU involves carrying-out and supporting high quality systematic reviews relating to nursing and complex healthcare interventions. She is a highly experienced Cochrane reviewer, has led user-involvement groups and has extensive expertise in consensus decision-making methodology. She has long track record of expertise in conducting systematic reviews; implementing search strategies and information management; evidence assessment and synthesis, and is skilled at managing simultaneous multiple reviews. She also has a lead role in production of Government reports for the Chief Nursing Office, Scotland. Pauline has a specific interest and expertise relating to rapid reviews and overview synthesis methodology.

She was awarded her PhD in 2012 from the University of Plymouth for the development of novel auditory techniques based on electrophysiology for the detection of central auditory processing. Before joining NMAHP Research Unit, Pauline was employed as a Lecturer in Speech and Hearing Science at Queen Margaret University (2006 – 2012).



Cheyne, Helen, PhD, MSc (Med Sci), RM, RGN

Helen joined NMAHP Research Unit in 2001 and is Deputy Director based at University of Stirling. She is midwife who worked in urban and rural maternity care settings before becoming involved in research almost 30 years ago. Before joining the Unit she led an innovative clinical midwife research unit in Glasgow's Royal Maternity Hospital. She is Professor of Maternal and Child Health and the Royal College of Midwives (Scotland) Professor of Midwifery.

Her current research has a focus on maternity service policy and delivery, women's experiences of maternity care, perinatal mental health and postnatal care. She has designed and led a number of large scale trials and evaluations of complex interventions in maternity care. Working closely with colleagues across disciplines, practitioners both in the NHS and 3rdsector, policy makers and mothers is a key aspect of all of her research. She has a link role as Deputy Director of the Stirling Centre for Child Wellbeing and Protection focussing on infant and child health and wellbeing and integration of health and social care in the early years.



Coles, Emma, MA(Hons), MSc, PhD.

Emma is Postdoctoral Research Fellow in Implementation Science, and is part of the Scottish Improvement Science Collaborating Centre (SISCC). Her responsibilities include research and evaluation across the SISCC Maternal and Child Health and Older People workstreams, and the Context and Behavioural Determinants themes. She joined the Unit in 2014 to work on a CNO-funded child health, wellbeing and inequalities study, involving the use of realist synthesis methodology to explore how and why early years interventions work or do not work in given contexts and with what outcomes and effects.

Prior to joining the NMAHP Research Unit, Emma spent 6 years working on the Scottish Government-funded Smile4Life oral health and homelessness project at the University of Dundee, during which time she completed her PhD on engagement with health promotion and health services within the context of homelessness. Emma has worked on qualitative research projects on a wide range of topics, including health inequalities, disability, social inclusion and community planning. Emma has an MA (Hons) in Politics and an MSc in Applied Computing, both from the University of Dundee.



Dickson, Sylvia

Sylvia joined NMAHP Research Unit in April 2017, having worked with the unit previously for 10 years. Her experience is in trial management of clinical trials. She returned to the unit to work on a multi-centre randomised controlled trial comparing the clinical and cost effectiveness of two types of speech and language therapy, versus deferred treatment, for people with parkinson's disease (PD COMM). Prior to this she worked for the School of Health and Life Sciences at Glasgow Caledonian University working on a feasibility study for a randomised controlled trial of transcutaneous posterior tibial nerve stimulation to alleviate Stroke-related urinary incontinence (TREAT-UI). Between 2004 and 2014 she worked on various projects at NMAHP Research Unit. She was the Trial Coordinator for two multi-centre randomised controlled trials. The first was an international multi-centre, randomised controlled trial of a pelvic floor muscle training intervention for women with prolapse (POPPY trial). The second was a parallel-group multi-centre randomised controlled trial in women from a longitudinal study of pelvic floor function after childbirth (PREVPROL trial). Initially, she joined the unit to conduct and manage a qualitative research study investigating the psychosocial impact of a Stroke related speech impairment on the daily lives of patients and their carers. She gained her first experience of research working as a clinical trial researcher at Bioforce (UK) Ltd after obtaining an honours degree in Biology from, as it was known then, Paisley University.



Duncan, Eddie, MA(Hons), MSc, PhD

Edward is an Associate Professor in Applied Health Research. His current research investigates unscheduled and emergency care, with a specific focus in pre-hospital emergency care. Edward is responsible for securing grant funding, managing a group of contract researchers, line managing junior staff, supervising doctoral research students, and disseminating high quality research to improve the quality and delivery of healthcare. Methodologically Edward is particularly interested in realist methods, consensus methods, and intervention development.

In 2006 Edward was appointed as a Research Fellow in the Nursing Midwifery and Allied Health Professions Research Unit. This followed his award of the first Nursing Midwifery and Allied Health Professions Research Training scheme's post-doctoral research fellowship (2004-2006), which he undertook at The University of Stirling. Edward's clinical background is in occupational therapy and cognitive behavioural therapy, which he practiced in a range of mental health settings (1995-2004). He received his PhD (2004) whilst still working in clinical practice. Edward is a founding member of the Royal Society of Edinburgh's Young Academy of Scotland.



Elders, Andrew, BSc MSc

Andy is a statistician and joined the Unit in June 2014, following 5 years as clinical trials statistician in the Health Services Research Unit at the University of Aberdeen. He has a background as a health services statistician holding posts previously in NHS National Services Scotland, NHS Fife and NHS Lothian, during which time he gained a master's degree in applied statistics from Edinburgh Napier University in 2007. Andy has extensive experience of research into treatment of pelvic floor dysfunction and is currently involved in several studies in this area. He also works across other Unit workstreams, including Stroke, maternal and child health, and behaviour change. Andy's particular interests relate to RCTs of complex interventions, evidence synthesis methods, and data linkage.



Fitzpatrick, David, PhD

David is employed by the Scottish Ambulance Service and has been attached to the Chief Scientist Offices' Nursing, Midwifery and Allied Health Professions Research Unit (University of Stirling) for the past 11 years. His position as Consultant Paramedic in Research and Development within the Scottish Ambulance Service Clinical Directorate involves undertaking research aligned to the services clinical strategy. The focus of Davids work is on the quality and safety of prehospital emergency care with current projects investigating prehospital and emergency department handover, hypoglycaemic emergencies and Mental Health/Psychiatric related emergencies. David continues to practice clinically as a paramedic within the West Division of the Scottish Ambulance Service.



France, Emma, PhD

Emma joined the unit in March 2012 as a lecturer and her research focuses on families and health. She specialises in qualitative research methods but also has expertise in quantitative and mixed methods approaches. Emma studied psychology and French at the University of Glasgow where she was awarded a PhD in psychology in 2000. Following this, Emma worked for seven years as a researcher and project manager in the commercial and voluntary sectors including for a mental health service provider, a design consultancy, and a telecommunications company. From April 2007-March 2012, she was employed as a research fellow at the Universities of Stirling and Edinburgh on a study funded by the National Institute for Health Research Service Delivery and Organisation programme: 'Information for choice: what people need, prefer and use'. Subsequently, Emma worked on the Scottish School of Primary Care funded 'MALT' (Scottish Multiple And Long Term Conditions) study to develop a national cohort study of people with multiple morbidity and on a qualitative study of men's and women's experiences of Stroke before joining the NMAHP Unit.



Gillespie, Nicola, RM, BSc

Nicola is a Registered Midwife and joined the Unit in 2012, as part of the AnTIC Study. The AnTIC Study is a multicentre randomised control trial assessing the benefits of prophylactic antibiotics to treat recurrent urinary tract infections.

Her focus now is on Infant Feeding and Nutrition and now works in collaboration with Edinburgh Napier University and University of Stirling as a Research Midwife. She is also a member of University of Stirling Maternal Health Behaviour Change Research Group and the Cochrane Collaboration.

Nicola began studying for a Masters in Health Research at the University of Stirling in 2016.

Before joining the unit, Nicola worked as a Midwife for NHS Greater Glasgow and Clyde and gained a BSc in Midwifery from the University of the West of Scotland. Nicola's interests are mixed methods research and complex interventions in women's health.



Goodman, Kirsteen, BSc (Hons) PhD

Kirsteen joined NMAHP in 2014 to manage the AMBER study (Abdominal massage for NBD in people with MS). She is involved in the units Trial Management Group which aims to provide knowledge/training in trial procedures. Kirsteen teaches and facilitates workshops at the annual Edinburgh Clinical Trials Management Course, periodically works as a tutor for the online Clinical Trials Masters course (University of Edinburgh) and collaborates on Trial Forge projects. Prior to NMAHP, Kirsteen worked for 7 years as a Trial Manager in the Edinburgh Clinical Trials Unit (ECTU). She started in ECTU in its infancy and was involved in setting up trial processes and training staff to help obtain the units accreditation. Her role developed to managing a portfolio of clinical trials mostly in the musculoskeletal and cardiovascular field. Kirsteen completed her clinical PhD in 2007 which involved developing a new bio-magnetic imaging device to study drug transit through the gut. Pre-clinical experience was gained when she worked in Quintiles as a research scientist and study director undertaking research in the respiratory and inflammation field after obtaining an honours degree in Pharmacology from Glasgow University.



Hagen, Suzanne, BSc, MSc, Csci, Cstat, PhD

Suzanne is a researcher with an international reputation in systematic reviewing, trials and outcome measure development, particularly in relation to the interventions provided by nurses and allied health professionals. She has a long-standing interest in the conservative management of pelvic floor disorders such as incontinence and pelvic organ prolapse. Her research experience has been gained over almost 30 years working in the NHS and academia as a statistician and health services researcher. Suzanne joined the NMAHP Research Unit in 1996. She is Deputy Director at the Glasgow Caledonian University (GCU) site (2012), Director of the Unit's Interventions Programme (2001), and Professor of Health Services Research (2009). Her PhD on the clinical application of repeated measures statistical models was gained at GCU in 2006. Her two previous two posts were as statistician at Ayrshire and Arran Health Board (1994-1996) and the Institute for Occupational Medicine (1990-1994). Whilst working at the Health Services Research Unit, Aberdeen University (1988-1990), Suzanne undertook an MSc, analysing day surgery practice statistics in Scotland, and graduating in 1993. Her first degree was in Mathematical Sciences, graduating from the University of Paisley.



Harris, Fiona, MA (Hons), PhD

Fiona joined the Unit in June 2009 as a research fellow and is currently an Associate Professor. She leads and/or collaborates on research grants related to living with long term conditions and also innovations in services, systems and roles. She has an interest in developing methodological innovations in evaluating complex interventions, particularly in applying theory-driven approaches to process evaluations and in nesting qualitative research within trials. She has particular expertise in qualitative research methods and their application to understanding outcomes in complex interventions. Her most recent work explores innovations in service delivery that address the complex care needs and challenges to self care for those living with multimorbidity. Fiona's other significant roles include being an Academic Editor of PLoS ONE and Programme Director of the MRes in Health Research at the University of Stirling. Fiona has an MA (Hons) in Sociology and Social Anthropology from the University of Aberdeen and a PhD in Social Anthropology from the University of Edinburgh. Her work history ranges from international development consultancy in Southeast Asia to research related to healthcare delivery and organisation, patient and professional experience and she also contributes expertise in qualitative systematic reviewing to the Evidence Review Committee of Health Improvement Scotland.



Hazelton, Christine, BSc(Hons), MCOptom

Christine is a Research Fellow working within the Stroke rehabilitation team at the NMAHP Research Unit in Glasgow Caledonian University (GCU). Funded by GCU, her work focuses on the “Vision” workstream, within NMAHP, and in the University’s Stroke & Long Term Neurological Conditions research group. Her work explores both the impact of Stroke on the visual system, and the development of rehabilitation interventions that are effective for the Stroke survivor, and feasible to deliver in community settings. She has experience of a variety of research methodologies including quantitative n-of-1 designs, surveys and Cochrane reviews, plus qualitative interviews and framework analysis techniques. Prior to this Christine was a Stroke Association Junior Research and Training Fellow. In this post she completed a PhD project into scanning training, a rehabilitation method for post-Stroke visual impairment, based on training more effective and efficient eye movements. This work provided new understanding of the mechanisms by which this training appears to work, as well as providing unique evidence of intervention feasibility. Christine’s clinical background is as an optometrist: she trained at the University of Ulster and continues to work clinically in high street practice.



Hibberd, Carina, BSc(Hons), PhD

Carina has spent several years working with mental health and well-being, social inequalities and their association with physical well-being. This has involved working within neurology and oncology in secondary care and with cardiovascular and diabetes in primary care. Her original PhD explored the molecular, physiological and behavioural/affect effects of the stress hormone corticosterone upon the ageing brain. Currently she is: investigating patient experience of care (including evaluations of NHS strategies to improve care); developing and evaluating the Person Centred Assessment Method (PCAM) in primary care; developing and evaluating a neuro-rehabilitation person centred outcomes system (NROMS); evaluating a new model of care for complex psychological trauma. In terms of methodology, Carina has experience working with national surveys and RCTs of complex interventions. More recently she worked with realist evaluations of NHS services and training. This has involved both quantitative and qualitative methods, the development of questionnaires, database design and management, working with NHS datasets and project management.



Hoddinott, Pat, BSc, MB BS, DCH, DRCOG, FRCGP, MPhil, PhD

Pat holds a Chair in Primary Care and joined the Nursing Midwifery and Allied Health Professions (NMAHP) Research Unit in 2012. Her research focuses on preventative interventions. She applies mixed method approaches to the design and delivery of complex intervention trials which support people to adopt and sustain behaviours which improve health and wellbeing. She has gained an international recognition particularly for her work on breastfeeding, incentives for behaviour change and how qualitative research methods are applied in randomised controlled trials. Her research aims to address health inequalities and applies ecological approaches to understanding behaviour. She sits on the NIHR-HTA Commissioning Board and is on the Editorial Board of Pilot and Feasibility Studies Journal.

Until 1998 Pat worked as a GP and GP trainer in the East End of London where she was actively involved in GP Obstetrics and Maternity Services commissioning. After undertaking an MPhil at Cardiff University on infant feeding decision making, she moved to Aberdeenshire. Between 2004 and 2012 she worked half time as a rural GP principal and at The University of Aberdeen, latterly in the Health Services Research Unit. Her PhD investigated group based interventions to support breastfeeding. She held a Chief Scientist Office Primary Care Career Award and has twice won the RCGP/Boots research paper of the year award.



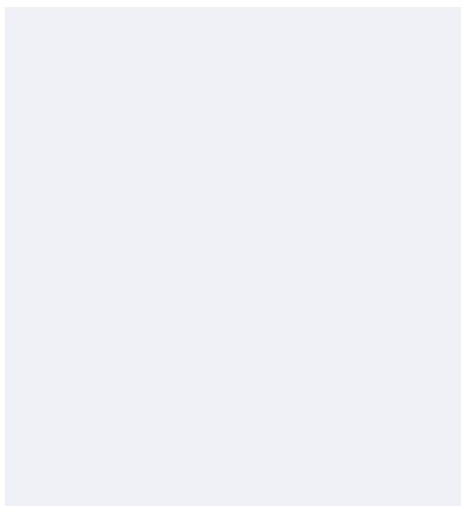
Hoskins, Gaylor, BSc Nursing (Commendation), MSc (Res), PhD

Gaylor joined the NMAHP Research Unit in 2012 as a Senior Clinical Academic Research Fellow. She is currently Capacity & Capability Manager for a Chief Nursing Office (CNO) scheme to support and develop the clinical academic careers of nurses, midwives and allied health professionals in Scotland. Her recent research activity has focused on self-management and health behaviour change for people with asthma and cystic fibrosis. Additional roles include project advisor as well as acting as a mentor both to research colleagues and for undergraduate nursing students. She is also a member of the University Non Invasive Clinical Ethics Committee. Before joining the NMAHP-RU she was a research fellow in the department of primary care at the University of Dundee. Her research focused on the management of respiratory conditions, in particular asthma, and a 5 year Primary Care Clinical Research Career Award from the Chief Scientist Office Scotland in 2006 culminated in the award of her PhD in 2010. In Dundee she was not only involved in setting up and running asthma and health promotion clinics but during her 5 year CSO fellowship she was seconded to the long term conditions team in G&NEF Community Health Partnership as a respiratory specialist nurse. During this time she was also a co-tutor on the primary care component of the undergraduate medical student programme.



Hunter, Suzannah, BA (Hons)

Suzannah graduated from the Strathclyde Business School at Strathclyde University with a BA (Hons) Tourism in 1999. Since then she has worked in Glasgow in the fields of Hospitality Management, Recruitment (Project Consultant) and Advertising (PA/Office Manager). She moved to Dunblane in 2013 and joined NMAHP RU as a part time Administrative Assistant in April 2015.



John, Alex

Alexandra John is a Speech and Language Therapist and researcher with an interest in outcomes of therapy intervention. She is based in NHS Tayside and is currently part of a team on the LOTUS Study. This is a feasibility RCT investigating the effect of wearing a Dynamic Lycra Orthosis on the upper limb has on upper limb recovery post Stroke.

Dr John has held research posts at the University of Dundee, University of Sheffield and at University College London. Dr John is a co-author of 's areas of Therapy Outcome Measures for Allied Health Professionals, and the Cleft Palate Audit Tool for Speech Augmented and a co-author on Shining a Light and investigation into the use of Augmentative and Alternative Communication in the UK. She also completes a consultancy for SSAFA as a Speech and Language Therapist.

Dr John is a registered with the Health Professionals Council and is a member of the Royal College of Speech & Language Therapists.



Kerr, Lorna

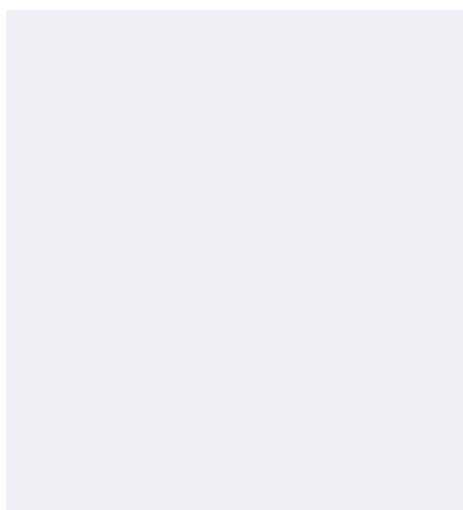
Lorna joined the Unit in 2012 as Unit Manager. Before joining the Unit Lorna was Assistant School Manager in the School of Nursing, Midwifery and Health at Stirling University and previous to that, the Administrator for the Alliance for Self Care Research. Lorna works in both Unit sites at GCU and Stirling University and is responsible for leading the administrative support team. Lorna gained her MBA in 2007 and has worked within the Higher Education sector for over 10 years.



King, Emma, BSc(Hons), MA, MSc(Res), PhD.

Emma is currently Research Fellow on the SKIP-IT project, which aims to support pregnant women to give up smoking by using a narrative text-messaging intervention. Emma's previous role at NMAHP-RU was on the Swallowing Interventions Package (SiP) project, which looked at the feasibility of delivering a swallowing exercise regime to patients receiving radiotherapy treatment for head and neck cancer.

Previously she worked at the University of Edinburgh, looking at public reactions to the development of cultured red blood cells for transfusion. Her PhD (2013) was also based on cultured red blood cells, in partnership with the Scottish National Blood Transfusion Service (SNBTS) and the Scottish Stem Cell Network. She has an MSc(Res) in Science and Technology Studies from the University of Edinburgh, and an MA in Social Research specialising in Health, the Body, and Medical Technologies from the University of York. Emma's undergraduate degree was in Genetics at the University of York.



Loudon, Kirsty, PhD MPH RGN BN BSc(Hons)

Kirsty joined the NMAHP Research Unit in October 2015 as an impact postdoctoral research fellow at the University of Stirling. She is interested in improving the transparency of decision making in trial design and producing more relevant research results to help patients, health care professionals and policymakers. She graduated from the University of Dundee in June, 2016 with an M.Phil after submitting an MRC funded thesis: "Making trials matter: providing an empirical basis for the selection of pragmatic design choices in clinical trials". This involved developing PRECIS-2 which has a website and database www.PRECIS-2.org which she administers. She was actively involved in the EU 7th Framework DECIDE (Developing and Evaluating Communication Strategies to Support Informed Decisions and Practice Based on Evidence) project Work Package 3 Patient and public focussed strategies for communicating evidence-based recommendations. Kirsty has a degree in nursing from the University of Glasgow, and worked in the Glasgow Spinal Injuries Unit before moving to live in Atlanta, USA (2 years) studying for a MPH at Emory University. She then worked at the Norwegian Branch of the Nordic Cochrane Collaboration in Oslo, Norway (7 years) focussing on the Methodology of undertaking Cochrane systematic reviews of interventions. On return to the UK, she joined the UK Cochrane Centre for 2 years researching the methodology for updating Cochrane reviews.



Maxwell, Margaret, MA(Hons), PhD

Margaret was appointed as Director of the NMAHP RU in December 2016, where she was Deputy Director from 2009 with lead responsibility for the Unit's Quality and Delivery of Care Programme, as well as continuing to develop primary care mental health research. From 2006-2011 she was Director of the Scottish Government funded Scottish Primary Care Mental Health Research and Development Programme whilst based at University of Edinburgh and then University of Stirling. This programme took forward her early work established under a joint CSO/SHEFC funded senior research fellow post (2003-2006) to develop research in primary care mental health. Prior to this she spent just over 10 years as a primary care/health services researcher within General Practice at the University of Edinburgh researching quality of care in general practice consultations and developing consultation outcome measures. Her research career began within the NHS in Scotland in the Information and Statistics Division of the (then) Common Services Agency, gaining a good understanding of healthcare datasets and developing research based skills including.



McClurg, Doreen, PhD MCSP

Doreen joined NMAHP RU in 2008 as a Research Fellow. She worked for many years as a physiotherapist with a special interest in pelvic floor dysfunction and was awarded a PhD by the University of Ulster in 2006. Her Thesis was entitled 'Urinary dysfunction in people with Multiple Sclerosis'. Research interests are related to bladder, bowel and pelvic floor dysfunction focussing on the neurogenic population, catheters usage, and prolapse. Primary area of research expertise is securing funding for and then managing large randomised controlled trials to provide clinically relevant information. For example, the 'AMBER' study was a National Institute for Health Research (Health Technology Assessment Program: HTA) funded randomised controlled trial which recruited 200 participants looking at the effectiveness of abdominal massage for the relief of constipation in people with MS. Doreen is the Chair of the Physiotherapy Committee of the International Continence Society, and is involved with committees such as the West of Scotland ethics committee, National Institute Clinical Effectiveness Guideline Development Group for Urinary Incontinence and Prolapse, HTA grant reviewer, MS Society Grant Panel member.



McDonald, Matthew, BSc (Hons), MSc.

Matthew is a full-time Research Assistant on a mixed methods NIHR funded Men's Weight loss project. His role is diverse and includes engaging with communities, recruiting participants, data collection and analysis.

He completed an MSc degree at Glasgow University in Human Nutrition with Public Health Nutrition Specialisation in August 2016. As a part of this degree, the research project Matthew completed involved a trip to Ghana to collect data for a cross-sectional investigation examining links between risk factors of malnutrition and infant nutritional status. Prior to and during the MSc he worked as a Community Health Improvement Assistant for both NHS Forth Valley and a voluntary sector organisation called Clackmannanshire Healthier Lives. This role involved engaging with 'deprived' communities to help reduce health inequalities through work which included weight management, maternal & infant nutrition, nutrition education and skills development.

Matthew graduated in 2012 from Aberdeen University with a degree in Sport & Exercise Science. His interests are broadly related to nutrition and public health; including health inequalities, malnutrition, community engagement and obesity & weight management.



Morris, Jacqui

Jacqui is a physiotherapist by professional background and has worked in a clinical academic role as a senior research fellow in the Social Dimensions of Health Institute at Dundee University, and as Research Lead for the Allied Health Professions in NHS Tayside.

Her research interests are in Stroke rehabilitation and recovery, with particular interests in upper limb rehabilitation and promotion of physical activity after Stroke and with older people. More recently she has been working in the field of evidence implementation in practice with the Allied Health Professionals, and also as a core researcher within the Scottish Implementation Science Collaborating Centre.



Nicoll, Avril, BSc (Hons), MRes, FRCSLT

Avril is a Research Fellow with NMAHP-RU on the PD COMM trial of NHS speech and language therapy interventions for people with Parkinson's disease. She joined the Unit in October 2013 as a PhD student funded by the Economic and Social Research Council and is writing up her thesis: 'Speech and language therapy in practice: a critical realist account of how and why speech and language therapists in community settings in Scotland have changed their intervention for children with speech sound disorder'.

After completing an MRes (Health) at Stirling University in 2012, Avril worked as a research assistant on implementation studies involving nurses, youth workers and police officers. Having published and edited *Speech & Language Therapy in Practice* magazine from 1997-2011, she was elected as a Fellow of the Royal College of Speech and Language Therapists in recognition that this work was of 'special value to the profession'. Avril's interest in implementation / practice change also developed over the years through experience as a user representative at the award-winning Montrose Community Maternity Unit from 2000. After qualifying as a speech and language therapist from Jordanhill College in 1988, she worked as a community generalist in NHS clinical practice in Dundee and Aberdeenshire until 2002.



Pollock, Alex, PhD

Alex is a core-funded Senior Research Fellow, having joined the NMAHP Research Unit in 2008. Alex has particular expertise relating to systematic reviews of complex interventions, leading methodological work, completing and supporting systematic reviews across the Unit. She is an associate editor with the Cochrane Stroke Group and an author on 11 Cochrane systematic reviews and 2 Cochrane overviews. She has published work relating to the use of GRADE in overviews, and instigated and co-leads an international GRADE overviews project group. Alex has an active interest in public involvement in research, and has led and contributed to a number of research prioritisation projects, including two with the James Lind Alliance (JLA). She leads the ACTIVE project, funded by Cochrane Training, aimed at supporting review authors have meaningful involvement of patients and the public in systematic reviews. Prior to joining NMAHP Research Unit, Alex spent 10 years (1998-2008) working with Professor Peter Langhorne, carrying out Cochrane systematic reviews of complex Stroke rehabilitation interventions and promoting evidence-based practice to allied health professionals working in Stroke rehabilitation. She was awarded her PhD in 1998, having carried out a small randomised controlled trial exploring the effectiveness of different approaches to physiotherapy for people with Stroke, after originally qualifying as a Chartered Physiotherapist in 1993.



Rousseau, Nikki, PhD, BA (Hons)

Nikki joined NMAHP-RU in January 2017 as research fellow on the INDEX study (IdentifyiNg and assessing different approaches to DEveloping compleX interventions). INDEX is a collaboration between Stirling, Sheffield, Southampton, Oxford and Bristol universities and is funded by the MRC – the Stirling team, headed by Edward Duncan and Pat Hoddinott, are leading the qualitative and Delphi workpackages. Nikki is an experienced health services researcher, with a particular interest in the application of mixed methods in health technology assessment. She continues to work at Newcastle University alongside INDEX, where she applies her expertise in mixed methods as a co-applicant on several funded NIHR HTA trials (TUBE; NATTINA; NAIROS; LITEFORM) and is also Deputy Director for the NIHR RDS NE, advising applicants for research funding on research design and grantsmanship,

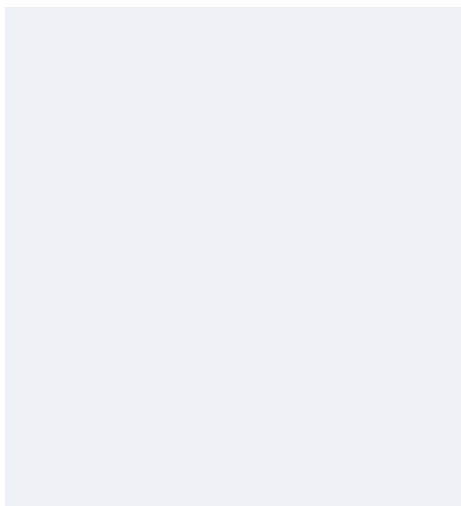


Scobbie, Lesley, BSc OT, MSc Health Psychology, PhD

Lesley is a Stroke Association Clinical Lecturer whose research focuses on optimising Stroke survivor recovery through effective goal setting practice in community based rehabilitation settings. Lesley's academic work is hosted within the NMAHP Research Unit in Glasgow Caledonian University. She also has a clinical role as a highly specialist occupational therapist within a community rehabilitation team in NHS Forth Valley.

Lesley has developed a goal setting and action planning (G-AP) framework to guide goal setting practice in community based Stroke rehabilitation settings. She has experience of a variety of research methodologies including systematic reviews, surveys, qualitative interviews/ focus groups and framework analysis techniques. The planned research programme within her Stroke Association Clinical Lectureship includes development of resources and training to support the implementation of G-AP in practice and an evaluation of its clinical and cost effectiveness in community Stroke rehabilitation settings.

Supported by a Chief Scientist Office doctoral training fellowship, Lesley completed her PhD in 2015 entitled, "The development and initial evaluation of a goal setting and action planning framework for use in community based Stroke rehabilitation". Prior to that, she completed an MSc in Psychology and Health and worked as an occupational therapist in a variety of Stroke rehabilitation settings in both the UK and USA.



Semple, Karen, BSc (Hons) Prosthetics and Orthotics, PhD

Since April 2016 Karen has been working as project manager and research fellow on an NIHR funded study, PROPEL. This project is designed to evaluate the implementation of individualised Pelvic Floor Muscle Training (PFMT) for women with pelvic organ prolapse across three diverse study sites. Prior to this Karen worked as a research fellow on a CSO funded audio visual intervention development and feasibility study, SCooP, aimed at increasing chest physiotherapy in young children with Cystic Fibrosis. She worked on this project while completing the write up of her PhD which was submitted in September 2015. Karen completed her PhD within the Unit titled 'Exploring decision making and patient involvement in prosthetic prescription'. She joined the NMAHP Research Unit in 2009 as a research assistant to work on the MIRAS, Mothers in Research Agenda Setting study, and later an evaluation of a Scottish Government initiative designed to normalise birth. Before joining the Unit Karen worked as a research assistant at the National Centre for Prosthetics and Orthotics (NCPO) where she worked on a number of orthotics related projects. This followed on from her undergraduate degree undertaken at the NCPO where she trained as a Prosthetist/Orthotist and graduated in 2008.



Sergenson, Nicole, BSc (Hons)

Nicole joined the NMAHP Research Unit in 2013 working as a data coordinator on the OPAL trial, a multicentre randomised trial of basic versus biofeedback-mediated intensive pelvic floor muscle training for female stress or mixed urinary incontinence. Before joining NMAHP she worked for the NHS as a trial coordinator on academic oncology trials and prior to this had various roles working for contract research organisations



Stanton, Karen

Karen first began working at the University of Stirling in 2000 as a Clerical Assistant, working for both the Scottish Network for Chronic Pain Research and the NMAHP Research Unit. In 2005 Karen became a full time Secretary with the NMAHP Research Unit, giving secretarial support to all Unit staff and managing the Director's diary.



Stewart, Kim, BA

Based at Glasgow Caledonian University, Kim joined NMAHP Research Unit in March 2008 where her role involves provision of administrative support to all Unit staff. In 2015, Kim graduated from Glasgow Caledonian University with a BA in Business and Management. Prior to being employed with NMAHP Research Unit, Kim worked with West Dunbartonshire Council Finance Department and Strathclyde Fire and Rescue Service gaining many years of experience in administrative roles.



Strachan, Heather, RGN, Dip N, MSc, FBCS, PGCert, PhD

Heather Strachan, a Research Fellow with NMAHP RU, is a nurse by background. Heather is currently undertaking a realistic evaluation of the implementation of Advanced Nurse Practitioners in Primary Care in Scotland. Her other research interests are in the measurement and improvement of person centred healthcare and caring behaviours, nursing sensitive indicators, and eHealth. Heather has held a variety of posts in eHealth, research, management, quality improvement and health-care governance in the NHS, Government and Academia. Heather has over 30 years' experience in eHealth, most recently as Clinical eHealth Lead (Nursing, Midwifery and Allied Health Professions) in the Scottish Government. She has spoken nationally and internationally, publishing many articles and book chapters on the subject. Heather has a PhD from Glasgow Caledonian University, a Masters in Information Science from London's City University; she is a Fellow of the British Computer Society, a Senior Member of the International Medical Informatics Association and an Honorary Member of their Nursing Informatics Group.



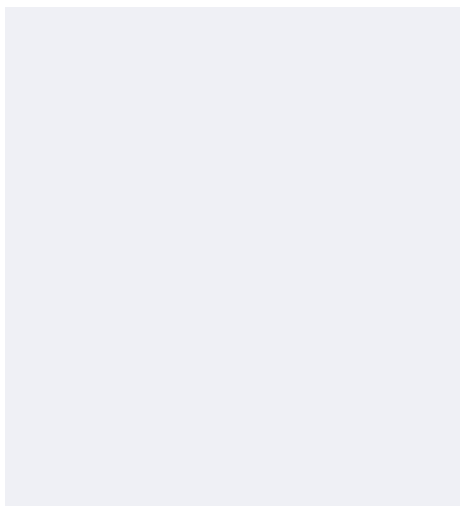
Stratton, Susan, BSc, RGN, EN

Susan joined the NMAHP Research Unit in 2013 and is working as the Trial Manager for the OPAL trial, a multicentre randomised trial of basic versus biofeedback-mediated intensive pelvic floor muscle training for female stress or mixed urinary incontinence, based at GCU.

Prior to working at GCU Susan led the Scottish Audit of Surgical Mortality as the National Clinical Coordinator, National Services Scotland, NHS.

Working with the University of Edinburgh, Psychological Medicine Research department, Susan managed a large CRUK funded trial for patients with cancer and depression, recruiting 500 patients to SMaRT 2 and 200 patients to the SMaRT 3 trial. Susan has also worked for various contract research organisations, as a Research Nurse working on multiple commercial clinical trials involving all therapeutic areas, recruiting patients in primary and secondary care.

Susan has an extensive and varied nursing background including working as Practitioner in HM Prisons, where she completed a BSC Nursing, focusing on drug abuse and addiction.



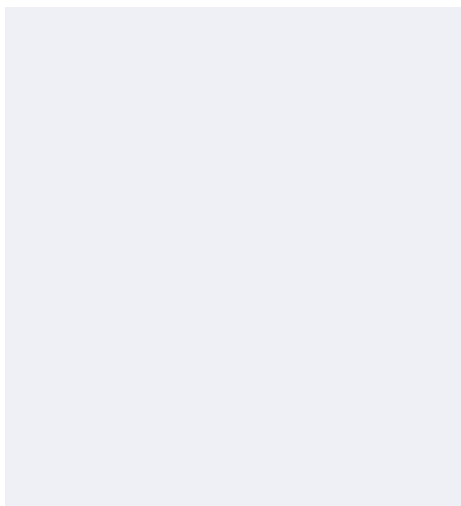
Torrens, Claire, BA(Hons) MSc.

A BABCP accredited Cognitive Behavioural Psychotherapist, Claire initially studied psychology at Strathclyde University graduating in 2001 followed by an MSc Health Psychology in 2004 from the University of the West of England. She previously worked in a number of different research and evaluation roles within the public sector, including development of a weight management programme within the NHS and coordination of a domestic abuse group-work programme in social care services. Claire joined the NMAHP Research Unit as a researcher in 2014 working on the Neuro-rehabilitation Outcomes Management System (NROMS) a part of the Scottish Government funded Scottish Person Centredness Intervention Collaboration (ScoPIC) within NHS Fife,. Since then she has worked on a number of systematic reviews in child and adolescent health and wellbeing, cancer nursing and more recently podiatry interventions in older people.



Uny, Isabelle, MSc, PhD

Isabelle is a social scientist and qualitative health researcher. She is currently working at the Unit as a Research Assistant on the PROPEL project. She just obtained her PhD at Queen Margaret University's Institute for Global Health and Development, and her thesis is entitled "Weighing the options for delivery care in rural Malawi: community actors' perceptions of the 2007 Policy Guidelines and redefined traditional birth attendants roles". The study was a grounded theory focusing on a recent policy promoting skilled birth attendants and banning the use of TBAs for deliveries in rural areas. This study used interviews and focus groups to explore community actors' perceptions of this policy and of how it affected the decisions and actions of rural women regarding their delivery care today. Isa joined the Unit in 2015 as a Research Fellow on the eMERGE Project (Developing a meta-ethnography reporting Guidance). Prior to this, she worked as a programmes' officer for various international development organisations, including the UK National Commission for UNESCO. Isa has extensive expertise in qualitative methods and analysis as well as knowledge of qualitative evidence synthesis (especially meta-ethnography). Isa's area of expertise is in maternal and reproductive health and she is particularly interested in issues surrounding quality of care, rights, social relationships and health behaviours, and community engagement in health.



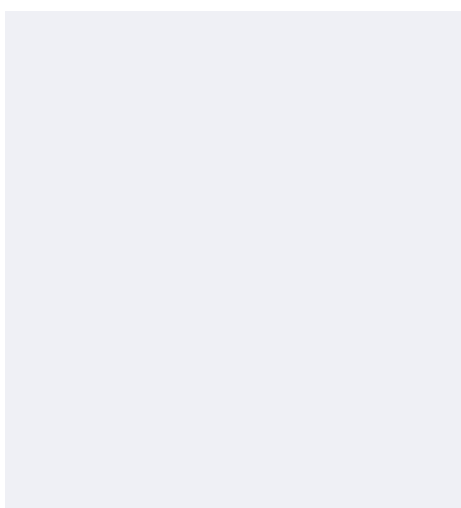
VandenBerg, Kathryn

Kathryn joined the Research Unit in January 2014. She is based at Glasgow Caledonian University and provides administrative assistance to the COST funded project, 'Collaboration in Aphasia Trialists' (CATs). Kathryn's academic interests include evolutionary psychology and language development. She has worked as a project manager and administrator for a number of public and third sector initiatives tackling health and inequality issues.



Vost, Catherine, MA (Hons)

Catherine joined the NMAHP Research Unit at GCU as a part time Administrative Assistant in April 2016. Catherine graduated from the University of Glasgow with a MA (Hons). Before joining the Unit, Catherine has over twenty years administrative experience within a Higher Education environment working at both University of Glasgow and Strathclyde University covering a diverse range of administrative duties.



Wane, Sarah, PhD, MSc.

Sarah is employed as a research assistant on the PROPEL study, an NIHR funded Women's Health physiotherapy implementation study using realistic evaluation. She joined the NMAHP Research Unit after working as a rotational physiotherapist in Derby that included completing a rotation in women's health. An interest in physical activity and health and a wish for increasing her understanding of the role of physical activity within healthcare was Sarah's original motivation to complete her MSc in Physiotherapy that she undertook at the University of East Anglia. Prior to her MSc, she worked in different research settings and her interest in physical activity and health led to her completing a PhD in the area. Sarah was awarded two concurrent, international scholarships to complete her PhD entitled 'Young women and weight gain: The role of patterns of physical activity and sedentary behaviour in metabolic health, in 2012 at the University of Queensland, Australia.



Wells, Mary, PhD RGN MSc BSc (Hons)

Mary joined the Unit in 2013 as Professor of Cancer Nursing Research and Practice. Her current research focusses on living with and beyond cancer, and she is actively involved in the European Oncology Nursing Society, Macmillan Consequences of Cancer Treatment Collaborative and NCRI Psychosocial Oncology and Survivorship Clinical Studies Group. She trained as a general nurse at Guys Hospital and South Bank University, graduating in 1988, before specialising in head and neck surgery and oncology. In the early 90's she became a Ward Sister and then Senior Nurse in Oncology at St Bartholomew's Hospital, London. Having completed a Master's Degree at the Institute of Cancer Research in 1995, she then held a number of joint clinical academic posts in Oxford, London and Dundee. In 2003, she was seconded to set up and head the new Maggie's Cancer Caring Centre in Dundee. From 2009, she worked as a Senior Lecturer at the University of Dundee, developing her experience in health services research related to understanding and improving patients' experiences and outcomes in cancer care, nurse-led initiatives and evaluating complex interventions.



Williams, Louise, BA (Hons, 1st Class), MRes, PhD.

Louise joined the NMAHP Research Unit in January 2016 as Research Fellow on the RELEASE project which is investigating the natural history of language recovery following Stroke related aphasia and aims to better understand the predictors of language recovery and rehabilitation in people with post Stroke aphasia. Prior to her arrival at the Unit Louise was commissioned by The Stroke Association to assess the effectiveness of a government funded training scheme for people working with those at higher risk of Stroke. This project was undertaken as Louise was concluding her PhD at the University of Strathclyde. For her PhD she tested the theories of ageing which predict a reduction in hemispheric asymmetry in older adulthood. To investigate this she devised and conducted a programme of experiments using eye tracking technology to investigate lateral biases of attention and perception in older and younger adults during face processing. In addition to her PhD, Louise gained a Masters in Research Methods and first class honours degree, all in psychology at the University of Strathclyde.

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

NMAHP Research Unit Led Grants (01/01/10 to 31/05/17) Interventions Programme

Project Summary Code	Project Title	Funding Body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (UOS) Allocation
PVH03.1	Feasibility of abdominal massage for the alleviation of symptoms in people with Parkinson's Disease	Parkinson's Disease Society	McClurg, Doreen	Hagen S	12/01/2010	33,576.00	33,576.00	0.00
PVH01.1	(Phase III) Multicentre randomised controlled trial of pelvic floor muscle training to prevent pelvic organ prolapse in women (PREVPROL)	Wellbeing of Women	Hagen, Suzanne	McClurg D	05/02/2010	148,000.00	148,000.00	0.00
PVH01.2	Surgery and physiotherapy for prolapse to avoid recurrence: a feasibility study	Physiotherapy Research Foundation	McClurg, Doreen	Hagen S	26/03/2010	65,518.00	65,518.00	0.00
Stroke01.11	Improving stroke clinical trial design and conduct through investigations using a clinical trials resource	Chief Scientist Office, PhD Fellowship	Ali, Myzoon	Brady M	01/08/2010	173,551.00	173,551.00	0.00
MCH03.1	Development of a theory and evidence informed intervention to promote smoking cessation during pregnancy using narrative, text-messages and images as modes of delivery	University of Stirling	Williams, Brian	Cheyne H	01/03/2011	53,555.00	0.00	53,555.00
Stroke03.2	Visual scanning training interventions for people with visual field loss after stroke	The Stroke Association Research Training Fellowship	Pollock, Alex	Brady M	15/03/2011	105,000.00	105,000.00	0.00
LTCM03.1	(Phase I) Development of interventions to increase physical activity among inactive young people with long-term conditions: MRC complex intervention framework phase 1 using asthma as an exemplar	Chief Scientist Office	Williams, Brian	Hagen S	31/05/2011	224,118.00	0.00	108,415.00
LTCM03.2	(Phase II) Can eliciting and addressing health-related goals improve asthma control and asthma-related quality of life? Feasibility Phase II pilot randomised controlled trial of a brief intervention	Chief Scientist Office	Hoskins, Gaylor	Duncan E, Williams B	01/02/2012	144,528.00	0.00	110,694.00
Stroke02.3	(Phase IV) Physical rehabilitation treatment approaches following stroke: Cochrane systematic review of the evidence (SPRUCE)	Chief Scientist Office	Pollock, Alex		13/03/2012	53,391.00	47,858.00	0.00
PVH02.4	(Phase III) Multicentre randomised trial of the effectiveness and cost-effectiveness of basic versus biofeedback-mediated intensive pelvic floor muscle training for female stress or mixed urinary incontinence (OPAL-Optimal PFMT for Adherence Long-term)	NIHR HTA	Hagen, Suzanne	Elders A, McClurg D	14/08/2012	2,074,492.00	1,201,670.00	0.00
LTCM01.1	(Phase II) A feasibility study for a trial of Recovery versus Mindfulness models for Depression (ReMoDe)	Chief Scientist Office	Maxwell, Margaret	Dougall N	27/08/2012	224,995.00	0.00	201,114.00
HBC02.1	Benefits of incentives for breastfeeding and smoking cessation. A platform study for a trial. (BIBS)	NIHR HTA	Hoddinott, Pat		01/10/2012	316,807.00	0.00	9,900.00
M01.7	Methods and strategies for the development of optimised complex health interventions: exploring existing and potential new approaches	Glasgow Caledonian University	Hagen, Suzanne	Wells M	01/10/2012	58,000.00	58,000.00	0.00
Stroke01.2	Collaboration of Aphasia Trialists (CATs)	COST (European Cooperation in Science and Technology)	Brady, Marian	Ali M	22/11/2012	464,848.00	464,848.00	0.00
Stroke04.2	(Phase II) A multi-centred, stepped wedge, cluster randomised controlled trial to compare the clinical and cost effectiveness of a complex oral health care in stroke settings: a phase II pilot trial (SOCLE)	The Stroke Association	Brady, Marian	Pollock A	25/01/2013	163,008.00	163,008.00	0.00
PVH03.2	Abdominal massage for neurogenic bowel dysfunction in people with MS and spinal cord injury (AMBER)	HTA	McClurg, Doreen	Hagen S, Harris F	23/05/2013	904,675.00	741,762.00	0.00
Stroke04.2	(Phase II) Specialist oral health care training: a STARS Module	Scottish Government	Brady, Marian	Pollock A	31/07/2013	6,650.00	6,650.00	0.00
Stroke01.12	Hearing after stroke	Forth Valley Sensory Centre	Pollock, Alex	Brady M, Campbell P	13/08/2013	22,823.00	22,823.00	0.00

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

Project Summary Code	Project Title	Funding Body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (UOS) Allocation
LTCM02.1	(Phase I/II) Improving quality of life and swallowing function in patients with head and neck cancer: development and feasibility of a swallowing intervention package (SIP)	Chief Scientist Office	Wells, Mary	Dougall N, Cowie J	10/09/2013	200,875.00	0.00	200,875.00
LTCM03.3	(Phase I and II) Development of interventions to reduce patient delay with symptoms of acute coronary syndrome: identifying optimal content and mode of delivery	Chief Scientist Office	Farquharson, Barbara	Williams B, Dougall N	21/01/2014	221,668.00	0.00	158,204.00
LTCM03.4	(Phase I and II) Development of an intervention to increase physiotherapy adherence among young children with cystic fibrosis: a Medical Research Council complex intervention framework development and feasibility study. (SCoOP - Supporting children's physiotherapy for cystic fibrosis)	Chief Scientist Office	France, Emma	Williams B, Hagen S, Hoskins G	13/02/2014	132,194.00	391.00	94,568.00
LTCM01.2	(Phase II) Patient Centred Assessment Method (PCAM): improving nurse led biopsychosocial assessment of patients with long term conditions and co-morbid mental health needs	NIHR	Maxwell, Margaret	Dougall N, Hibberd C	17/03/2014	278,053.00	0.00	200,000.00
Stroke02.4	Development of the Standardisation of Measurements in Arm Rehabilitation (SMART) toolbox	Glasgow Caledonian University	Ali, Myzoon	Pollok A	30/06/2014	58,000.00	58,000	0.00
Stroke02.13	LYCRA. Lycra orthosis for therapy in upper limb Rehabilitation after Stroke: The LOTUS Study	Chief Scientist Office	Morris, Jacqui		25/07/2014	246,182.00	141,554.00	0.00
Stroke03.1	(Phase IV) Visual scanning training after stroke: dissemination to facilitate translation of evidence into practice	Stroke Improvement Fund	Pollock, Alex	Brady M	24/10/2014	6,594.00	6,594.00	0.00
PVH02.7	(Phase I) Identifying messages for physiotherapists treating female urinary incontinence: a Cochrane overview of the evidence	Physiotherapy Research Foundation	McClurg, Doreen	Campbell P, Elders A, Hagen S, Pollock A	12/02/2015	51,304.00	51,304.00	0.00
PVH01.5	(Phase I) Making pessary care for prolapse woman-centred and evidence-based	Glasgow Caledonian University	Hagen, Suzanne	Pollock A, McClurg C	26/02/2015	58,000.00	58,000.00	0.00
Stroke02.10	(Phase I, II, III) Optimising stroke survivor recovery through effective goal setting practice in community based rehabilitation settings: implementing research to enhance practice and improve outcomes	The Stroke Association UK Lectureship Programme	Scobbie, Lesley	Brady M, Morris J	12/04/2015	173,530.00	173,530.00	0.00
MCH01.1	(Phase I) The development and initial validation of a screening scale for antenatal anxiety	Chief Scientist Office	Cheyne, Helen	Maxwell M	01/06/2015	119,922.00	0.00	119,922.00
Stroke02.4	Development of the Standardisation of Measurements in Arm Rehabilitation (SMART) toolbox	Chest Heart & Stroke Scotland	Ali, Myzoon	Duncan Millar J, Pollok A	06/07/2015	3,954.00	3,954.00	0.00
HBC01.1	(Phase II) Feasibility study of how best to engage obese men in narrative SMS (short message system) and incentive interventions for weight loss, to inform future effectiveness and cost-effectiveness trial	NIHR / PHR	Hoddinott, Pat and (Dombrowski S, University of Stirling)	Elders A, Grindle M	13/10/2015	490,970.00	1,175.00	240,793.00
M01.8	(Phase 1) ACTIVE - Authors and consumers together impacting of evidence	Cochrane Training and Innovation Fund	Pollock, Alex	Campbell P, Morris J	01/04/2016	14,877.00	14,877.00	0.00
ISSR02.12	(Phase I) ECCO Oncopolicy project - systematic review	European Oncology Nursing Society	Campbell, Pauline	Wells M	11/04/2016	22,488.00	22,488.00	0.00
PVH01.5	(Phase I) Making pessary use for pelvic organ prolapse woman-centred and evidence-based - a James Lind Alliance pessary priority setting partnership	Pelvic Obstetric and Gynaecological Physiotherapy Group	Hagen, Suzanne	McClurg D, Lough K	26/06/2016	2,000.00	2,000.00	0.00
PVH01.5	(Phase I) Mind the Gap - making pessary use for pelvic organ prolapse woman-centred and evidence-based - a James Lind Alliance pessary priority setting partnership	UKCS (UK Continence Society)	Hagen, Suzanne	McClurg D, Lough K	26/06/2016	5,000.00	5,000.00	0.00
HBC01.13 & MCH03.1	(Phase II) Promoting smoking cessation during pregnancy: a combined feasibility and pilot trial of a theory-based intervention using narrative, images and embedded behaviour change techniques, delivered via text-messaging	Chief Scientist Office	Cheyne, Helen	Elders A, Abhyankar P, Steele M, Williams B	26/07/2016	279,019.00	6,181.00	263,443.00
LTCM03.5	(Phase III) Podiatry interventions to reduce falls in older people - a systematic review	Chief Scientist Office	Morris, Jacqui	Campbell P, Frost H	03/01/2017	27,573.00	26,377.00	0.00

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

Project Summary Code	Project Title	Funding Body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (UOS) Allocation
Stroke 01.3	CATs Phase II	The Tavistock Trust for Aphasia	Brady, Marian	Ali M	08/02/2017	£confidential	0.00	0.00
Stroke 01.9	Peer support for people with aphasia following stroke	The Tavistock Trust for Aphasia	Brady, Marian	Vandenberg K, Ali M	08/02/2017	£confidential	0.00	0.00

NMAHP Research Unit Led Grants (01/01/10 to 31/05/17)

Quality and Delivery of Care Programme

Project Summary Code	Project Title	Funding Body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (Stirling) Allocation
LTCM02.4	An evaluation of the late effects clinic at the Beatson Cancer Centre, Glasgow	MacMillan Cancer Support	Harris, Fiona		01/07/2010	7,600.00	0.00	0.00
PVH02.1	A prospective exploration of the experiences and factors affecting the continuity of use of intermittent self-catheterisation in people with MS	Multiple Sclerosis Society	McClurg, Doreen	Hagen, S	09/08/2010	136,849.00	136,849.00	0.00
MCH02.1	Developing and implementing a decision support tool for redesign of postnatal care: PRAM	Scottish Government and Royal College of Midwives	Cheyne, Helen	Harris F	31/01/2011	170,000.00	0.00	112,494.00
LTCM03.8	(Phase I) Decision making in Prosthetics	SOTA Prosthetics Group	Cheyne, Helen	Maxwell M, Semple K	21/03/2011	10,000.00	0.00	10,000.00
Stroke02.9	Goal setting community based stroke rehabilitation: A feasibility and acceptability study of implementing a goal setting and action planning practice framework	Chief Scientist Office	Scobbie, Lesley	Duncan E, Brady M	01/05/2011	£107,832	0.00	£107,832
MCH02.8	Making a difference for mothers and babies: Midwifery Research in Scotland (Conference funding)	Scottish Government Chief Nursing Office	Cheyne, Helen		30/09/2011	8,500.00	0.00	8,500.00
ISSR02.9	(Phase IV) Evaluation of the Scottish Recovery Indicator tool	Scottish Recovery Network	Maxwell, Margaret		01/10/2011	30,000.00	0.00	30,000.00
ISSR02.1	(Phase III) The Scottish Person Centredness Intervention Collaboration (ScoPIC)	Scottish Government	Maxwell, Margaret	Duncan E, Hagen S, Hibberd C, Williams B	01/01/2012	977,116.00	207,116.00	409,675.00
MCH02.2	(Phase IV) Getting it Right for Every Child: a scoping study of the implementation of the GIRFEC practice model into Maternity Care	Scottish Government Health Directorates	Cheyne, Helen		31/01/2012	36,600.00	0.00	36,600.00
PPRC01.1	Clinical Academic Careers for Scotland	Scottish Government	Maxwell, Margaret	Cheyne H, Williams B	01/02/2012	1,500,000.00	536,183.00	778,134.00
ISSR02.6	(Phase IV) Evaluating the impact of mental health nursing initiatives in Scotland	Scottish Government	Maxwell, Margaret		01/02/2012	45,000.00	0.00	45,000.00
ISSR01.4	(Phase I) DELPHI Study into Mass Casualty Incident Equipment Requirements	Department of Health	Abhyankar, Purva	Duncan, E	01/05/2012	48,976.00	48,976.00	0.00
Stroke01.10	(Phase I) Long term consequences and recovery from stroke: what is important to stroke survivors and health professionals?	Chief Scientist Office PhD Fellowship	Davis, Bridget	Pollock A, Williams B	31/08/2012	115,047.00	115,047.00	0.00
MCH02.3	The Scottish National Midwifery Research Programme: supporting and informing Scottish maternity care policy	Scottish Government Chief Nursing Office	Cheyne, Helen	Abhyankar P, Williams B	01/09/2012	299,765.00	0.00	299,765.00
Stroke02.5	How can adherence diaries be optimised for use in home-based rehabilitation	Glasgow Caledonian University	Brady, Marian	McClurg D, Williams	01/10/2012	58,000	58,000	0.00
Stroke02.2	(Phase IV) A Cochrane overview of interventions to improve upper limb function after stroke (OSCAR)	Chief Scientist Office	Pollock, Alex	Brady M	23/10/2012	84,534.00	76,561.00	0.00
PPRC01.2	Carnegie Centenary Professorship	Carnegie Trust	Harris, Fiona		29/11/2012	40,000.00	0.00	40,000.00
ISSR02.10	(Phase IV) A theoretically informed exploration of practice change in speech and language therapy	ESRC	Nicholl, Avril	Williams B, Maxwell M	26/04/2013	54,780.00	0.00	54,780.00
LTCM02.5	(Phase I) Cancer diagnosis as an opportunity for increasing uptake of smoking cessation services among families: an exploratory study of patients, family members and health professional's views	Chief Scientist Office	Wells, Mary	Williams B	05/06/2013	161,149.00	0.00	153,069.00

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

Project Summary Code	Project Title	Funding Body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (Stirling) Allocation
MCH02.4	(Phase I) National Maternity Survey	Scottish Government	Cheyne, Helen		01/07/2013	105,065.00	0.00	105,065.00
M01.1	Developing meta-ethnography reporting guidelines and standards for research (eMERGE)	NIHR	France, Emma	Duncan E, Maxwell M	27/10/2014	298,450.00	0.00	222,535.00
Stroke02.8	(Phase 1) Recruitment to stroke rehabilitation trials	Glasgow Caledonian University	Brady, Marian		26/02/2015	58,000.00	58,000.00	0.00
ISSR01.3	(Phase I) Using record linkage analysis to inform the development of an improved care pathway(s) for psychiatric and self-harm emergencies currently transferred by ambulance to emergency departments	Chief Scientist Office Health Informatics Research Priority Grant	Duncan, Edward	Dougall N, Fitzpatrick D, Maxwell M	14/05/2015	30,000.00	0.00	30,000.00
Stroke01.4	(Phase I) Rehabilitation and recovery of people after stroke (RELEASE): utilising secondary data to enhance speech and language therapy interventions for people with aphasia after stroke	NIHR HS&DR Researcher Led	Brady, Marian	Ali M, Elders A	29/06/2015	446,158.00	446,158.00	0.00
MCH01.2	Aberlour Collaboration - Evaluation of Aberlour Perinatal Support Project	Aberlour Child Care Trust	Cheyne, Helen	Maxwell M, Calveley E	01/07/2015	9,985.00	0.00	9,985.00
PVH01.6	Prolapse and PFMT: implementing evidence locally - PROPEL	NIHR HS&DR Researcher Led	Maxwell, Margaret	Hagen S, Duncan E, Abhyankar P, Elders A, Calveley E	20/08/2015	583,217.00	96,395.00	462,430.00
MCH02.4	The Scottish maternity experience survey	Scottish Government	Cheyne, Helen		01/10/2015	9,990.00	0.00	9,900.00
ISSR01.3	Further analysis of record linkage to inform the development of an improved care pathway(s) for psychiatric and self-harm emergencies currently transferred by ambulance to emergency departments	Scottish Ambulance Service	Duncan, Edward	Fitzpatrick D	01/01/2016	3,510.00	0.00	3,510.00
ISSR01.1	A national prevalence survey of impaired awareness of hypoglycaemia in patients who have been attended by the Scottish Ambulance Service due to a severe hypoglycaemic event	Scottish Ambulance Service	Duncan, Edward	Dougall N	01/01/2016	3,021.00	0.00	3,021.00
LTCM02.6	Scottish cancer patient experience survey	Scottish Government and Macmillan Cancer Support	Wells, Mary		22/02/2016	13,500.00	0.00	13,500.00
ISSR02.4	Qualitative baseline evaluation of community hub pilots in NHS Fife and NHS Forth Valley	NHS Health Scotland	Harris, Fiona		01/03/2016	22,693.00	0.00	22,693.00
ISSR02.2	A qualitative evaluation of the Govan ship project	NHS Greater Glasgow and Clyde	Harris, Fiona	Maxwell M	04/03/2016	37,000.00	0.00	37,000.00
LTCM01.7	(Phase I and III) Is there anybody out there? An exploration of policy and practice in relation to addressing suicidality in children aged 15 years and under in Scotland.	ESRC Pathway Studentship	Maxwell, Margaret	Gilmour L	04/04/2016	55,000.00	0.00	55,000.00
MCH02.5	Achieving Seamless Services for Scotland's Children	Aberlour, NHS Forth Valley, Children in Scotland, Social Work Scotland, University of Stirling	Cheyne, Helen		01/05/2016	117,102.00	0.00	117,102.00
ISSR02.3	Evaluation of advanced nurse practitioner - primary care	Scottish School for Primary Care	Wells, Mary		01/02/2017	120,000.00	0.00	120,000.00

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

NMAHP Research Unit Collaborator on Grants (01/01/10 to 31/05/17).

Interventions Programme

Project Summary Code	Project Title	Funding body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (Stirling) Allocation
HBC01.2	Feasibility study for a weight loss intervention for women treated for breast cancer	CRANES and the University of Aberdeen Development Trust	Heys, S University of Aberdeen	Hoddinott, P	01/01/2010	78,000.00	0.00	0.00
ISSR02.5	Using "good goals" to improve children's occupational therapy services: a feasibility study of a randomised controlled caseload management intervention	Chief Scientist Office	Kolemainen, Niina University of Aberdeen	Duncan E	01/07/2010	70,396.00	0.00	0.00
Stroke01.14	Living with dysarthria: evaluation of the feasibility of the implementation of a group intervention programme for stroke patients and carers, addressing the impact of dysarthria	The Stroke Association	Mackenzie, C University of Strathclyde	Brady M	01/07/2010	54,293.00	0.00	0.00
MCH03.2	Antenatal physical activity: women's experiences and the acceptability of antenatal walking groups	Paths to Health	Shepherd, Ashley University of Stirling	Cheyne H	01/07/2010	2,000.00	0.00	0.00
HBC01.3	Reducing alcohol-related harm in disadvantaged men: development and feasibility assessment of a brief intervention delivered by mobile phone	NIHR	Crombie, I K University of Dundee	Williams B	01/07/2010	220,000.00	0.00	0.00
Stroke01.13	Fluoxetine or control unlocks stroke (FOCUS)	NIHR SRN / Scottish Stroke Research Network	Mead, Gillian University of Edinburgh	Brady M	01/07/2010	2,500.00	0.00	0.00
Stroke01.7	A family centred approach to the management of lifestyle risk factors for recurrent stroke	The Stroke Association Research Training Fellowship	Lawrence, Margaret Glasgow Caledonian University	Brady M	01/07/2010	139,989.00	0.00	0.00
Stroke03.3	(Phase II) A pilot RCT to compare the clinical and cost effectiveness of prism glasses, visual search training and standard care in patients with hemianopia following stroke	The Stroke Association	Rowe, Fiona University of Liverpool	Pollock A	15/07/2010	209,926.00	0.00	0.00
PVH02.2	(Phase II) Transcutaneous posterior tibial nerve stimulation as a conservative treatment for bladder and bowel dysfunction - a systematic review and feasibility study in institutionalised older people	Glasgow Caledonian University	Booth, Jo Glasgow Caledonian University	Hagen S, McClurg D	27/04/2011	8,000.00	0.00	0.00
LTCM03.9	(Phase II) PDCOMM Pilot Study	Dunhill Medical Trust	Sackley, Catherine University of Birmingham	Brady M	08/07/2011	240,000.00	9,940.00	0.00
LTCM01.5	(Phase II) Preventing Depression and Improving Awareness through Networking in the EU (PREDI-NU)	EU Public Health Programme EAHC	Hegerl, U University of Leipzig	Maxwell M, Harris F	30/09/2011	1,489,667.00	0.00	68,342.00
Stroke01.16	(Phase I) Factors associated with fatigue in non-depressed stroke patients	NIHR (Stroke Research Network - Portfolio Development)	Drummond, A University of Nottingham	Pollock, A	06/12/2011	2,000.00	0.00	0.00
PVH01.3	(Phase III) Vault or Uterine prolapse surgery Evaluation – two parallel randomised controlled trials of surgical options for upper compartment (uterine or vault) pelvic organ prolapse (VUE)	NIHR HTA	Glazener, Cathryn University of Aberdeen	Hagen, S, Elders A	21/06/2012	1,436,639.00	10,397.00	0.00
LTCM03.7	(Phase II) A podiatry intervention to reduce falls in care home residents: development, feasibility and acceptability study with exploratory randomised controlled trial	Chief Scientist Office	Wylie, Gavin NHS Tayside	Williams, B	31/07/2012	184,152.00	0.00	1,971.00
PVH02.8	(Phase III) Antibiotic Treatment for Intermittent Bladder Catheterisation: A Randomised Controlled Trial of Once Daily Prophylaxis (The AnTIC study)	NIHR HTA	Pickard, Rob Newcastle University	McClurg, D	14/08/2012	1,253,764.00	158,137.00	0.00

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

Project Summary Code	Project Title	Funding body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (Stirling) Allocation
MCH03.3	PETER-FEST: Proactive telephone care for breastfeeding women delivered by a dedicated feeding support team in a rural community	NHS Grampian	Humphrey, T Robert Gordon University, Aberdeen	Hoddinott, P	01/10/2012	18,490.00	0.00	3,584.50
HBC01.5	Ways to intervene and support engagement of older adults weight loss study (WISE OWLS)	Chief Scientist Office	Kiezebrink, K University of Aberdeen	Hoddinott, P	01/10/2012	49,202.00	0.00	1,490.00
HBC01.6	Systematic reviews and integrated report on the quantitative and qualitative evidence base for the management of obesity in adult men (ROME0)	NIHR HTA	Avenell, A University of Aberdeen	Hoddinott, P	01/10/2012	252,839.00	0.00	4,770.00
Stroke01.15	(Phase II) Can an arts based creative engagement intervention following stroke improve psychosocial outcomes? A feasibility trial of a creative engagement intervention for in-patient rehabilitation	Chief Scientist Office	Morris, Jacqui University of Dundee	Williams, B	08/10/2012	214,647.00	0.00	0.00
Stroke02.15	Physical activity for non-ambulatory stroke survivors living at home: developing a feasible and acceptable intervention	Chief Scientist Office	van Wijck, Frederike Glasgow Caledonian University	Williams, B	31/10/2012	104,460.00	0.00	0.00
HBC01.7	Reducing alcohol consumption in obese men: development and feasibility testing of a complex community-based intervention (MACRO)	NIHR	Crombie, I K University of Dundee	Williams, B	31/10/2012	220,846.00	0.00	5,262.00
HBC01.8	Reducing binge drinking among disadvantaged men through a brief intervention delivered by mobile phone: A multi-centre randomised controlled trial	NIHR	Crombie, I K University of Dundee	Williams B	07/11/2012	873,649.72	0.00	2,817.00
Stroke02.14	(Phase II) Early VERSus Later Augmented Physiotherapy (EVERLAP) compared with usual upper limb physiotherapy: an exploratory RCT of arm function after stroke	CSP	van Wijck, Frederike Glasgow Caledonian University	Pollock, A	04/12/2012	198,750.00	0.00	0.00
MCH03.4	A randomised controlled trial of proactive breastfeeding telephone support for mothers of preterm infants	VR/Formas/VINNOVA/FAS; Center for Clinical Res. Dalarna; Orebro-Uppsala Regional Res. Council; Magn Bergvall's Found. and Little Baby's Fund, Sweden.	Flicking, R University of Dalarna, Sweden	Hoddinott P	12/12/2012	204,765.00	0.00	0.00
Stroke02.6	Rosetrees Trust Donation to TSA 2012/05 - Practical methods for meta-analysis of continuous outcomes in stroke rehabilitation trials	The Stroke Association	Weir, Chris University of Edinburgh	Brady, M	01/01/2013	94,411.00	3,600.00	0.00
Stroke01.17	Nottingham Fatigue After Stroke (NotFAST study): Understanding the nature of the clinical problem and determining factors associated with fatigue in stroke patients without depression	The Stroke Association	Drummond, Avril University of Nottingham	Pollock A	11/01/2013	170,082.00	0.00	0.00
M01.6	(Phase II) ConDUCT-II Hub. Collaboration and innovation for difficult and complex randomised controlled trials in invasive procedures. Theme 2: Integrative and dynamic research methods to optimise recruitment for RCTs	MRC	Blazeby, J University of Bristol	Hoddinott P	30/04/2013	1,979,501.00	0.00	18,706.00
LTCM02.7	(Phase II) TreatWELL - a feasibility study to assess the delivery of a lifestyle intervention for colorectal cancer patients undergoing curative treatment	Chief Scientist Office	Anderson, Annie University of Dundee	Wells M	07/08/2013	132,392.00	0.00	1,496.00
Stroke01.5	(Phase III) Clinical and cost effectiveness of aphasia computer therapy compared with usual stimulation or attention control long term post stroke (CACTUS)	NIHR HTA	Palmer, Rebecca University of Sheffield	Brady M	30/08/2013	1,445,589.00	22,438.00	0.00
Stroke04.3	(Phase IV) DORIS Guidelines Project	Stroke Action Plan Implementation Fund	Langhorne, Peter University of Glasgow	Pollok A	16/09/2013	22,390.00	21,257.00	0.00

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

Project Summary Code	Project Title	Funding body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (Stirling) Allocation
HBC01.9	(Phase II) Adapting and piloting an informal school-based peer-led intervention for smoking prevention in Scotland (ASSIST-Scotland): an exploratory trial	Chief Scientist Office	Bauld, Linda University of Stirling	Dougall N	12/11/2013	279,084.00	0.00	15,190.00
MCH03.4	(Phase I I) Proactive telephone support for breastfeeding mothers of preterm infants: a randomised controlled trial	Uppsala-Orebro Regional Research Council	Blazeby, Jane University of Uppsala, Sweden	Hoddinott P	12/12/2013	47,110.00	0.00	0.00
HBC01.4	Community-based health improvement for disadvantaged women: Could a physical activity / healthy eating intervention be delivered in Bingo clubs in Scotland	Chief Scientist Office	Evans, Josie University of Stirling	Williams B	09/05/2014	116,842	0.00	249.00
PVH02.11	(Phase II) A feasibility study for a randomised controlled trial of transcutaneous posterior tibial nerve stimulation to alleviate stroke-related urinary incontinence. TREAT-UI	The Stroke Association	Booth, Jo Glasgow Caledonian University	Hagen S, McClurg D	09/05/2014	162,033.00	0.00	0.00
HBC01.10	(Phase I) Improving physical activity levels of older people living in care homes	Chief Scientist Office	Wylie, Gavin NHS Tayside	Morris J	30/07/2014	143,096.00	0.00	0.00
Stroke01.20	(Phase I) Life after stroke - nurse research priorities	Chest Heart & Stroke Scotland	Rowat, Anne Edinburgh Napier University	Pollock A	26/08/2014	11,461.00	1,788.00	0.00
Stroke01.19	Too much sitting in extended bouts in stroke survivors: a qualitative study to inform interventions	Chief Scientist Office	Fitzsimons, Claire University of Edinburgh	Morris J	19/01/2015	182,063.00	798.00	0.00
PVH01.3	(Phase III) Vault or Uterine prolapse surgery Evaluation – two parallel randomised controlled trials of surgical options for upper compartment (uterine or vault) pelvic organ prolapse (VUE) - recruitment period extension	NIHR HTA	Glazener, Cathryn University of Aberdeen	Hagen S, Elders A	06/02/2015	89,751.00	0.00	0.00
PVH01.4	(Phase III) Clinical and cost-effectiveness of surgical options for the management of anterior and/or posterior vaginal wall prolapse: two randomised controlled trials within a Comprehensive Cohort Study (PROSPECT)	NIHR HTA	Glazener, Cathryn University of Aberdeen	Hagen S, Elders A	09/02/2015	193,864.00	1,174.00	0.00
LTCM01.8	(Phase I) Finding the right ingredients: Improving mental health and well-being through food centred activities.	Wellcome Trust	Estrade, M University of Edinburgh	Maxwell M	31/03/2015	45,000.00	0.00	0.00
MCH03.6	(Phase II) A women-centred, tailored SMS-delivered multi-component intervention for weight loss and maintenance of weight loss in the postpartum period: intervention adaptation and pilot RCT	NIHR / PHR	McKinley, Michelle The Queen's University of Belfast	Hoddinott P	31/03/2015	483,040.00	0.00	14,895.00
HBC01.12	(Phase I) RSE Systematic literature review of interventions to improve health, happiness and wellbeing in the transition from adolescence to adulthood - population interventions.	Royal Society of Edinburgh	McClean, Joanne Mental Health Foundation	Pollock A, Campbell P, Maxwell M	29/10/2015	89,979.00	26,968.00	0.00
LTCM03.10	(Phase III) A multi-centre randomised controlled trial to compare the clinical and cost effectiveness of Lee Silverman Voice Treatment versus standard NHS speech and language therapy versus control in Parkinson's disease (PDCOMM)	NIHR HTA	Sackley, Catherine King's College London	Brady M	11/11/2015	1,830,109.60	397,723.00	0.00
HBC02.2	(Phase III) CPIT III trial. Cessation of smoking in pregnancy incentives trial	CRUK	Bauld, L University of Stirling and Tappin D University of Glasgow	Hoddinott P	04/12/2015	824,587.00	0.00	0.00
M01.2	(Phase I) Identifying and assessing different approaches to developing complex intervention (INDEX study)	MRC	O'Cathain, Alicia University of Sheffield	Hoddinott P, Duncan E	01/01/2016	380,033.00	0.00	91,528.00

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

Project Summary Code	Project Title	Funding body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (Stirling) Allocation
Stroke 03.4	Writing group to develop proposals aimed at evaluating the effectiveness of visual scanning training on activity and participation in patients with visual problems after stroke	BASP / NIHR	Clatworthy, P University of Bristol	Hazelton C	01/08/2016	1,882.40	0.00	0.00
LTCM01.6	(Phase II) Feasibility of a multi-site RCT exploring the effectiveness of mindfulness-based cognitive therapy to improve emotional wellbeing and glycaemic control among adults with type 1 diabetes	Chief Scientist Office	Keen, Andrew University of Aberdeen/ NHS Grampian	Maxwell M	22/02/2016	216,424.00	0.00	5,020.00
HBC02.3	Use of breast pumps to improve breastfeeding outcomes: development and feasibility testing of novel incentive intervention - BABI 1	Glasgow Children's Hospital Charity	McInnes, Rhona Edinburgh Napier University	Hoddinott, Elders A, Gillespie N	04/03/2016	39,629.00	36,501.90	0.00
MCH03.5	(Phase II) Assets-based feeding help Before and After birth (ABA): feasibility study for improving breastfeeding initiation and continuation	NIHR / PHR	Jolly, Kate University of Birmingham	Hoddinott P	15/06/2016	328,980.00	0.00	11,238.00
PVH02.5	(Phase II) A feasibility and acceptability study for a randomised controlled trial of urinary catheter washout solutions to prevent blockage in long-term catheter users	Chief Scientist Office (Work Development Fund)	Shepherd, Ashley University of Stirling	Hagen S	27/06/2016	19,060.00	0.00	0.00
HBC02.2	(Phase III) Partnership funding with Cancer Research UK for the Cessation in Pregnancy Initiatives Trial (CPI): a multi-centre phase III randomised controlled trial.	Chief Scientist Office	Bauld, L University of Stirling and Tappin, D University of Glasgow	Hoddinott P, Harris F	30/06/2016	294,974.00	0.00	20,209.00
PVH02.6	(Phase IV) Development and validation of a clinical prediction rule to guide and improve the treatment of female stress urinary incontinence	Canadian Institutes for Health Research (CIHR)	Dumoulin, Chantal University of Montreal	Hagen S	15/07/2016	474,388.82	0.00	0.00
M01.4	(Phase 1) Guidance to optimise pilot study design and conduct: a joint HTMR and NIHR HTA 'research on research' proposal	MRC - Methodology Panel	Blazeby, Jane University of Bristol	Hoddinott P	24/07/2016	24,510.00	0.00	0.00
M01.5	Developing theory based behaviour change interventions to minimise drop-out in randomised trials.	Chief Scientist Office	Gillies, Kate University of Aberdeen	Wells M	21/12/2016	199,858.00	0.00	3,690.00
PVH02.9	(Phase III) Electric tibial nerve stimulation to reduce incontinence in care homes: ELECTRIC	NIHR HTA	Booth, Jo Glasgow Caledonian University	Hagen S, McClurg D	20/01/2017	1,236,293.06	19,760.94	0.00
HBC02.4	(Phases 1 and II) Use of Breast pumps to improve breastfeeding outcomes: development and feasibility testing of novel incentive intervention - BABI 0	NHS Health Scotland	McInnes, Rhona Edinburgh Napier University	Hoddinott P, Elders A, Gillespie N	09/02/2017	12,261.00	7,851.00	0.00
Stroke01.8	Mindfulness based stress reduction to support self-management of anxiety and depression following stroke: development study.	Chief Scientist Office	Lawrence, Margaret Glasgow Caledonian University	Maxwell M, Dickson S	23/02/2017	85,339.00	0.00	300.00
HBC01.14	We Can Quit2: a randomised pilot trial of a community-based smoking cessation intervention for women in disadvantaged areas of Ireland.	Health Research Board	Hayes, Catherine Trinity College Dublin	Loudon K	02/03/2017	487,787.00	0.00	4,730.00

NMAHP Research Unit Collaborator on Grants (01/01/10 to 31/05/17) Quality and Delivery of Care Programme

Project Summary Code	Project Title	Funding Body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (Stirling) Allocation
Stroke01.18	Exploring the barriers and facilitators to maintaining engagement in physical activities after the end of post-Stroke rehabilitation: a qualitative study of Stroke survivors, caregivers and Stroke physiotherapists	Chief Scientist Office	Morris, Jacqui University of Dundee	Williams B	07/04/2010	128,249.00	0.00	1,579.50
LTCM02.2	Working after cancer: a systematic review and meta-synthesis of qualitative studies exploring experience, problems and strategies in relation to employment and return to work	Chief Scientist Office	Wells, Mary University of Dundee	Williams B	30/04/2010	49,000.00	0.00	267.34

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

Project Summary Code	Project Title	Funding Body	Principal Investigator	NMAHP-RU Collaborators	Award Date	Total Funding Awarded	NMAHP-RU (GCU) Allocation	NMAHP-RU (Stirling) Allocation
ISSR02.11	Development and validation of the "valuing people as individuals scale (VPAIS)	NHS Tayside	Jones, Martyn University of Dundee	Williams B	01/07/2010	25,000.00	0.00	0.00
LTCM01.3	(Phase II) Keep well: Minnesota-Edinburgh complexity assessment method (MECAM) to assess mental health and wellbeing	NHS Health Scotland	Pratt, R University of Edinburgh	Maxwell M	01/07/2010	65,000.00	0.00	4,713.00
LTCM01.9	Exploring links between low literacy and poor health: an investigation of the experiences of people with low literacy of health service use and self-care	Chief Scientist Office	Easton, P NHS Tayside	Williams B	01/07/2010	33,000.00	0.00	0.00
MCH02.6	(Phase I) Is there a relationship between ultrasound scanning ability and the visuospatial perception or psychomotor ability	College of Radiographers Industrial Partnership Scheme	Chapman, Elizabeth NHS Fife	Hagen S	06/12/2010	7,758.00	0.00	0.00
LTCM03.6	(Phase I) Assessing the appropriateness and acceptability of a new multi-level taxonomy of asthma plan terms in primary care	Queen's Nursing Institute Scotland	Ring, Nicola University of Stirling	Hoskins G	01/03/2011	25,000.00	0.00	0.00
PVH02.3	(Phase IV) Development and clinical trial of a mixed (multi/single-use) catheter management package for users of intermittent catheterisation	NIHR	Fader, Mandy University of Southampton	McClurg D	01/02/2012	1,999,199.00	260,478.00	0.00
MCH02.1	(Phase IV) The PRAM Project: using Modelling & Simulation software/tools to facilitate more effective and efficient post-natal care	Knowledge Transfer Partnerships	Bowers, John University of Stirling	Cheyne H	21/04/2012	83,406.00	0.00	8,000.00
ISSR01.2	(Phase No. II) Impact of Hypoglycaemia on Healthcare Services	Novo Nordisk	Leese, Graham University of Dundee	Duncan E Fitzpatrick D	28/03/2014	76,061.00	0.00	2,500.00
M01.3	(Phase IV) A Scottish improvement science research, development and knowledge translation collaborating centre (SISCC)	Chief Scientist Office, Scottish Funding Council, NHS Education for Scotland	Renfrew, Mary University of Dundee	Williams B, Maxwell M, Cheyne H, Morris J	31/03/2014	3,250,000.00	0.00	250,000.00
Stroke02.1	(Phase I) Quality of life and health utilities at three months after Stroke	Genentech	Ali, Myzoon University of Glasgow	Brady M	30/04/2014	20,000.00	6,000.00	0.00
MCH02.7	Improving maternal and child health in Malawi: Rotary scholarship	The Rotary Foundation - Global Grant Scholarship	Fraser, M Rotary Club of Dunblane and Limbe Malawi	Cheyne H	21/05/2014	25,408.00	0.00	6,520.00
LTCM01.4	Solution development for the challenges faced by people with dementia and their carers	University of Stirling, Stirling Crucible Award 2014	letswaard, Magdalena University of Stirling	France E	08/01/2015	1,182.00	0.00	0.00
ISSR02.8	(Phase I) Shared decision-making in treatment evaluation	Alliance for Self Care Research	Bugge, Carol University of Stirling	Abhyankar P	06/03/2015	2,491.00	0.00	0.00
LTCM02.8	(Phase I) Exploring the experiences of patients undergoing treatment and surviving with bone cancer	Bone Cancer Research Trust	Taylor, Rachael University College London Hospital	Wells M	09/05/2016	8,010.00	0.00	0.00
LTCM02.3	(Phase I) Development of a sarcoma-specific patient-reported outcome measure.	Sarcoma UK	Taylor, Rachael University College London Hospital	Wells M	24/06/2016	119,464.00	0.00	0.00
HBC01.11	Knowledge, attitudes and current practice of health professionals regarding the use of e-cigarettes and other smoking cessation interventions by cancer survivors	Cancer Research UK	Brett, Jo Oxford Brookes University	Wells M	21/12/2016	44,582.00	0.00	0.00
ISSR02.7	Revolutionising psychological trauma care: Providing the final details for an NIHR application for a robust evaluation of effectiveness, reach and context dependence of a novel Scottish Government-funded model of care	Chief Scientist Office, Catalytic Grant	Karatzias, Thanos Edinburgh Napier University	Maxwell M, Hibberd C	23/02/2017	29,691.00	0.00	12,500.00

Appendix 2: Grant awards by programme, and whether Unit led/Unit collaborating

NMAHP Research Unit Involvement in Unfunded Projects (01/01/10 to 31/05/17)

Project Summary Code	Project Title	Project Output	Principal Investigator	NMAHP-RU Investigators
Stroke01.1	Cochrane review of speech and language therapy for aphasia following Stroke	Cochrane Review	Brady, Marian Glasgow Caledonian University	Campbell P
Stroke04.1	Cochrane review of staff-led interventions for improving oral hygiene in patients following Stroke	Cochrane Review	Brady, Marian Glasgow Caledonian University	

NMAHP Research Unit – Other Significant Research Work

Project Summary Code	Project Title	Funder	Principal Investigator	NMAHP-RU Investigators	Current Funding
Stroke 02.7	VISTA-Rehab	various	Ali, Myzoon - Glasgow Caledonian University	Brady M, Pollock A, Duncan Millar J	£6,520.00

NMAHP Research Unit – Involvement in PhD Projects not included within the Grant Reports

Project Summary Code	Project Title	Principal Investigator	NMAHP-RU Collaborators
Stroke01.6	Aphasia telerehabilitation early post Stroke	Hege Prag Øra, H Sunnaas Rehabilitation Hospital, Nesoddtangen and the University of Oslo, Norway	Brady M
Stroke02.11	Executive function in people with Stroke	Chung, C NHS Fife and Glasgow Caledonian University	Pollock A
Stroke02.12	Commercial gaming devices for Stroke upper limb rehabilitation	Thomson, K Glasgow Caledonian University	Pollock A, Brady M

Appendix 3: Analysis of publication quality and impact

Articles in a Journal with a SCImago Journal Rank (SJR) indicator

The SCImago Journal Rank (SJR) is a measure of a journal's influence: it accounts for both the number of citations received by a journal and the prestige of the journals from where such citations come.

We have calculated the SJR for Unit journal outputs from 2010 which shows that 80% of those in a journal with an SJR rank were in the top quartile (see Figure 19).

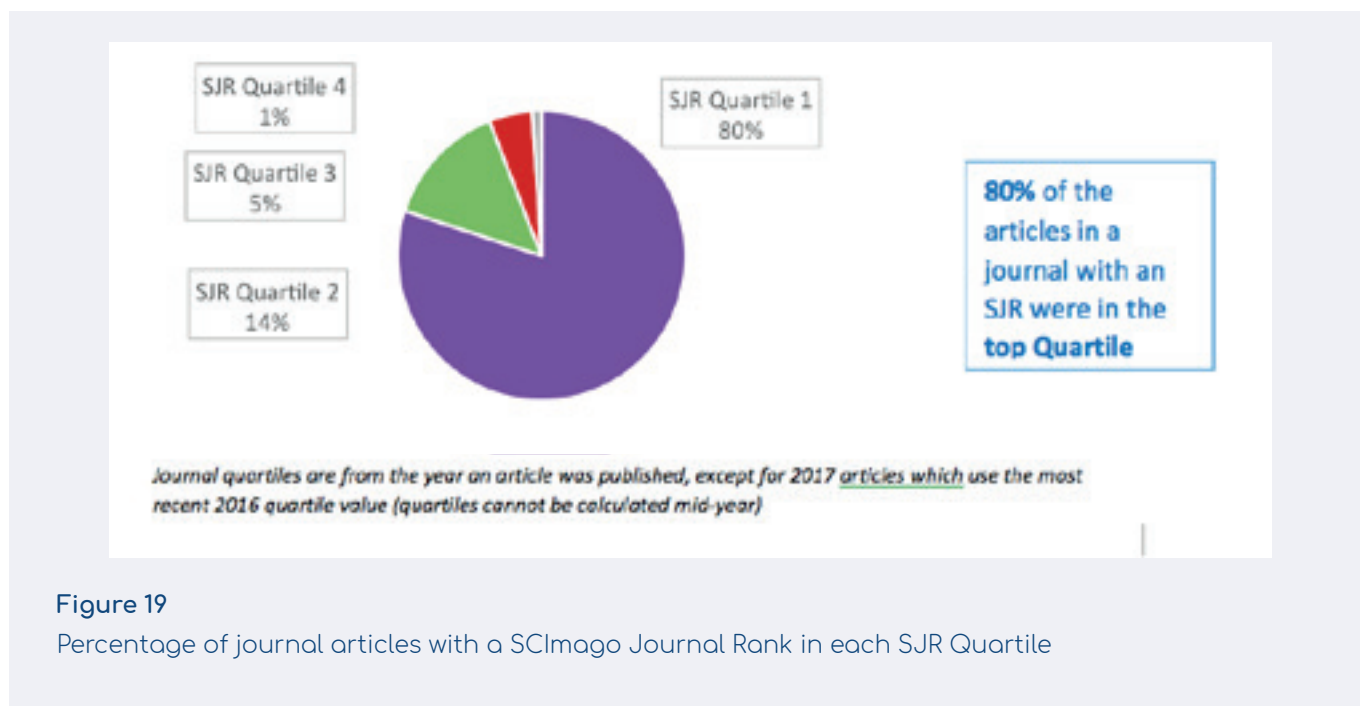


Figure 19

Percentage of journal articles with a SCImago Journal Rank in each SJR Quartile

Standardised Metrics

The metrics described in the sections below have been selected from the 'Snowball Metrics' handbook (<https://www.snowballmetrics.com/>). Snowball Metrics use statistical methodologies agreed by Universities with the aim of ensuring robust and clearly defined metrics. The resulting benchmarks provide reliable information to help understand research strengths.

The metrics below were calculated only for the NMAHP publications indexed by the Scopus database (330 out of 443 publications). Inclusion in Scopus means the publications can be analysed in comparison to a large corpus of world publications.

(Scopus is the largest abstract and citation database of peer-reviewed literature with 67 million records and includes more than 22,794 peer-reviewed journals <https://www.elsevier.com/solutions/scopus>).

Field-Weighted Citation Impact for Journal Articles

The Field-Weighted Citation Impact indicates how the number of citations received by a publication compares with the average number of citations received by all other similar publications indexed in the Scopus database.

A Field-Weighted Citation Impact of greater than 1.00 indicates that the publications have been cited more than would be expected based on the world average for similar publications. We have calculated the Field-Weighted Citation Impact from 2010 which shows that 80% (see Figure 20).

NMAHP RU journal articles had an average Field Weighted Citation Impact of 1.69. This means, on average, outputs have been cited 69% more times than expected.

In 2017, this metric has reached 2.55, meaning citations of 155% more than expected.

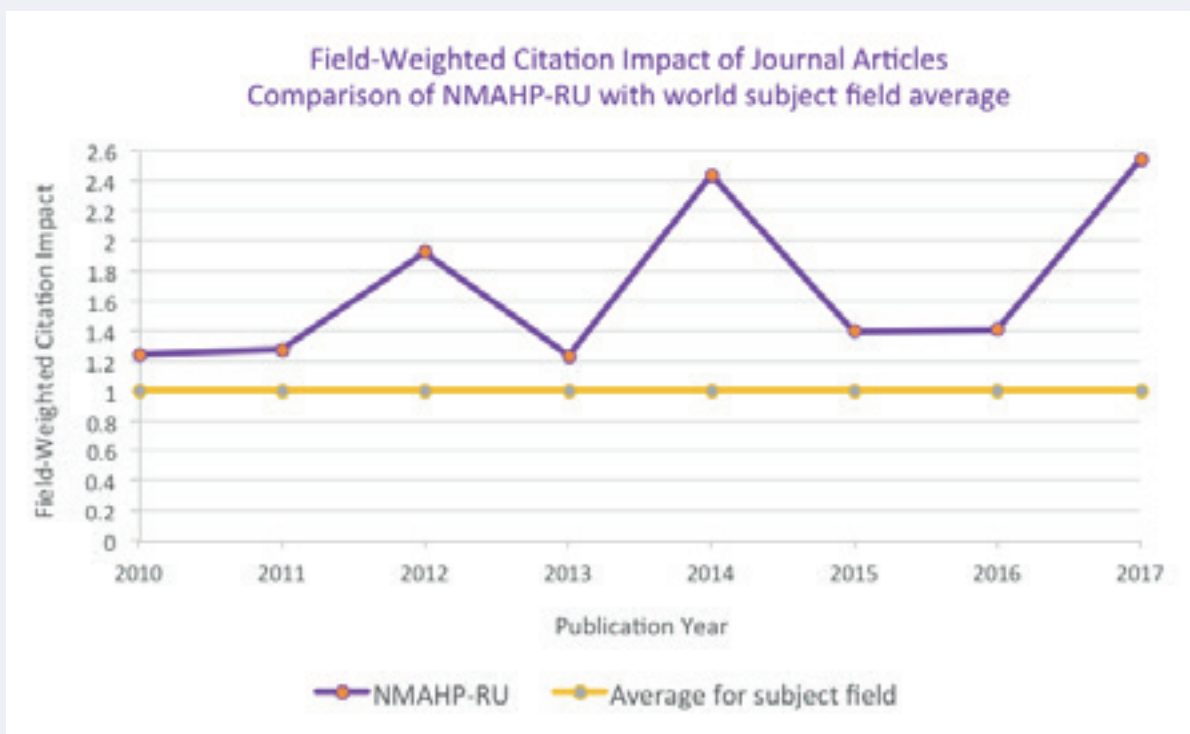


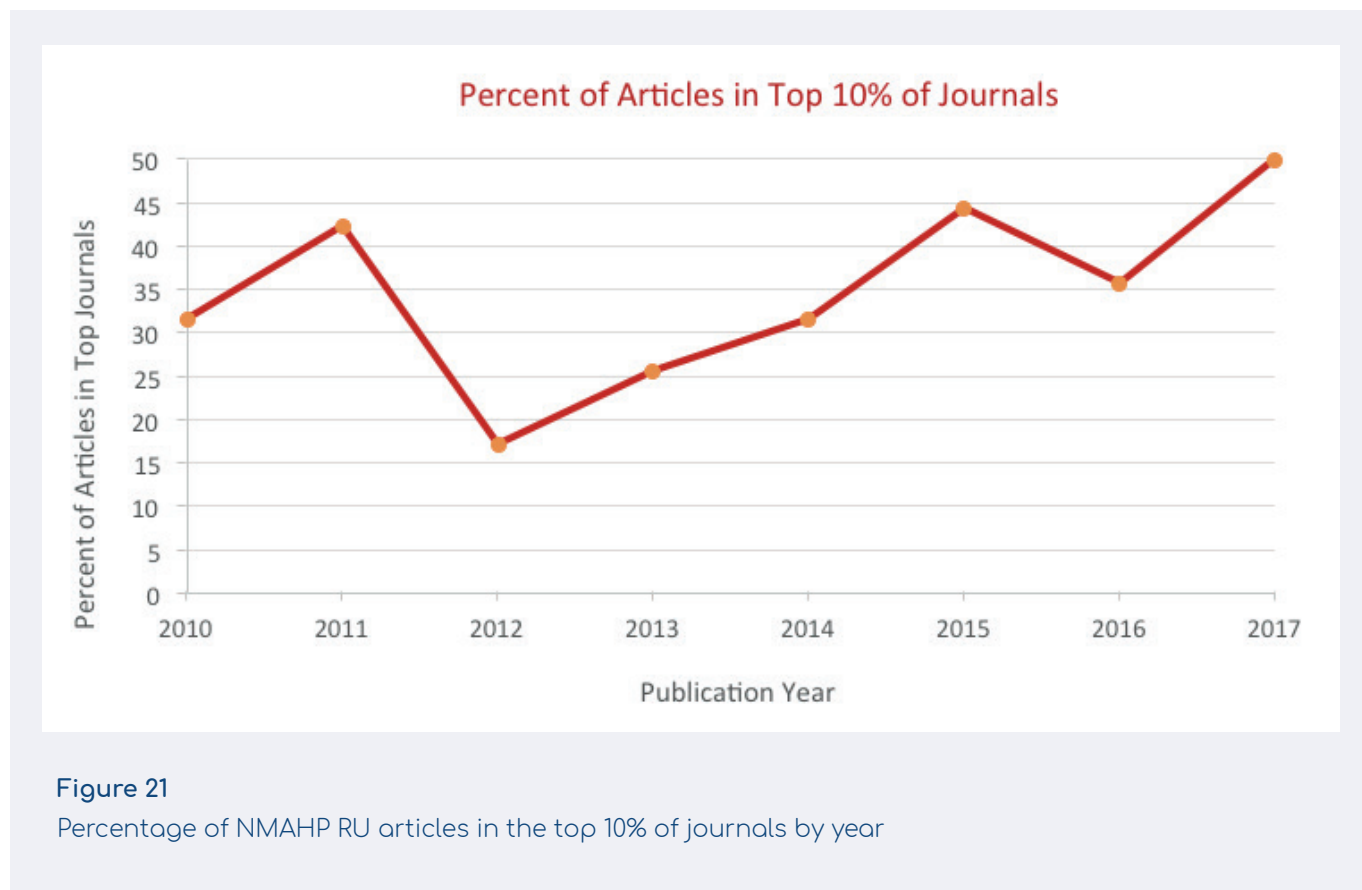
Figure 20

Field-weighted citation impact of journal articles by year and in comparison with world subject field average

Publications in Top Journal Percentiles

Publications in Top Journal Percentiles indicates the extent to which publications are present in the most-cited journals in Scopus. The calculation here is the proportion of articles that are in the top 10% of journals of the most cited journals.

(Most cited defined using SJR (SCImago Journal Rank)). Data show that the general trend is an increase in the percentage of articles in the top 10% of journals since 2010, now reaching 50% in 2017 (See Figure 21).



*On average 35% of articles were published in the top 10% of journals. In 2017, **50% of articles** have been published in the **top 10% of journals**.*

Publications in the top 5% of all research outputs scored by Altmetric

Altmetric is a tool that tracks social media attention and mentions of research papers on the Web (<http://www.altmetric.com>).



Altmetric calculates an 'attention score' for each publication. The score is not a simple count of mentions rather it is a weighted score depending on number and type of mentions (e.g. whether from news sites, blogs, twitter, facebook, etc.)

One way to assess how well publications are performing is to compare any article with a score to all other scored articles in the Altmetric database. Altmetric monitors more than 8 million research publications.

The graph below (See Figure 22) shows the percentage of NMAHP articles with a score that puts them in the top 5% of all Altmetric scores. Further details of the publications that are in the top 5% of all outputs scored by Altmetric are presented in Volume 2.

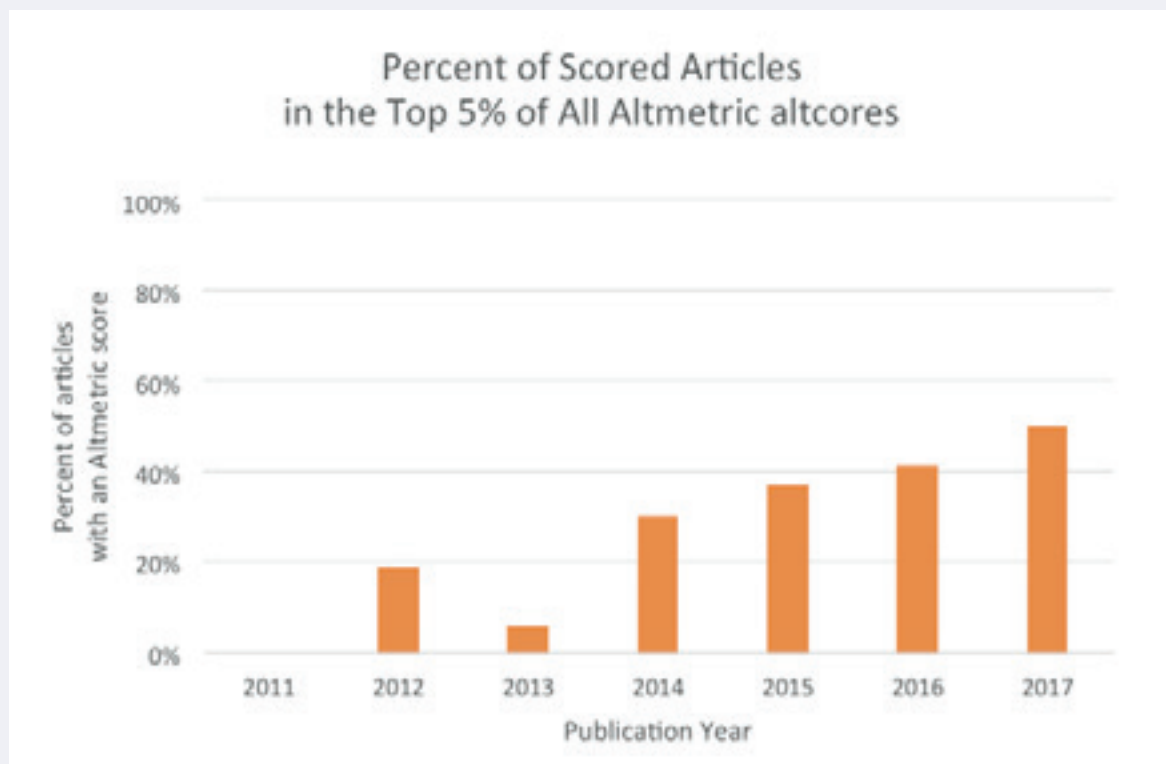


Figure 22
Percent of Scored Articles in the Top 5% of All Altmetric altcores

Only journal articles with a DOI were included in the analysis. Altmetric only started monitoring publications in 2011, therefore articles from 2010 were excluded

Appendix 4: PhD and Clinical Doctorate students

Appendix 4: PhD and Clinical Doctorate students

NMAHP Research Unit - PhD Students January 2010 - May 2017

Student Name		Supervisor	Disciplinary Background	Status
Allan	Katie	Helen Cheyne	Education	2nd Year
Arifin	Siti Roshaidai Mohd	Helen Cheyne & Margaret Maxwell	Midwife	Completed 2016
Armstrong	Lorraine	Fiona Harris	Nurse	Part-time 4th year
Boa	Sally	Edward Duncan	Speech Therapist	Completed 2014
Booth	Lorna	Jo Booth, Dawn Skelton, Suzanne Hagen	Psychology	2nd year
Cameron	Dawn	Fiona Harris	Practice Nurse	Completed 2017
Chung	Charlie	Alex Pollock	Occupational Therapist	Completed 2015
Clark	Patrick	Margaret Maxwell	Sociologist	Graduated Mphil 2016
Davis	Bridget	Alex Pollock	Nurse	Writing up
Dickinson	Lucy	Brian Williams	Psychology	Suspended due to illness/on-going
Doi	Larry	Helen Cheyne	Public Health Scientist	Completed 2012
Dougall	Nadine	Margaret Maxwell	Statistician	Part-time 4th year
Duncan Millar	Julie	Myzoon Ali & Alex Pollock	Physiotherapist	Due to complete November 2017
Fitzpatrick	David	Edward Duncan	Paramedic	Completed 2016
Frost	Rachael	Marion Brady & Doreen McClurg	Herbal Medicine & Health Science	Completed 2016
Furnivall	Judith	Fiona Harris	Social Worker	Part-time 3rd year
Hazelton	Christine	Alex Pollock	Optometrist	Completed 2016
Gilmour	Lynne	Margaret Maxwell & Edward Duncan	Sociologist	ESCR 3 +1 (currently MSC Student)
Ikegwuonu	Theresa	Edward Duncan & Margaret Maxwell	Social Work	Completed 2013
Johnson	Chris	Margaret Maxwell	Pharmacist	Part-time 3rd Year
Kerrigan	Angela	Helen Cheyne & Edward Duncan	Midwife	Writing up
Khan	Baraah	Fiona Harris	Mental Health Nurse	Writing up - submits December 2017
Komvoki	Nicole	Helen Cheyne	Pre School Teacher	2nd Year
Levati	Sara	Suzanne Hagen & Mary Wells	Nurse	Writing up
Liddle	Keir	Edward Duncan & Margaret Maxwell	Psychologist	Writing up
Lindsay	Calum	Helen Cheyne	Social Work	2nd Year
Lough	Katharine	Suzanne Hagen, Doreen McClurg & Alex Pollock	Physiotherapist	2nd Year
McGill	Kris	Marion Brady	Psychologist	2nd Year
Newlands	Rumana	Pat Hoddinott	Trial Manager	Completed 2017
Nicoll	Avril	Margaret Maxwell	Speech Therapist	Writing up. Due to submit Aug 2017
Prag Øra (Norway)	Hege	Marian Brady	Doctor	2nd Year
Ross Davie	Mary	Helen Cheyne	Midwife	Completed 2012
Russell	Sian	Marian Brady	Social Scientist	Completed 2012
Scobbie	Lesley	Edward Duncan	Occupational Therapist	Completed 2015
Semple	Karen	Helen Cheyne & Margaret Maxwell	Prosthetics/Orthotist	Completed 2015
Sinesi	Andrea	Helen Cheyne & Margaret Maxwell	Psychologist	2nd Year
Skinner	Rebecca	Pat Hoddinott	Psychologist	1st Year
Steele	Mary	Helen Cheyne	Design & Computing	Completed 2014
Strachan	Heather	Brian Williams	Nurse	Completed 2017
Thomson	Katie	Marian Brady & Alex Pollock	Occupational Therapist	Completed 2016

Appendix 4: PhD and Clinical Doctorate students

Student Name	Supervisor	Disciplinary Background	Status	
Clinical Doctorate/Professional Doctorate Students				
Astbury	Ruth	Helen Cheyne	Nurse	Completed 2015
Campbell	Karen	Fiona Harris	Oncology Nurse	Part-time 6th year
Chapman	Elizabeth	Suzanne Hagen	Radiographer	Completed 2015
Clarke	Katherine	Fiona Harris	Health Visitor	Part-time 5th year
Cliffe	Karen	Helen Cheyne	Midwife	Writing up
Hiscox	Caroline	Mary Wells	Nurse	Part-time 4th year
Kirby	Deborah	Pat Hoddinott	Dietician	Part-time 3rd year
Lind	Marianne	Pat Hoddinott	Midwife	Part time 2nd year
McMahon	Karen	Fiona Harris	Mental Health Nurse	Part-time 7th year
Rimicans	Karen	Margaret Maxwell	Mental Health Nurse	Part-time 3rd year
Wilson	Jennifer	Mary Wells	Nurse	Part-time 3rd year

Appendix 5: Strategic collaborations and partnerships

Cochrane Collaboration: NMAHP RU is the lead international producer of Cochrane reviews relating to Stroke rehabilitation, with the top 3 most accessed Stroke Cochrane reviews in 2015 all authored by our staff (also appearing amongst the Top 50 reviews across the Cochrane Library >17,000 reviews). Professor Brady's review on pre-operative fasting was the first Cochrane consumers "Systematic Review of the Month" 20th October 2003 and was in the top 10 most accessed Cochrane reviews in 2004. See <http://www.nmahp-ru.ac.uk/news/2016/october/cochrane-Stroke-database/> for more information.

Staff also contribute to the work of a number of Cochrane review groups (including Stroke, incontinence, consumers and communication), Cochrane Training, Cochrane Consumer Network and the Cochrane Rehabilitation and Cochrane Global Ageing Fields. Three members of staff are group editors (Prof Brady, Prof Hagen, Dr Pollock).

Collaboration of Aphasia Trialists (CATs): This collaboration has established a network of leading European multidisciplinary aphasia investigators in rehabilitation, social science, linguistics and language research. It aims to: enhance knowledge, skills and methodology relating to aphasia research; facilitate international agreement in aphasia assessment & diagnosis through consensus working; and enable data sharing activities that contribute to enhanced prognosis and rehabilitation of aphasia. It is led by Prof Brady <http://www.aphasiatrials.org>

Database of Research in Stroke (DORIS): This database is hosted by the unit and provides easy access to current best evidence, including guidelines, systematic reviews and RCTs. It provides a platform to enable a collaborative approach to research activity and implementation, and to enhance efficient resource utilisation. It is developed and updated regularly by the Cochrane Stroke Group. <http://www.askdoris.org/>

DataLab Cancer Innovation Challenge: The Cancer Innovation Challenge is a £1M project funded by the Scottish Funding Council (SFC) to encourage Innovation Centres in Scotland to work in partnership to help Scotland become a world leading carer for people with cancer through open innovation funding

calls for data science solutions. Prof Wells is an advisor to the project "New approaches to record and integrate cancer PROMs (Patient Reported Outcome Measures) and PREMs (Patient Reported Experience Measures)" see <http://cancerchallengescotland.com/blog/imagine-future-where-things-were-different%E2%80%A6>

e-Health Informatics Research Centre

The Unit is a named collaborative partner in the e-Health Informatics Research Centre linked to the FARR Institute, and an advisor to the Cancer Innovation Challenge workstream "New approaches to record and integrate cancer PROMs (Patient Reported Outcome Measures) and PREMs (Patient Reported Experience Measures)"

Framework for Measuring Impact:

This web resource has been designed by the Unit to guide allied health professionals, and others, in how to measure the impact of their clinical work in practice <http://www.measuringimpact.org/>.

Health Improvement Scotland (HIS)

We have worked with NHS HIS in several ways. We have supported a joint annual symposium (with other CSO funded Units HSRU and HERU), where the theme of the symposium this year was Sustainability in Quality Improvement. We will continue to jointly host this annual event to showcase quality improvement research across Scotland. We have also committed to jointly up-dating some highly accessed Good Practice Guidelines beginning with guidelines on the management of pressure ulcers. NMAHP RU will facilitate access to other HEI colleagues who have the best research expertise they require in specific practice areas. We have also provided academic input to HIS led projects (e.g. Integrated Systems Flow) and have initiated joint meetings to support the development for a Third Way in integrating research and QI methodologies for rapid but robust evidence production, or providing more robust evidence (trials) and up-scaling of QI interventions that have been shown to make a difference in small scale studies. HIS are represented at all NMAHP RU quarterly staff meetings/development days to enable exchange of and contribution to NMAHP RU areas of work.

MRC Network for Trials Methodology Research

Prof Hoddinott is a co-applicant within the MRC ConDuCT-II Hub (Collaboration and innovation for Difficult and Complex randomised controlled Trials) for Trials Methodology Research <http://www.bristol.ac.uk/population-health-sciences/centres/conduct2/>. Led by Professor Jane Blazeby at Bristol University, this collaboration of scientists undertakes methodological research on all aspects of trial prioritisation, design and conduct that apply to trials of complex healthcare interventions. It is part of the MRC's UK Network of Hubs for Trials Methodology Research.

NHS Education for Scotland:

The Unit has worked extremely closely with NES in the area of clinical academic careers and in the production of evidence syntheses for good practice and workforce development. NES are represented at all NMAHP RU quarterly staff meetings/development days to enable exchange of and contribution to NMAHP RU areas of work.

PRagmatic Explanatory Continuum Indicator Summary (PRECIS-2)

PRECIS-2 is a tool to help trialists design better trials. A toolkit and set of resources have been developed by a Unit researcher and the website is hosted by the Unit <https://www.precis-2.org/> Patient Centered Assessment Method (PCAM-Online): PCAM is a tool that practitioners can use to assess patient complexity using the social determinants of health that often explain why some patients engage and respond well in managing their health while others with the same or similar health conditions do not experience the same outcomes. Unit researchers are core partners in the PCAM team <http://www.pcamonline.org/>.

Scottish Ambulance:

The Scottish Ambulance Service has invested in a collaboration with the Unit through seconding a Clinical Research Paramedic, Dr David Fitzpatrick, who achieved a PhD in 2015 and continues to be based in the Unit at the University of Stirling. Other research paramedics have been seconded for shorter periods during the course of the collaboration. The SAS have also, with appropriate permissions, facilitated access to data to conduct retrospective analysis, and linked data studies.

This unique collaboration has resulted in a range of research projects, all of which have had a direct impact on the quality and safety of care that the Scottish Ambulance service provides – see <http://www.scottishambulance.com/HealthProfessionals/activities.aspx>. The collaboration has also promoted the development of a research-aware, active, and evidence based culture within the service.

Scottish Coordinating Centre for Implementation Science (SISCC)

The Scottish Improvement Science Collaborating Centre is funded to strengthen the evidence base for improving the quality of care sustainably and at scale. Led by the University of Dundee with NHS Tayside, SISCC involves partners from eight universities, nine NHS Boards and a growing Consortium of collaborators. NMAHP RU is one of the key partners, and is represented on the Executive Group by three Professors (Maxwell, Cheyne and Wells). The Unit leads one out of the five research themes, on Context, which aims to synthesise current evidence to produce guidance to support the design of effective, affordable and sustainable context-sensitive improvement strategies and methods. It also leads a workstream on Maternal and Child Health.

The SISCC brings together researchers, NHS and social care staff, policy makers, educators and people from the third sector from across Scotland and internationally, to generate new knowledge to support improvement activities within health and social care; building capacity and capability through a cross-sectoral platform. <http://www.siscc.dundee.ac.uk/>

The Scottish Midwifery Research Collaboration (SMART)

The Scottish Midwifery Research Collaboration was established in 2012 following reorganisation of midwifery education in Scotland. Concerns were expressed about the potential for loss of senior research capacity in midwifery. The collaboration was funded by a grant from The Chief Nurse's Office with the aim of supporting senior midwifery research capacity and capability in Scotland. The project grant was used to fund research projects in Robert Gordon, Dundee and Stirling Universities with collaborations involving all group members (MCH02.3). This group was co-ordinated by Professor Helen Cheyne and brings together senior midwife researchers in Scotland to work together to undertake research, write papers and build capacity for midwifery research <http://smartmidwifery.org.uk/>

Scottish School of Primary Care (SSPC)

The University of Stirling has always been the only HEI without a medical school to be a member of the SSPC. In more recent times, and in recognition of the contribution made to primary care research in Scotland by Profs. M Maxwell and P Hoddinott, and Dr G Hoskins (among others), the UoS remains a member of the SSPC with Prof. Maxwell as an Executive member. The SSPC are currently funded by the Scottish Government to undertake a large body of evaluative work related to the current transformation of primary care in Scotland, including primary care nursing and advanced nurse practitioner (ANP) roles. The NMAHP RU is leading on the evaluation of ANP roles and had undertaken several other evaluations of primary care service transformation (Govan SHIP; Community Hubs). Additionally, the Unit's work in LTCs and common mental health problems is conducted in partnership with other SSPC members (S Mercer). This strategic partnership allows the NMAHP RU to lead bodies of work relating to primary care and community nursing.

Stirling Centre for Child Wellbeing and Protection

Prof Cheyne is deputy director of the University of Stirling, Stirling Centre for Child Wellbeing and Protection <https://www.stir.ac.uk/ccwp/>. The Centre is based in the Faculty of Social Science. It brings together internationally recognised experts in social work, child protection, education and maternal and child health and our holistic and integrated approach to research aims to address the issues that affect children's development at an individual, family and structural level. The Centre has four main programmes of research with a focus on children and young people at risk of compromised development, these are: Mental Health and Wellbeing (linking with the Unit work on mental health), Protecting Children and Young People, Promoting equalities and Policy and systems in practice.

Vista Rehab

The Unit coordinates (and Prof Brady is a founding member of) VISTA-Rehab, an international resource for Stroke rehabilitation trials that can be used for novel exploratory analysis of anonymised data. This currently holds data on more than 10,000 individual patients (Prof Brady and Dr Ali). Many of our collaborations enable us to have strategic influence on policy, practice and research. Our research on Stroke and our influence on research infrastructure development in this area, for example, has led to impact on National and International guidelines, Stroke rehabilitation services and methodological advances.

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles and Journal/Editorial roles

Name	Journals edited	Committees
Margaret Maxwell	<p>Journal/Editorial</p> <ul style="list-style-type: none"> • Associate editor: BMC Family Practice 2010- 2016. • Member of Editorial Board for the Journal of Public Mental Health 2012-present <p>Journal Reviewing</p> <ul style="list-style-type: none"> • International Journal of Pharmacy Practice • Chronic Illness • BMC Family Practice • BMC Public Health • British Journal of General Practice • BMC Trials • BMJ Open • PLOS One • Psychiatry Research <p>Reviewing for funding organisations/panels</p> <ul style="list-style-type: none"> • NIHR HS&DR • NIHR HTA • NIHR Public Health • Chief Scientist Office • Health Research Board (Ireland) • Liverpool PCT • NHS Greater Glasgow and Clyde • NHS Forth Valley • German Health Ministry 	<ul style="list-style-type: none"> • Faculty of Health Sciences and Sport Executive Committee: (2016-present) • Faculty of Health Sciences and Sport Research Committee: (2016-present) • University of Stirling Research Committee: (2017 onwards) • University of Stirling General University Ethics Panel: Deputy Chair (2016-present) • NIHR Study Steering Committee: NOTEPAD study (2015-present) • Clinical Academic Careers Governance Group (2016-present) • Scottish School of Primary Care: Executive committee (2016- present) • Scottish Improvement Science Collaborating Centre: Executive committee (2014-present) • Primary Care Evidence Collaborative: Executive committee (2017 onwards) • NHS24 Patient Journey Group: member (2017 onwards) • NHS HIS Integrated Systems Flow Delivery Group: (2016 – present) • Mental Health Foundation Award Scheme: (panel judge 2016) • NHS Forth Valley R&D Committee: (member 2014-2017) • German Federal Ministry of Education and Research: member of review Board for the Structural Development in Health Care Research awards (2016) • Mental Health Foundation: See Me Expert Advisory Group member (2014-2016) • Scottish Government Mental Health Policy Implementation Group with remit for older people, long term conditions, primary care and alcohol. (2013-2016)

Name	Journals edited	Committees
Suzanne Hagen	<p>Peer reviewing</p> <ul style="list-style-type: none"> • Journals: <ul style="list-style-type: none"> ◦ Journal of Urology ◦ BJOG: an International Journal of Obstetrics and Gynaecology ◦ British Journal of General Practice ◦ Journal of Advanced Nursing ◦ Nurse Researcher ◦ International Journal of Urogynaecology <p>•Cochrane collaboration: ◦Statistical Editor for Incontinence Review Group</p>	<ul style="list-style-type: none"> • Member of the International Continence Society • Committee member of the International Continence Society Ethics Committee 2010 - 2015 • Founder member of the International Consultation on Incontinence Research Society • Member of Scottish Pelvic Floor Network • Trial steering committees: <ul style="list-style-type: none"> ◦ The Catheter Trial (HTA funded), University of Aberdeen, 2007 – 2010 ◦ The MASTER (HTA funded), University of Bristol, 2014 – 2019 ◦ The APPEAL Programme Grant (NIHR funded), University of Birmingham, 2016 – to present

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles and Journal/Editorial roles

Name	Journals edited	Committees
Helen Cheyne	<p>Journal/Editorial</p> <ul style="list-style-type: none"> Member of the editorial board of Midwifery, the leading international journal for midwifery research. Previously joint guest editor for the Midwifery special series on early labour <p>Peer reviewing</p> <ul style="list-style-type: none"> Journals: <ul style="list-style-type: none"> Journal of Advanced Nursing; Midwifery, Health Expectations, British Journal of Midwifery, International Journal of Nursing Studies, British Medical Journal BMC Pregnancy and Childbirth PLOSone <p>Reviewing for funding organisations/panels</p> <p>Chief Scientist Office;</p> <p>BUPA, NIHR, HTA</p> <p>Chair of the scientific committee for RCM Conference 2017</p>	<ul style="list-style-type: none"> A member of the lead team for the university wide Health and Behaviour research theme (current). Deputy Director Stirling Centre for Child Wellbeing and Protection (current). Co-deputy chair for the General University Ethics Committee (current). Founder member of the International Early Labour Research Group (current). Member of the Lead Midwives Scotland Group (current) Former Chair of the Iolanthe Midwifery Trust

Name	Journals edited	Committees
Mary Wells	<ul style="list-style-type: none"> Associate Editor – European Journal of Oncology Nursing (2016 -17) Member of editorial board European Journal of Oncology Nursing since 2010 <p>Peer reviewing - journals</p> <p>Journal of Advanced Nursing, Journal of Human Nutrition and Dietetics, Health Expectations, European Journal of Cancer Care, European Journal of Oncology Nursing, Cancer Nursing, BMC Health Services Research, Journal of Clinical Oncology, British Journal of Radiology, Psycho oncology, PLOSone, American Journal of Clinical Oncology, BMJ Open, International Journal of Qualitative Methods.</p> <p>Peer reviewing - grant applications</p> <p>CRUK Population and Behavioural Science, Chief Scientist Office Health Services Research Committee, NCRI/Macmillan Postdoctoral fellowships, Macmillan User-led grants, National Institute for Health Research, Health Research Board (Ireland), NHS Tayside Health Services Research Grants Scheme, NHS Grampian Research and Development Endowments Scheme, Lothian NHS Priorities and Needs Scheme.</p>	<ul style="list-style-type: none"> Member of Research Advisory Panel Macmillan Cancer Support https://www.macmillan.org.uk/about-us/what-we-do/evidence/research-funding/research-advisory-panel-members.html Trustee of Oxford based charity DIPEX (2016 – present) Co-Chair European Oncology Nursing Society (EONS) Research Working Group (2010 – present) Specialist Advisor to Macmillan Cancer Support 2009 to present Executive Board Member and Trustee of European Oncology Nursing Society (EONS) Board Secretary from 2011 – 2015 Member of National Cancer Research Institute (NCRI) Psychosocial Oncology & Survivorship (POS) Clinical Studies Group (CSG) Lead for NCRI POS Psychosocial Interventions Sub-group (2015 – present) Chair of Scientific Committee for EONS10 Autumn Conference http://eonsdublin2016.com Scottish National Cancer Patient Experience Survey Steering Group (2014-16) Transforming Cancer Care after Treatment (TCAT) Evaluation Advisory Group (2013 - present) Member of Conference Management Committee, International Society of Nurses in Cancer Care (2015-2017)

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles and Journal/Editorial roles

Name	Journals edited	Committees
Pat Hoddinott	<ul style="list-style-type: none"> • Guest editor for a special edition of Pilot and Feasibility Studies Journal on intervention development (Autumn 2015 – current) http://www.biomedcentral.com/collections/interventiondevelopment • Editorial Board for BMC Pilot and Feasibility Studies. (2014) http://www.pilotfeasibilitystudies.com/about • Associate Editor BMC Pregnancy and Childbirth (2013 - 15) <p>Peer reviewing – journals BMJ, Paediatrics, BMJ Open, JECH, Archives Disease in Childhood, Social Science and Medicine, Implementation Science, BMC Public Health, BMC Pilot and Feasibility Studies, BMC Pregnancy and Childbirth, British Journal of General Practice, Family Practice, Maternal and Child Nutrition, Public Health Nutrition.</p> <p>Peer reviewing - grant applications MRC National Prevention Research Initiative; NIHR HTA, NIHR PHR NIHR expert advisor to the Disease Prevention Panel, The Chief Scientist Office; Economic and Social Research Council; Lottery Research Fund; CSO, University of Edinburgh Health Services Research Unit.</p>	<ul style="list-style-type: none"> • National Institute for Health Research, Health Technology Assessment Commissioning Board member (2014 – present) • Deputy Chair, University of Stirling, NHS and Invasive research Committee (2017 – current); Chair (2014- 16); University of Stirling Ethics Committee Review Committee (2014 – current) • Chair, Trial Steering Committee, NIHR Programme Grant : The REACH Pregnancy Programme [Research for Equitable Antenatal Care and Health in Pregnancy] Prof Angela Harding (PI), University of East London/Barts Health NHS Trust. (2015 – current) http://www.nihr.ac.uk/newsroom/research-news/major-new-research-in-to-improving-antenatal-care/2641 • Steering Committee Member. Evaluation of the outcomes of the Family Nurse partnership Programme in Scotland. Cardiff University, Centre for Trials Research. Funded by Scottish Government. (2016 – current) http://www.cardiff.ac.uk/centre-for-trials-research/research/studies-and-trials/view/evaluation-of-family-nurse-partnership-fnp-in-scotland • Steering Committee member. NIHR PHR Project reference: 14/185/13 Title: Healthy Dads, Healthy Kids UK: a cultural adaptation and feasibility study of a weight management programme for fathers of younger children (2016 – current) • Chair, Trial Steering Committee: NIHR/HTA study on peer support for breast-feeding using motivational interviewing (Ref: 13/18/05), University of Cardiff, Department of Primary Care. PI Dr S Paranjothy. (2014 – 16) http://www.nets.nihr.ac.uk/__data/assets/pdf_file/0020/130673/PRO-13-18-05.pdf • Evidence and Data sub group member of The Scottish Government review of provision of maternity and neonatal services in Scotland. (2015 – 16) http://news.scotland.gov.uk/News/Maternity-and-neonatal-services-1673.aspx • Chair, Cancer Research UK Advisory Panel for a funded Study on Social Network Support for Smoking Cessation in Pregnancy. PI Fiona Dobbie. (2014 – current) • National Institute for Health Research, Health Technology Assessment Primary Care Themed Call Board Member (2013 – 14) • Member Royal College of General Practitioners, Scottish Academic Forum (2012 – current) • UNICEF UK. National Infant Feeding Committee and partnership forum. One of six invited members with a remit to advise governments on policy and practice. (2011 – 2013)

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles and Journal/Editorial roles

Name	Journals edited	Committees
Alex Pollock	<p>Editorial Boards:</p> <ul style="list-style-type: none"> • Editorial Board - Cochrane Collaboration Stroke Review Group [2008-date] and Associate Editor [2015-date] <p>Peer reviewing (journals)</p> <ul style="list-style-type: none"> • Stroke • Cochrane Library • Disability and Rehabilitation • Journal of Rehabilitation • Journal of Physiotherapy • Neurorehabilitation and Neural Repair • BMC Complementary and Alternative Medicine • Clinical Rehabilitation • BMC Health Services Research • JAMA Ophthalmology • British Journal of Occupational Therapy • PLoS ONE <p>Peer reviewing (grant proposals)</p> <ul style="list-style-type: none"> • Action Medical Research • Stroke Association • Chief Scientist Office • Physiotherapy Research Foundation • National Institute for Health Research Central Commissioning Facility Research for Patient Benefit Programme • NHS Grampian Endowments • Dunhill Medical Trust 	<ul style="list-style-type: none"> • Cochrane Rehabilitation - Advisory Group Member (2017 – current) • Co-Lead – GRADE in Overviews, GRADE project group (2015 – current) • Task Group member – Cochrane Consumer principles task group (2016 – current) • James Lind Alliance – member (with lead role) of Life after Stroke Priority Setting Partnership (2009-2012) • Scottish Stroke and Vision Steering Group – steering group member (2010-current) • Scottish Stroke Allied Health Professions (SSAHP) Forum – committee member (2011-2016) • VISTA-Rehab – steering group member (2009-current) • SIGN (Scottish Intercollegiate Guidelines Network) Stroke rehabilitation guidelines (SIGN 118) – committee member (2009-2010)

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Name	Journals edited	Committees
Marian Brady	<p>Editorial Boards</p> <ul style="list-style-type: none"> • Cochrane Collaboration Stroke Review Group [2012-date] and Associate Editor [2016-date] • Cochrane Collaboration Wounds Review Group • Stroke Matters [2010-12] • The Open Rehabilitation Journal [http://bentham.org/open/torehj/] <p>International Major Grant Awarding Bodies</p> <ul style="list-style-type: none"> • British Council India - UK-India Education Research Initiative, INDIA • Welcome Trust/Department of Biotechnology (DBT) India Alliance, INDIA. • The Netherlands Organisation for Health Research and Development (ZonMw), THE NETHERLANDS. • Population Health Sciences & Health Services Research of the Health Research Board, IRELAND • Research Grants Council of Hong Kong, CHINA. • Heart and Stroke Foundation. Canadian Partnership for Stroke Recovery (CPSR), CANADA. • Swiss National Science Foundation, SWITZERLAND. <p>National Major Grant Awarding Bodies</p> <ul style="list-style-type: none"> • British Aphasiology Society, UK • Chief Scientist Office Research Grants, UK. • HTA College of Experts, UK. • Medical Research Council, UK • NETSCC, Service Delivery and Organisation, UK. • NIHR Research for Patient Benefit, UK. • Stroke Association Research Grant Panel • Stroke Association Lectureship Panel <p>Other grant awards</p> <ul style="list-style-type: none"> • NHS Grampian Endowment Research Grant Applications; • West of Scotland Research & Development Research Grants. <p>Peer reviewing (journals)</p> <ul style="list-style-type: none"> • Age and Ageing • Aphasiology • American Journal of Infection Control • Archives of Physical Medicine and Rehabilitation • Biomed Central Public Health Journal • British Medical Journal • Clinical Rehabilitation • CMAJ (Canadian Medical Association Journal) • Cochrane Stroke Review Group • Cochrane Wounds Review Group • Disability and Rehabilitation • Health Expectations • International Journal of Stroke • Journal of Clinical Epidemiology • Journal of Neurolinguistics • Open Communication Journal • Open Rehabilitation Journal • Stroke • Yonsei Medical Journal (Korean Medical Journal) <p>Other peer review</p> <p>International Scientific Advisory Panel (ISAP) for the Royal College of Nursing International Nursing Research Conference, UK</p>	<ul style="list-style-type: none"> • Chair – Virtual International Stroke Trials Archive for Rehabilitation trials (VIS-TA-Rehab) http://www.vistacollaboration.org [2009- date] • Chair & Main Proposer – The European Action Collaboration of Aphasia Trialists supported by European Cooperation in Science and Technology (COST and Tavistock Trust for Aphasia) [2013-2020]. http://www.cost.eu/domains_actions/isch/Actions/IS1208 • Committee Member – International Aphasia Committee for the International Association of Logopedics and Phoniatrics • Committee Member – Aphasia United Advisory (International). Founding member [2014-date] • Royal College of Speech and language therapists' representative - UK Stroke Forum (Training Committee, Steering Group, Scientific Committee, Programme Committee). • Committee Member – Council for Allied Health Professions Research (CAHPR) Professoriate [2015-date] • Committee Member – Stroke Association Scotland Committee (invited) [2012-2017] • Committee Member – Aphasia Advisory Committee, The Stroke Association [2016-date] • Council Member - Society for Research and Rehabilitation [2010-2012] • Royal College of Speech and Language Therapists (RCSLT) ACTNoW Working Group [2013-2015]

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles and Journal/Editorial roles

Name	Journals edited	Committees
Fiona Harris	<p>Editorial Boards:</p> <ul style="list-style-type: none"> • Academic Editor, PLoS ONE – an online open access journal. Editor for health-related manuscripts (2013-present) • Member of the editorial board of Sociological Research Online (2007-2010) <p>Peer reviewing (journals)</p> <ul style="list-style-type: none"> • BMJ • Social Science & Medicine • Health • Health & Social Care in the Community • Health Expectations • Sociology of Health & Illness • PLoS ONE • BMC Public Health • BMC Pregnancy & Childbirth • BMC Family Practice • Palliative Medicine • Midwifery • Journal of Advanced Nursing • Sociological Research Online <p>Peer reviewing (manuscripts)</p> <ul style="list-style-type: none"> • Palgrave Macmillan • Sage (research methods; sociology of health & illness) <p>Peer reviewing (grant proposals)</p> <ul style="list-style-type: none"> • ZonMW (Netherlands) • ESRC (grants and studentships) • NIHR (HTA and HSDR committees – grants and final reports) • Wellbeing of Women 	<ul style="list-style-type: none"> • Member of the Taught Postgraduate Programme Committee, Faculty of Health & Sport, University of Stirling • Member of the University of Stirling MRes Programme Course Director's Group • National Convenor of the ESRC Health, Families, Relationships & Demographic Change Pathway • Member of the ESRC DTP Pathway Convenor's Group, Scottish Graduate School for Social Science • Member of the Evidence Review Committee reporting to Scottish Health Technologies Group, Healthcare Improvement Scotland

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles and Journal/Editorial roles

Name	Journals edited	Committees
Gaylor Hoskins	<p>Journal Reviewer for:</p> <ul style="list-style-type: none"> • BMC Trials • BMC Pulmonary Medicine • Thorax • BMJ • British Journal of General Practice • Primary Care Respiratory Journal • Journal of the American Academy of Nurse Practitioners • Health Expectations • Palliative Medicine <p>Reviewer for the following research panels:</p> <ul style="list-style-type: none"> • NIHR • MRC • CSO 	<ul style="list-style-type: none"> • National UK Confidential Enquiry in to Asthma Deaths • Health Advocate for Save the Children • NHS QIS COPD Quality Standards (Spirometry sub group) • Long Term Conditions Collaborative Task & Finish Group. • National Respiratory MCN Learning Forum Steering Group • Asthma UK Scotland Advisory Group. • Alliance of Self Care Research. • International Primary Care Respiratory Group (IPCRG) • Governance Committee for the CNO funded Clinical Academic Research Careers programme of work. • Smaller high level sub-committees related to the above. • NICR Ethics Committee, University of Stirling. • Development group for the introduction of the MMIs in Stirling. • West of Scotland Respiratory Research Group. • Scottish Allergy & Respiratory Academy. • Fife Children & Young Peoples Asthma Group (MCN sub group) 2008 – ongoing. • Fife Paediatric Asthma Clinical Care Pathway Group 2011 • West of Scotland Respiratory Clinical Research Network 2012 – ongoing. • Fife Respiratory MCN 2009 – 2012. • Education & Development Group - Fife Respiratory MCN (Chair) 2011 – 2012. • Education Strategy Group G&NEF CHP 2010 – 2012. • MCN Spirometry Working Group 2010 – 2012. • Fife Respiratory Clinical Care Pathway Group 2009-2010. • Fife Community Pulmonary Rehabilitation Steering/Working Group 2008 – 12. • Fife Long Term Conditions Collaborative Task & Finish Group 2009-10. • D&WF Respiratory Task Group, 2004 to 2012. Established by South Fife LHCC to promote and support respiratory activity in general practice.

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles and Journal/Editorial roles

Name	Journals edited	Committees
Doreen McClurg	<p>Journal Reviewer for:</p> <ul style="list-style-type: none"> • Physiotherapy • Australian Journal of Physiotherapy • Neurourology and Urodynamics • BJOG <p>Reviewer for the following research panels:</p> <ul style="list-style-type: none"> • National Institute for Health Research Central Commissioning Facility End of Life and Add on Studies Sit on panel • Multiple Sclerosis Society (on panel) • NIHR • Chartered Society of Physiotherapy 	<ul style="list-style-type: none"> • NICE Guideline Development Group- Urinary Incontinence and Prolapse – Commenced March 2017 • Member of the NICE Guideline Development Group for CG 148 • Member of the West of Scotland Research Ethics Committee • Member of the Scottish Government Short life working group and the Expert Group on MESH • Chair Trial Steering Committee Alternatives to prophylactic Antibiotics for the treatment of Recurrent urinary tract infection in women (ALTAR study); a pragmatic randomised trial of urinary antiseptic versus prophylactic antibiotic • Trial Steering Committee 'Sacral nerve stimulation versus the FENIXT Magnetic sphincter augmentation for adult faecal incontinence: a Randomised Investigation. SAFARI'. HTA Funded. Commenced 2015 • Chair (2014-2017) Physiotherapy Committee of the International Continence Society • Chair (2013-2016) of the Executive Committee of the Professional Network of the Chartered Society of Physiotherapists Pelvic, Obstetric and Gynaecological Physiotherapists • Member of the Neuro-urology committee of the ICS – Appointed Sept 2016 • Member of the ICS Terminology and Standardisation Committee An International Urogynaecological Association (IUGA) / International Continence Society INTERNATIONAL (ICS) joint report on the terminology for the conservative management of female pelvic floor dysfunction 20123 - present • Member of the Pelvic Floor Clinical Study Group of the RCOG 2014 which is responsible for mentoring and identifying relevant areas of research • External Examiner University of Bradford Women's Health and Continence courses(2015-2018) • External examiner University of Ulster Post Grad Urology and Continence courses 2014-2017

Name	Journals edited	Committees
Emma France	<p>Peer reviewer for the following:</p> <ul style="list-style-type: none"> • Health Expectations • JAN • International Journal of Nursing Studies • Health Research Board (Ireland) 	<ul style="list-style-type: none"> • Forth Valley R&D Committee, 2010-2011 – representative for the School of Health Sciences • Member of the The GRADE-CERQual open working group (a sub-group of the GRADE working group), which was established to support the further development of the CERQual tool by facilitating the wide involvement of methodologists, researchers, reviewers and other end users (see: www.gradeworkinggroup.org/toolbox/index.htm). It consists of those with an interest in how to assess confidence in evidence from reviews of qualitative research who contribute to the ongoing development of CERQual.

Appendix 6: Core and University supported staff: committee membership and Journal/Editorial roles and Journal/Editorial roles

Name	Journals edited	Committees
Myzoon Ali	<p>Journal/Editorial</p> <ul style="list-style-type: none"> • Editorial Board Member: The Neurohospitalist <p>Peer reviewing</p> <p>Journals:</p> <ul style="list-style-type: none"> • Stroke • International Journal of Stroke • Disability and rehabilitation • NeuroRehabilitation and Neural Repair <p>Grants</p> <ul style="list-style-type: none"> • NIHR • NIHR Health Technology Assessment • Health Research Council of New Zealand 	<ul style="list-style-type: none"> • Coordinator: Virtual International Stroke Trials Archive(s) • Steering Committee member: VISTA-Rehab • Administration Coordinator, Short Term Scientific Mission Deputy Lead, Working Group 3 Deputy Lead, CATS collaboration • Lead: I-PRAISE Collaboration

Name	Journals edited	Committees
Andrew Elders	<p>Journal/Editorial</p> <ul style="list-style-type: none"> • Associate Statistical Editor, Cochrane Incontinence Group, since January 2017. <p>Journal Reviewing</p> <ul style="list-style-type: none"> • BMC Medical Research Methodology • BMJ • Health Expectations • Implementation Science • Midwifery <p>Reviewing for funding organisations</p> <ul style="list-style-type: none"> • Carnegie Trust • NIHR HTA 	<ul style="list-style-type: none"> • NINJA trial funded by NIHR Research for Patient Benefit programme (DMC member since July 2017) • DIAMONDS trial funded by NIHR HTA programme (TSC member since December 2016) • MIRROR trial funded by NIHR Efficacy and Mechanism Evaluation programme (TSC member since March 2016) • PostRD trial funded by the Royal College of Surgeons and Moorfields Eye Hospital (TSC member since January 2016) • MACRO NIHR Programme Grant (Programme Steering Committee member since December 2015) • RITUXILUP trial funded by Arthritis Research UK (DMC member since January 2015) • FACT trial funded by NIHR HTA programme (TSC member since September 2014) • UPSTREAM trial funded by NIHR HTA programme (TSC member since July 2014)

Appendix 7: Strategic Statement and summary of stakeholder responses

NMAHP Research Unit Strategic Statement 2010-2017

Introduction

Scotland continues to face significant challenges in poor population health due to persistent health inequalities and intergenerational deprivation. Successive Scottish Governments have sought to lead the way in re-shaping our health and social care systems to respond to these challenges and in supporting the development and testing of health care interventions and innovative health care solutions to improve population health and wellbeing. As a result, health research generated in Scotland has relevance and impact worldwide, and attracts significant external funding based on its reputation for innovation, quality and excellence. The NMAHP Research Unit contributes to this world-leading reputation through its research and capacity building activities.

The NHS in Scotland relies heavily on the contribution of NMAHPs, who outnumber medical staff more than five-fold (approx. 71,000 are NMAHPs compared with only 12,500 medical staff).¹ NMAHPs play the biggest role in delivering health care and working at its interface with social care, covering health promotion and illness prevention as well as acute and chronic healthcare, and across the lifespan from pre-conception through to palliative and end of life care. As such, they play a pivotal role in the delivery of all key health outcomes (indicators and targets) for the Scottish Government, the NHS and the people in Scotland. NMAHPs work at the coalface of delivery in both acute and community/home settings and are often the early warning system for detecting health and social care decline in patients and their families/carers.

The therapeutic interventions delivered by NMAHPs can maintain or enhance medical treatments (initiated by doctors) but are also often preventative, helping to avoid costly and more invasive or high risk treatments. For example, pre and post-treatment interventions can maximise the

benefits of surgery and minimise costly complications, and promote quick recovery for patients.

However, as with medical and surgical interventions, it is essential that the therapeutic and caring interventions delivered by NMAHPs are evidence based, high quality (safe, effective, efficient) and delivered in ways which are person-centred and equitable. The evidence base for NMAHP practice is increasing but compared with medical research it is still in its infancy and the majority of NMAHP interventions or new innovations still require empirical investigation. Most are complex interventions (non-pharmacological interventions made up of multiple interconnecting parts and often including or influenced by a caring relationship) likely to be delivered in complex and multi-disciplinary team settings such as hospital wards or community settings. Developing an evidence base for NMAHP interventions and NMAHP practice requires attention to novel methodological approaches, for example but not exclusively in the conduct of NMAHP trials.

The Chief Scientist Office (CSO) of the Scottish Government's Health and Social Care Directorate supports the NMAHP Research Unit to develop its evidence base and grow its national and international reputation for high quality NMAHP research. The Unit (initially the Nursing Research Initiative for Scotland) was founded in 1993 and is a recognised centre for excellence and collaboration in nursing, midwifery and allied health professions research.

The Unit's vision, developed by its staff in line with its remit from the CSO is:

- To conduct high quality applied research that enables nurses, midwives and allied health professionals to make a difference to the lives of the people of Scotland and beyond.

- To work with and enable the NHS and policy makers to identify effective and sustainable policies and interventions to impact on health and social care
- To be an internationally renowned and innovative centre of excellence for NMAHP Health and Social Care research.
- To maintain a highly supportive multidisciplinary environment and expand research capacity & capability across the professions to deliver the NMAHP researchers and research leaders of tomorrow.

The CSO has evaluated the benefits of its investment in the Unit and seen it grow through conducting a series of rigorous independent scientific reviews (2002, interim review 2007, 2010). At our last review in 2010 the feedback from CSO was that the Unit had developed a solid body of expertise in its areas of research. We were commended for the way in which our research both drew on and fed back into clinical practice. The Unit was seen as heading towards international excellence through a combination of its international collaborations and outputs. Below, we highlight progress and key achievements since our 2010 review.

Strategic Value: addressing NHS Scotland needs and Scottish health and social care priorities

Over the last 7 years the NMAHP RU has focused its activity on two strong programmes of research to impact on NMAHP practice and to benefit patient and population health.

Interventions: This programme evaluates the effectiveness and cost effectiveness of care and therapeutic interventions. Work clusters around research on fundamental care and therapy interventions, and methodological innovation. The programme focuses on interventions that affect many people, and/or interventions which have the potential to demonstrate substantial impact on people's health and wellbeing.

Quality and Delivery of Care: This programme is concerned with the quality and delivery of care including the up-take, and use of evidence based interventions and care delivery practices. It focuses on who delivers care; where, when and how it is delivered; and how to improve the implementation of evidence into professional practice. The processes by which professionals and service users make decisions about care are central elements of this programme, alongside patient experience and patient involvement.

In summary, these two programmes of research enable us to respond to and address a wide range of health care and clinical problems. The Interventions programme supports research that generates and evaluates potential solutions. The Quality & Delivery of Care programme focuses on identifying problems and variation in care quality and delivery, understanding why they occur and what can be done about them.

Within our programmes, we adopt a 'workstream' approach. We define a workstream as an explicit strategic plan constructed and delivered in partnership with researchers, health professionals, policy makers and patients/public (in accordance with NMAHP RU's public involvement policy) that clarifies the precise nature of a health or delivery related problem and outlines how a series of research studies and research related activities can contribute to removing, alleviating or ameliorating either the scale and/or severity of that problem. These strategic plans are not static but are dynamic – undergoing constant revision in the light of emerging knowledge and changing contexts, and through regular horizon scanning.

Although the Unit addresses many clinical areas much of our work is currently focused on Stroke rehabilitation, mental health, maternal & child health, urogenital disorders, cancer, and pre-hospital emergency care. We have expanded our international collaborations, resulting in several multi-national grant awards in Europe (EU COST Collaboration of Aphasia Trialists (CATS), EU Framework 7 Optimising Suicide Prevention in Europe (OSPI), EAHC Prevention of Depression through Networking in Europe (PREDI-NU)) and international multi-centre trials (PREVPROL). Since 2010 we have completed 88 projects (not including PhD studies) and currently have 42 active projects, the majority of which have attracted external funding to Scotland (UK and EU). Ely phase theory building,

Examples of recent projects led by the Unit include: The Scottish Person Centred Interventions Collaboration ScoPIC, which has evaluated two national schemes using different Ward Team approaches to improving patient experiences of care (Releasing Time to Care (Plus) and the Caring Behaviours Assurance System); the development and evaluation of a Patient Centred Assessment Method (PCAM) to improve nurse-led biopsychosocial assessment of patients with long term conditions and co-morbid mental health needs; the development of interventions to improve swallowing and quality of life in patients with head and neck cancer; a trial of abdominal massage to improve constipation in patients with multiple sclerosis; trials of pelvic floor muscle training for women with urinary incontinence and women with prolapse; and interventions to reduce obesity in men, among many others.

Impact

The Unit achieves impact through several mechanisms: its international reputation for research and recognition as experts in the field; engagement and close working with policy makers to deliver timely answers to urgent questions; and collaborating with NHS partners, professional bodies, recipients of healthcare and their

families/carers to develop research which meets their needs. We communicate to our wider stakeholders through a variety of mechanisms such as: membership of advisory or working groups; dissemination workshops designed for encouraging discussion, feedback and (what next) service implications; parliamentary receptions; multi-media dissemination of Research Briefings, Unit programme leaflets, Unit Newsletters; webinars; websites; publication in peer reviewed high impact journals; contribution to clinical guidelines; and presentations and workshops at conferences and NHS/Social care and Third Sector events.

We publish around 60 peer reviewed papers in high impact and relevant clinical and methodological journals including the Lancet, Journal of Advanced Nursing, International Journal of Nursing Studies, Cochrane Database of Systematic Reviews, Health Technology Assessment, Millbank Quarterly, Trials, BMC Health Services Research, BMC Family Practice, BMJ Open, European Journal of Oncology Nursing, Emergency Nurse, International Journal of Stroke, Supportive Care in Cancer, Pilot and Feasibility Studies, British Journal of Obstetrics and Gynaecology and many others.

Reputational impact

The following examples demonstrate some of the Unit's recognised achievements:

- A leading UK centre for research in maternal and child health and well-being, including maternal mental health: the Unit leads the Scottish Midwifery Research Collaboration involving 5 HEI's.
- An international lead for post-Stroke and Aphasia research: our RELEASE project involves 23 countries; we received the Robin Tavistock Award, an international honour for outstanding contribution to the world of aphasia (2016) and Honorary Life Membership of the Stroke Society of Australasia; and Stroke outputs have been referenced in UK, Irish, Australian, Norwegian, Canadian, New Zealand and Dutch clinical guidelines.

Appendix 7: Strategic Statement and summary of stakeholder responses

- The leading UK centre for Cochrane Reviews in the field of Stroke (authoring the top 3 of their top 10 most accessed reviews in Stroke). Membership of the Editorial Board - Cochrane Collaboration Stroke Review Group (with 2 staff members as Associate Editors), and the Cochrane Collaboration Wounds Review Group.
 - Leading the majority of pre-hospital emergency care research in Scotland as part of a key strategic partnership with the Scottish Ambulance Service; and a major partner in UK collaborative research.
 - One of the leading centres internationally for research into non-surgical treatment of urological and Uro-gynaecological problems in women: we received the Dorothy Mandelstam Award 2011 from the Association for Continence Advice for INSPIRE. The award acknowledges a continence service development that improves the quality of patient care.
 - One of the leading centre's internationally in NMAHP trials, having the unique methodological skills required for the complexity of NMAHP multi centre RCTs to test the effectiveness and cost-effectiveness of NMAHP interventions and translate this research into NMAHP practice.
 - Gaining a reputation in developing innovative IT based solutions to effect behaviour change in key areas for health such as smoking cessation in pregnancy, tackling obesity, compliance with physiotherapy in cystic fibrosis and asthma management.
 - Known for developing and supporting current and future NMAHP research leaders (including a strong 'professoriate') to lead and drive research developments in priority areas for nursing, healthcare and economic growth in Scotland.
- Engagement with policy makers, practitioners, and service providers
- We work in close partnership with the Chief Nursing Officer for Scotland to respond, with timely research, to requests for evidence to enable strong decision making. Recent examples include producing reviews of evidence to support policy decisions relating to the clinical supervision of midwives, the roles of school-based and practice nurses, evidence for safe staffing, and communication errors; and bespoke evaluation of large scale intervention roll-out such as the ScoPIC study.
- We collaborate with Healthcare Improvement Scotland (HIS): in up-dating Best Practice Statements; contributing implementation science expertise to the Integrated Systems Workflow project; and in jointly sponsoring their annual research conference on improvement.
- We similarly collaborate with NHS Education Scotland: developing a framework for clinical academic careers; producing a publication of clinical academic career stories; promoting clinical academic careers and supporting fellowship applications.
- We sit on many other NHS related working groups or input our research to local NHS sites, examples include: NHS Health Scotland's Primary Care Transformation Research and Evaluation Collaboration; NHS24 and Psychiatric Emergency Patient Journeys; NHS Lanarkshire's Distress Brief Intervention implementation; the Perinatal Mental Health Managed Clinical Network for Scotland; Scottish Ambulance Service R&D committee; and NHS Forth Valley's R&D Committee.

In addition to our support to CNO, we contribute to other Government working groups or policy activities such as: the Scottish Government Mental Health Policy Implementation Group 2013-2015; Evaluation of Primary Care Transformation Fund projects 2017; Maternity and Cancer Patient experience surveys; evidence reviews and research to inform understanding of the Scottish Government programme of integration of health and social care in the early years.

We work with a range of Third sector partners in providing advisory support to their projects, collaborating in research partnerships, or independently evaluating their initiatives, such as: Mental Health Foundation See Me Expert Advisory Group member; See Me Change Agents research partnership; Aberlour, Scotland's Children's Charity research partnership and evaluation of the Perinatal Befriending Support Service; Maternal Mental Health Scotland; Stroke Association, and Macmillan Cancer Support.

We regularly engage with Professional bodies to obtain peer review of research ideas, disseminate research findings, provide feedback to strategic or policy agendas, and discuss shared priorities through meetings with senior leaders, membership of professional working groups, and presentations to professional conferences and workshops. Organisations include the Royal College of Midwives, the Royal College of Nursing, the Queen's Nursing Institute for Scotland, the Federation of Allied Health Professionals, the Scottish Practice Nurses Association, the Pelvic Obstetric and Gynaecological Physiotherapy network; and the European Oncology Nursing Society.

Public Engagement/Patient Public Involvement (PPI)

The NMAHP RU involves public/patients/carers and families in the majority of its research projects as well as PPI representative organisations e.g. Health and Social Care Alliance collaboration in the NIHR HS&DR PCAM

study; the Authors and Consumers Together Acting on Evidence (ACTIVE) Cochrane study; James Lind Alliance setting priorities for Stroke research; Maternal Mental Health Change Agents (MMHCA).

The Unit has hosted and led Life After Stroke open days, a Cancer Survivorship summer school, and other events open to patients and the public. Our PPI partners have been involved in research projects as co-applicants, co-authors, co-presenters and members of steering groups. The MMHCA received substantial support (for training and to complete required NHS ethics and NHS Research and Development governance processes) to undertake their own research.

Capacity building

The Unit has a strong commitment to developing research capacity in nurses, midwives and allied health professionals. Our staff are actively engaged in a range of leadership and research governance roles and professional activities to develop nursing, midwifery and allied health professional practice and research, both nationally and internationally. The Unit has supported and administered several schemes to support the development of clinical academic careers in Scotland: the Re-engagement Fellowship Scheme on behalf of the Chief Nursing Office (CNO); the Clinical Academic Research Fellowship Scheme (CNO); the NMAHP award scheme (CNO); and the Vale of Leven commemorative scholarship scheme (CNO). We are currently leading a major project, Recognising European Cancer Nursing (RECaN), to enhance the recognition of cancer nurses across Europe, in collaboration with the European CanCer Organisation (ECCO).

We have secured competitive funding for CSO studentships, CSO postdoctoral funding, Stroke Association junior training fellowships, Stroke Association senior research training fellowships and a Stroke Association Clinical Lectureship.

The Unit supports the development of several collaborations to increase research capacity across HEI's in Scotland (and beyond) and/or NHS professions, these include:

- The Scottish Midwifery Research Collaboration (the SMART group) involving leading midwife researchers from five HEIs. A CNO funded grant supported three collaborative research projects.
- A strategic research partnership with the Scottish Ambulance Service which has led to developing a unique and internationally recognised programme of research in pre-hospital emergency care.
- Grant writing workshops which have been open to clinical academics on our fellowships schemes, any research interested professionals who approach the Unit, and the wide network of members involved in the Scottish Improvement Science Collaborating Centre.
- Research Master-classes for NHS Forth Valley and providing research support to its R&D Committee.
- Internationally we have hosted 3 training schools in Malta to develop Aphasia research and won a Carnegie Trust International Visiting Professorship which supported academic writing workshops across Scottish HEI's.
- The Unit has produced a Knowledge, Experience and Competencies framework for health services researchers and has introduced a phased implementation of this framework, providing training in each competency as identified by staff using internal expertise.

Academic value

The NMAHP RU benefits from being co-located at the University of Stirling (UoS) and Glasgow Caledonian University (GCU) and contributed to two Research Excellence Framework (REF) submissions in 2014. The UoS was ranked first in Scotland and 12th in the UK unit of assessment for Allied Health Professions, Dentistry, Nursing and Pharmacy, including achieving the highest UK

REF 2014 score for 'research environment' in its unit of assessment. Our inclusion at both institutions influenced the achievement of their rankings and the proportions of their research ranked at international levels of excellence: UoS was rated as having 86% of research at international levels of excellence (3* & 4*) with 45% as world leading; GCU was rated as having 89% at international levels of excellence with 24% as world leading. This compares with 20% (UoS) and 15% (GCU) ranked as world leading in the 2009 Research Assessment Exercise (RAE).

Return of investment

The Unit has more than doubled its staff numbers in the past 7 years. The NMAHP RU consists of 7 full-time core (CSO) funded academic posts with a further 7 full-time academic posts (3 at Professorial level) supported by our host institutions. The Unit has approximately 42 additional members of staff (depending on contract status) and 9 PhD students, all representing a range of Nursing, Midwifery and Allied Health Professionals as well as social scientists, statisticians, health services researchers, a primary care physician and social worker. In 2010, the Unit was engaged in research worth £2.9 million, annually administering £500k (Scientific Review, 2010 Vol 1.). The Unit is now engaged in research worth £22.8 million, annually administering over £6 million worth of grants which is then shared across HEI's, mostly other HEI's in Scotland. Our main funders include the Medical Research Council (MRC), National Institute for Health Research (NIHR) Health Technology Assessment (HTA), NIHR Health Services and Delivery Research (HS&DR), NIHR Public Health Research (PHR), CSO, European Cooperation in Science and Technology (COST), EU Framework 7, EU The Executive Agency for Health and Consumers, Scottish Government, Chief Nursing Office (CNO), Economic and Social Research Council (ESRC), as well as several major charities (e.g. Wellbeing of Women, Macmillan Cancer Support, The Stroke Association, MS Society, Breast Cancer Now, Carnegie Trust, Tavistock Trust for Aphasia).

Vision for the next 5 years

Key challenges and strategic priorities for the NHS and health and social care agenda.

The 2020 Vision for Health and Social Care will continue to guide policy in the coming review period, as reflected in The Chief Medical Officers (CMO) Annual report on Realistic Medicine and the publication of the National Clinical Strategy for Scotland.³⁻⁵ These policies emphasise: healthcare that focuses on outcomes that patient's value and reducing interventions that do not add value for patients; providing care at home and in the community which relies more and more on care delivered by NMAHPs. The key plans are: planning and delivery of primary care services around individuals and their communities; planning hospital networks at a national, regional or local level based on a population paradigm; providing high value, proportionate, effective and sustainable healthcare; transformational change supported by investment in e-health and technological advances. To meet these strategic priorities the Unit proposes a re-design of its work into three core programmes, described below. These programmes aim to reflect the expertise and skills that the Unit has developed since the last review and to show how these areas of interest (and skills) can be better utilised to respond to the health and social care priorities for Scotland.

Proposed research programmes

1. Improving the efficiency of research

As with all areas of Government spending and particularly health, there is a need to reduce research waste and enhance efficiency and where possible respond to the needs of policy makers and the NHS with more timely production of research. The Unit has made a leading contribution in enhancing the secondary use of pre-existing research data (e.g. from international trials), it has excelled in the production of systematic reviews of

existing research and in developing methodological innovations for producing systematic reviews. We have also engaged in using routine NHS data linked to trials data for cost-effective long-term trial follow-up and in using routine NHS linked datasets to understand patient pathways and identify at risk populations. This programme will provide a platform to showcase existing work and to extend the international excellence achieved in the field of Stroke, by applying lessons learned to other priority clinical areas such as Cancer and Mental Health.

2. Seamless systems and comprehensive care

The focus of this programme will be guided by five key changes to healthcare: placing people and their healthcare journeys at the heart of understanding quality and delivery of care; health and social care integration; the need for more care to be delivered at home; the crucial role that primary care will play in future delivery; changing roles of healthcare professionals and use of non-professionals. Going forward it will be important to understand how systems of care interface and integrate with each other; and how different systems operate to deliver seamless and comprehensive care for patients; and how NMAHP (and other new non-medical) roles contribute to this new system or how they need to adapt to do so. This programme will take forward learning from the previous QDC programme but with a new emphasis on people and their journey's, NMAHP enhancement of self-care, new ways/models of delivery that transverse health, social and third sectors, roles and skills mixes, and understanding enhanced NMAHP roles (such as Advanced Nurse Practitioners (ANPs)).

3. Interventions:

- a) Healthy living interventions; understanding behaviour change and how healthcare professionals contribute to making this sustainable
- b) Effective (NMAHP delivered) healthcare interventions

The importance of developing the evidence base for NMAHP interventions is still a strong driver for the need to invest in an NMAHP Research Unit and in delivering a programme focused on interventions. However, in reflecting the future priorities for health and social care delivery and population health needs (the need to prevent illness and promote healthy behaviours and the role NMAHPs play in promotion and prevention), we aim to focus on developing the evidence base on two fronts: healthy living interventions, and healthcare (therapeutic) interventions. The Unit will continue to use its expertise in developing innovative IT (e-health) solutions in both the health promotion field as well as in developing therapeutic interventions.

Research in programmes 2 and 3 will ensure both systems of care and interventions are person-centred. This will be achieved at both programme and project development levels, with PPI partners involved at the earliest stages including priority setting exercises, as well as in the (person-centred) outcomes through which we evaluate systems and interventions.

Impact

We will continue to ensure we maintain our supportive and responsive relationship with key stakeholders in Government, the NHS and other partners central to health and social care integration.

We will continue to invest in active dissemination methods such as professional workshops and master classes for healthcare practitioners to engage with state of the art research in a particular area, placing the contribution of our own research within the wider field and enabling open discussion of the implications of findings for practice or service change

Capacity building and environment

We will continue to contribute to developing research capacity and capability for NMAHP researchers via: our PhD supervision; support to NMAHPs applying for PhD Fellowship or PhD studentship awards; grant writing groups.

We will continue to provide support to CNO or NHS Boards in administering any future clinical academic schemes; and to the strategic development of clinical academic careers schemes.

We will continue to enhance the research skills of Unit staff through our Knowledge, Experience and Competencies framework. A senior member of staff has been appointed to ensure the framework is implemented and supported with relevant training opportunities for all staff and students.

We will aim to develop further capacity in 2 key areas: Implementation science; and data science (using Big Data for efficiency in research). Both these areas aim to reduce waste in research costs by enhancing implementation of evidence and making better use of existing resources.

References

1. <http://www.isdscotland.org/Health-Topics/Workforce/Publications/data-tables.asp>
2. Scottish Government (2011) Achieving sustainable quality in Scotland's healthcare: a 20:20 vision. Edinburgh: Scottish Government.
3. Scottish Government (2013) A route map to the 2020 vision for health and social care. Edinburgh: Scottish Government.
4. Calderwood, C. (2016) Chief Medical Officer's annual report 2014-15: realistic medicine. Edinburgh: Scottish Government.
5. Scottish Government (2016) A national clinical strategy for Scotland. Edinburgh: Scottish Government.

Summary of Stakeholder Responses

The Chief Scientist Office circulated the NMAHP Research Unit Strategic Statement to various stakeholders groups across the NHS (Boards and Special Boards), Government/Policy and HEI's in Scotland.

The anonymised stakeholder responses to three questions posed by the CSO are presented below.

1. Is there significant strategic value to the Scottish Government and to NHS Scotland from CSO investing in NMAHP research and a centre of excellence in this discipline? What are the benefits of this investment?

- We believe that there is strategic value to SG and NHS Scotland from funding the NMAHP unit. It is well recognised that the lack of a robust evidence base for many NMAHP delivered interventions results in significant variation in the processes and outcomes of care disadvantaging sections of the patient population and creating challenges for policy makers. The NMAHP unit has a significant role to play in producing high quality research in a number of these therapeutic interventions as detailed in their statement.
- There is huge strategic value to Scottish Government, the NHS and wider health and social care providers to having a centre for excellence for NMAHP research. The benefits extend far beyond those listed as there is significant benefit for the people of Scotland who depend on high quality care from NMAHP practitioners and whose long term wellbeing is dependent on addressing some of the pressing public health challenges of our time, where nurses midwives and AHPs are on the front line.
- Yes we believe this to be the case. There is an urgent need to support AHPs to continue to develop and test the evidence base as they are at the forefront of patient care. Creating a Centre of Excellence is a fantastic initiative – we know patient needs after discharge from hospital are high and are very often unmet; it is AHPs who we need to deliver this care and bring innovative new practices into patient rehabilitation. Training AHPs in a research career and providing a Centre of Excellence for collaboration and research excellence to foster this community within a strongly evidence-based centre will be key steps towards making a critical difference to the long term recovery and quality of life for patients.
- The success of the unit in attracting funding for research in these areas illustrates the quality of the work they undertake as does their track record in the university REF process. Having a Scottish centre of excellence from which to draw NMAHP academic expertise for government led and more local NHS work to improve the quality of care is essential. Recent policy drivers including e.g. improving person-centred care, delivering realistic medicine and integrating health and social care can only benefit from the conceptual thinking and evidence development that academic enterprise produces.
- We now have an established group of experts able to undertake high quality research that underpins NMAHP practice. NMAHPs throughout the UK and beyond can access robust systematic reviews to support the development of clinical guidelines and pathways which are used as the basis of service improvement and service redesign across Scotland.

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- The NMAHP RU provides unique knowledge and skills around the most appropriate methodologies to use in complex intervention studies, which are also transferrable to other contexts. The Unit has a recognised excellent reputation for delivering high quality and useful research which is reflected in the number of successful grant applications to UK and European funding bodies and the number of publications in high impact peer reviewed journals and the number of NMAHPs successfully completing PhD studies. The unit's best practice statements are highly valued by NMAHP clinical staff and service managers. The programmes of work are high relevant in key priority areas where the evidence is needed to support and guide change and improvement. The research undertaken by the unit mirrors changes in practice emerging from policy or service improvement. By building change around an evidence base enables NMAHPs to establish robust baselines by which to measure the impact of the changes they make and capture the effect on service user outcomes.
- At a time of huge changes and pressures on the NHS and the GP workforce in particular, we need good evidence for new models of care in terms of effectiveness and cost-effectiveness. The NMAHP Unit is ideally placed to do this, in collaboration with others.
- I think there is great value in an NMAHP research unit but not as currently formulated. Other CSO units have taken on the role of providing expertise and methodological support to the wider community but NMAHP RU have tended to have a small and parochial focus to work in Stirling and GCU. After the capacity building process run by the Scottish government in NMAHPS there was momentum for this kind of research but this was not capitalised on by the NMAHP-RU working in tandem with those others around Scotland in the field.
- If this investment was done well it would see an upswell in research in rehabilitation and community care which is exactly the sector we need to develop to integrate health and social care and to assist supported self-management. The unit should be pioneering the methods needed such as record linkage and downstream RCTs, national research projects in the area and methodological techniques required for such work.
- No other research unit in Scotland has the breadth and depth of knowledge and expertise available via NMAHP. We are keen to see investment in more training programmes for AHPs – better understanding and varied models of provision are vital for longer term patient support. Placing individuals affected by whatever health care condition are vital if we are to develop a better understanding of what constitutes quality care.
- Within every area of research, the importance of evidence-based research of a high standard is recognised as being vital. When your research is within a community where communication is severely compromised, collecting, collating and disseminating this research is incredibly difficult but vitally important. The Scottish based NMAHP-RU has spearheaded an international collaboration of the highest quality – focused originally only within Europe, in Phase II they have an opportunity to include 'the rest of the world' and broaden their scope. The work being done here is not being done anywhere else, and is a resource to researchers around the world. I cannot emphasise enough how important this work is, nor the respect with which this project is held nationally and internationally.

2. What is the nature of your past interaction with NMAHP-RU and what are your views on the relevance and value of the work of NMAHP-RU?

- Across our organisation we have interacted with NMAHP-RU through personal contacts, the planning and running of an annual research symposium with 2 other CSO funded units, and contribution of academic expertise to specific projects. In addition, we have recently contracted with the unit to jointly with us revise a best practice statement with unit staff undertaking the systematic review element and HIS staff undertaking the steering group and project management element. This work is in its relatively early stages. In addition, we have had a few more strategic level discussions with senior staff on areas for collaboration and our staff have also attended events run by NMAHP-RU and vice versa.
- Building NMAHP researcher capacity - supporting NMAHP Re-engagement Fellowships
- The research undertaken as part of the re-engagement fellowships is highly relevant to practice. NMAHP RU has vital role in encouraging NMAHPs who have been research active in the past to rekindle their passion knowledge and skills to consolidate and further develop their research skills with the support and guidance from experienced research staff within the unit.
- NMAHP RU provide independent review of evidence to support the development of evidence based educational resources for NMAHP staff
- Staff from NMAHP RU have undertaken a number of reviews of evidence prior to new resources being developed. A rapid systematic review undertaken by the unit on Clinical Supervision contributed to the development of a national online education resource by NHS Education for Scotland.
- Contributing to development of model to support sustainable NMAHP Clinical Academic Research collaborations
- NMAHP RU hosted a summit bringing together key education and practice stakeholders to have a national debate on embedding and sustaining NMAHP Clinical Academic Research Collaborations. A national working group co-ordinated by staff at NMAHP RU have developed the first draft of a proposed model and pathway to support these collaborations.
- I have had intimate interaction with NMAHP RU. The research they do is of good quality but is of no more strategic value than any other good quality research in the area by any academic unit.
- I am totally committed to the relevance and value of the unit. There is a real need to have a central focus for the development of NMAHP research capability and capacity in Scotland and the unit does this well. I think that the relevance and value could be enhanced by a clearer engagement with the values set out in the Introduction of the strategic document attached. An emphasis on addressing inequalities, working at the interface with social care, preventative measures which keep people well for longer are central to our future. As the unit moves forward, it would be good to see these more fully reflected in the outputs listed in the impact section.
- I have worked collaboratively with the NMAHP Director Margaret Maxwell for many years on research projects, and through her role as an executive member of the Scottish School of Primary Care. The work of the unit is highly relevant to the needs of the people of Scotland and beyond. It is high quality and thus high value work.

3. What are your views on the relevance and importance of the future programme of research and other activities proposed by the Unit for the Scottish Government and/ or NHS Scotland and what are the opportunities for future engagement with NMAHP-RU?

- Building an evidence base for therapeutic NMAHP interventions should continue to be a priority area of work for the unit and it is positive that new approaches to care such as e-health solutions are identified in the proposed work programme. Given that so many of these interventions are complex and therefore subject to adaptation when transferred from context to context, development of approaches to identifying the key elements of both the intervention and the implementation approach of such interventions is likely to be crucial to reducing variation in the outcomes of care.
- Improving care using improvement science approaches will continue to be a priority for NHS Scotland and NMAHP RU could do much to support local teams to identify, evaluate and implement change delivered via improvement science methods through provision of robust, evidence based tools, training etc. Developing clinical academic careers for those with responsibility for local quality improvement as well as clinical care might also be a route for consideration. We would be keen to see this further worked up within the future programme in addition to the current reference to building capacity in improvement science.
- It is increasingly being recognised that in order to achieve research impact, particularly where the aim of the research is to influence policy and/or practice, it is necessary to engage with policymakers using more than traditional research dissemination approaches such as having a 'person from the service/government' on advisory groups, report dissemination and presenting at seminars etc. It means e.g. working more closely with policy makers to understand their research needs, identifying how the unit might address these, working with those delivering change to produce research that is both timely and relevant, influencing policymakers to adjust time lines to allow evidence to emerge, and collaborating in disseminating and communicating the work with those charged with implementation. This needs investment of time and perseverance on the part of researchers but ultimately is likely to result in more relevant research being undertaken and findings implemented. I think some of these elements might be built into the Improving the Efficiency of Research work strand although it is quite a different perspective to the one presented in that section.
- Collaborative funding programmes fit with our strategic funding model – we have demonstrated this in the last few years and we would be interested in future discussions in key areas of mutual interest to develop this further.
- We have seen the benefits of using aggregated data and fully support this knowledge being used to benefit other areas to improve efficiency.
- Placing people who are living with a condition at the heart of research – from developing the proposal to conducting, evaluation and feedback is crucial to the development of new models and interventions – there is much to be done to demonstrate we are committed to really making a difference to people's lives.
- The importance of the systems work strand cannot be overstated, as it is recognised that to achieve substantial change in the quality of care often requires a systems approach to avoid simply shifting issues from one area to another. Some recognition of the integration of health and social care needs to be included here particularly as the fundamental philosophical underpinnings of health care delivery and social care delivery are so different. The impact of these differences in terms of systems of care and people's experience of care is not yet well articulated, yet seamless care is seen as a priority for all. Collaboration with social care research organisations is likely to be required to implement approaches practically.

- There are a number of current NHS policy areas that would benefit from more evidence development and conceptual thinking, for example NMAHP care governance and professionalism. Research supporting areas such as approaches to measuring the quality of care delivered by NMAHPs is limited and as a result policy making tends to be in the absence of theory or empirical evidence. These are areas where greater engagement of the unit with policy makers over a prolonged period might have led to greater awareness of the evidence gap and also thinking of how these gaps might be filled. Realistic medicine and how this is to be implemented by the NMAHP community is another area that may benefit from some rigorous academic input to avoid unintended consequences. I think some consideration of the strategic priorities of NHSScotland could be more clearly articulated within the programme proposal.
- The plans seem like more of the same to me. Either the RU should involve all the relevant partners Stirling, GCU, QMU, Strathclyde, RGU etc. or the money should be used to setup a CSO research committee which funds specifically research into rehabilitation and community care.
- The programmes proposed are fundamental to NMAHPs' contribution to underpin safe, effective and person-centred care, and will enable the Unit to continue to provide the evidence to inform strategy in a way that supports change and improvements in practice. The proposed programmes of work will build on and consolidate the evidence base to demonstrate the impact of NMAHPs contribution to the delivery of health and social care services which will enable workforce planners and managers to design service delivery supported by an evidence base.
- Scotland is a small country and compared with our neighbours down south we have an opportunity to create synergy between NMAHP stakeholders and work truly collaboratively to realise the ambitions so beautifully articulated within the Introduction. This could involve strengthening the professoriate further by extending its reach across the universities, think tanks and other research institutes, engaging a wider group of researchers.
- We operate within a complex landscape where increasingly we offer care in partnership, not only with healthcare colleagues but also with social care and third sector organisations and most importantly with individuals, families and communities as we move towards more self-managed care. Clearly the NMAHP RU is a limited resource and attempting to engage across this landscape risks dilution of the expertise. However, I would urge the CSO to look across its programmes and align its funding to addressing the challenges of poor population health in much more creative and innovative ways, which are co-produced with communities.
- NMAHP-RU should continue to work collaboratively to strengthen and influence clinical academic research collaborations with a focus on policy, national priorities and impact. Moving forward, continue to strengthen the Unit's influence on: using innovative approaches to inform and assess the effectiveness of health and social care interventions; capacity building of NMAHP researchers; and encourage more NMAHPS to use evidence to inform their practice. Build on existing strategic collaborations between NMAHP RU and NHS Education for Scotland and contribute to impact and evaluation linked to new models of delivery and transforming roles.
- NMAHP-RU should ensure they maintain their strengths in systematic reviews which is very relevant to "Improving the efficiency of research". The focus on PPI input is also very relevant and important.

Appendix 8: Summary of NMAHP-RU Responses to the 2010 Review Recommendations

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Recommendation 1	Strategic planning, embedded in clear policies, should be at the heart of the Unit's push towards improvement, from the setting of research priorities across the Unit and in each of the programmes, to planning projects within clinical theme areas, to publication strategy, REF preparation and research translation.
NMAHP RU Action	<p>The NMAHP RU appointed a new Director immediately following the 2010 review (Prof. Brian Williams) who initiated the Workstream approach as a strategic method of prioritising research topics and attracting funding. This strategy included the planning of workstreams to address specific 'problems' and committing the Unit to the funding and conduct of the necessary work to see the problem through to impact/translation. In addition to this approach, the Unit has implemented regular grant writing workshops and (journal) writing retreats to deliver on grant and publication strategies.</p> <p>Additionally, the Unit developed a set of operational policies for staff and a staff induction manual. These are supported by six-monthly staff 'welcome' meetings where the Director and a Deputy Director present the Unit Programme and workstream approach to new staff.</p>
Recommendation 2	The Unit should focus further on its finances with the broad aim of improving sustainability. This should include applications to funding bodies outside Scotland, such as the Research Councils, the EU and major charities, and any other means to address sustainability in the longer term
NMAHP RU Action	<p>In the interim period since the last review, the Unit has made a substantial step change in its level of grant capture which has mainly been the product of its research strategy and its attention to gaining funding outside of Scotland (especially NIHR). Table 3 shows the increase in funding obtained from across the variety of funding sectors. This has enabled the Unit to grow its staff numbers and maintain stability of employment for this growing staff compliment. However, the stability of the continued CSO core funding enables and attracts high quality, experienced senior staff within the Unit who can secure the external funding to make this possible.</p>
Recommendation 3	The Unit should be encouraged in its ambition to become an international centre of excellence for specific areas of NMAHP research. The new director should use international collaborations strategically to help achieve this step-change.
NMAHP RU Action	<p>We believe the Unit has demonstrated that it is recognised as an international centre of excellence for specific areas of NMAHP research, especially in Stroke and Pelvic Health. The Unit has enhanced its international collaborations – leading or collaborating in EU projects and international trials. The reach of our international collaborations is demonstrated in Section 1.10.1.</p>
Recommendation 4	Research strategy should reflect a good balance between good science and translational outcomes. The strategy may need to be refreshed to meet the twin demands of the Research Excellence Framework for quality and impact, also reflected in the requirement from CSO for high quality research output with clinical and translational outreach. The Unit's publication strategy should also reflect attention to its different constituencies.
NMAHP RU Action	<p>The Unit has an established reputation for the quality of its research as evidenced in its methodological work in specific areas (NMAHP trials of complex interventions, Realist evaluation, systematic reviews, meta-ethnography) and in its international trials. The workstream approach has ensured attention to impact/ translation. In addition, the Unit has been gaining expertise in implementation science as a focus of its Quality and Delivery of Care programme in order to better address implementation problems. Our approach to intervention development and designing pragmatic trials (e.g. PRECIS-2) with built-in process evaluations to enhance real world acceptability and applicability also demonstrates our efforts towards clinical and organisational impact. The Unit has increased the quality of its publications but at the same time has embraced innovative dissemination strategies to reach wider audiences beyond academic colleagues (patient, public and front-line staff). Examples of these mechanisms are spread throughout this document, in our publication Altmetric analysis, our PPI activity and in individual workstream activity.</p>

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Recommendation 5	The two new programmes proposed by the Unit provide a suitable basis for moving into the future. In developing these programmes, along with their cross-cutting themes, the Unit should aim for conceptual clarity and avoid lack of focus.
NMAHP RU Action	We believe the matrix approach to linking workstreams across programmes and the operational mechanisms within workstreams which emphasise a (significant) problem focused approach (through to articulating impact) has provided a strong focus for our work.
Recommendation 6	The Unit should pay particular attention in Programme 1 (NMAHP Interventions) to conceptual clarity, priority-setting, addressing the balance of primary and secondary methodologies – with less emphasis on the latter, forming appropriate collaborations, and research translation.
NMAHP RU Action	This recommendation highlighted that the Unit had focused much of its work leading up to 2010 on evidence synthesis in key problem areas and that this should now move into primary research studies. We believe this balance has more than been addressed in the increase in both feasibility and full-scale trials (and the collaborations these have involved) conducted in the Unit in the interim period since the last review. The establishment of the Trials Management, Quantitative Methods Group, and Qualitative Methods in Trials groups has demonstrated the efforts the Unit has placed in growing this level of expertise in conducting primary research.
Recommendation 7	The Unit should pay particular attention in Programme 2 (Quality and Delivery of Care) to focus and balance across themes, to the ways in which the decision-making paradigm is utilised and packaged, and to planning and documenting impact.
NMAHP RU Action	The potential for the QDC programme to be spread thinly was recognised. The articulation of how the QDC programme would be integrated with the Interventions programme, and help take forward the its work into implementation, helped to provide focus for the QDC programme and its attention to implementation and impact. Additionally, the matrix model of linking the programme to the workstreams helped to ensure that the work of the QDC programme was spread across the Unit in all clinical areas. Decision making had been a ‘programme’ of work in the period 2003-2010 but within the QDC programme this was seen as better integrated within a broader perspective, specifically understanding decision making in context and how evidence based change is adopted and implemented. This was taken forward in the realist evaluation approach and the implementation science work (with attention to theoretical models/frameworks e.g. Re-Aim, PARIHS, Normalisation Process Theory) within the unit.
Recommendation 8	Research staff, particularly senior leaders, should have documented 5 year plans for their programme of work.
NMAHP RU Action	The workstream approach was seem as the primary mechanism for taking a strategic approach to planning future research /workload priorities for senior staff within the Unit. In addition to this, senior staff have become much more integrated into the management structures and the appraisal systems of the host institutions and to contributing to their priorities. This degree of forward planning is optimal in allowing for some degree of flexibility and responsiveness to new (funder) priority areas and HEI priorities.

Appendix 8: Summary of NMAHP-RU Responses to the 2010 Review Recommendations

Recommendation 9	Staff development should emphasize the development of strategic thinking, presentation and achieving esteem indicators
NMAHP RU Action	Both the previous Director and the current Director have undertaken Strategic Leadership training provided by the Leadership Foundation. Internal staff development days (run by external consultants) have also focused on identifying personal and team strengths/ attributes and Unit wide thinking on what the Unit does well and what strategies work well or could be enhanced to achieve the Unit's aims and vision. The Unit has quarterly staff meetings which are run by staff who identify learning needs that can be addressed either by internal or external facilitation (such as presentation skills, writing skills etc.). All staff employed by the Unit for six months or more participate in the appraisal scheme of their respective HEI to ensure attention to their personal and professional development and their contribution to the Unit and the host HEIs. We believe that it is the overall focus of the Unit to conduct high quality research and provide a supportive learning environment that leads to researchers being regarded in high esteem by external collaborators and organisations.
Recommendation 10	The Unit should continue to pay attention to the balance of its work across nursing, midwifery and the allied health professions.
NMAHP RU Action	We believe that since the last review the Unit has achieved a better balance across its senior staff in representing all NMAHPs at professorial level as well as at other staff grades. There is a better balance of research conducted in the Unit focusing on interventions and quality of care delivered across the range of NMAHPs. We can also demonstrate that our capacity and capability work within the Unit has been spread across all NMAHP professions (e.g. PhD supervision).
Recommendation 11	A new director should take necessary steps to ensure good awareness of the Unit amongst senior nursing professionals and strategic leaders.
NMAHP RU Action	The Unit has worked much more closely in this review period with strategic NMAHP leaders in Government/policy within the CNO. We have sought to maintain links with the Scottish Executive Nursing Directors and their research agenda's – having conversations with the SEND research lead. We engage with a range of NMAHP leads within NHS Boards in the research we conduct (see NHS Collaborators) as well as leads within special Boards (NES, HIS, Health Scotland). We also engage with other strategic leads in Nursing, Midwifery and AHP organisations such as the RCN, RCM (Prof. H Cheyne is the RCM Professor of Midwifery), POGP etc.
Recommendation 12	The host universities should see themselves as partners, along with CSO, co-investing in the Unit. We commend the University of Stirling's supportive stance and their commitment to investments in the Unit. We encourage Glasgow Caledonian University to more overtly embrace this partnership model of investment.
NMAHP RU Action	Both host Universities have continued to invest in the Unit alongside CSO. In particular, Glasgow Caledonian University has increased its investment in staff (see staff table in Section 1.4) and in its return of income to the Unit to enable strategic investment by the Director and to cover the gap in the funding for core staff and operational costs resulting from the fixed income from CSO. University of Stirling continues to contribute to posts (see staff table in Section 1.4) but also contributes to the operational costs of the Unit which are incurred due to the flat CSO core budget in recent years. The funding model differs for each HEI which makes for a mix of direct and indirect investment but the Unit values the input from both HEIs and the supportive relationship it has with senior management at each HEI.
Recommendation 13	The Review Team carefully considered the interregnum period, following the retirement of the current Director. The Deputy Director position will contribute to bridging the gap, but early progress with a new appointment was thought advantageous. We welcome Stirling University's commitment to advertising the post as soon as possible.
NMAHP RU Action	This was immediately undertaken following the 2010 review and Prof. Brian Williams was appointed and commenced in January 2011, remaining as Director until July 2016.

Appendix 9: Glossary

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ACTIVE	Authors and Consumers Together Impacting of Evidence
ANTIC study	Antibiotic Treatment for Intermittent Bladder Catheterisation: A randomised control trial of one daily prophylaxis
Altmetric Attention Score	The score is a weighted count of all of the mentions Altmetric has tracked for an individual research output, and is designed as an indicator of the amount and reach of the attention an item has received
AMBER	Abdominal massage for neurogenic bowel dysfunction in people with MS and spinal cord injury
ANPs	Advanced Nurse Practitioners
Aphasia	Also known as dysphasia, it arises as a result of brain damage where all forms of communication may be impaired (including speaking, listening, reading, writing, using numbers) to a greater extent than other cognitive components
AUKUH	Association of United Kingdom University Hospitals
BABI study	Breast feeding and breast pumps intervention
Barthel Index	An ordinal scale used to measure performance in activities of daily living (ADL). Each performance item is rated on this scale with a given number of points assigned to each level or ranking.
BIBS	Benefits of Incentives for Breastfeeding and Smoking Cessation in pregnancy
BMC	British Medical Council
BMJ	British Medical Journal
CATs Collaboration	Collaboration of Aphasia Trialists
CBT	Cognitive Behavioural Therapy
CHSS	Chest, Heart and Stroke Scotland
CNO	Chief Nursing Officer
Cochrane Collaboration	Produces and disseminates systematic reviews of healthcare interventions and promotes the search for evidence in the form of clinical trials and other studies of interventions
Complex intervention	Interventions that comprise a number of separate elements which seem essential to the proper functioning of the intervention, though the elements that are actually essential are difficult to specify
Core funded post	A staff position funded from the central budget of the NMAHP Research Unit
COSMOS study	A prospective exploration of the experiences and factors affecting the continuity of use of intermittent self-catheterisation in people with MS
CRUISE	Identifying messages for physiotherapists treating female urinary incontinence: a Cochrane overview of the evidence
CRUK	Cancer Research UK
CSO	Chief Scientist Office
Delphi Study	A consensus method that uses anonymous experts in an iterative questionnaire based study
DORIS	Database of Research in Stroke
ECCO	European Cancer Organisation
ESRC	Economic and Social Research Council
EVERLAP RCT	Early VERsus Later Augmented Physiotherapy (EVERLAP) compared with usual upper limb physiotherapy: an exploratory RCT of arm function after stroke

FARR Institute	The Farr Institute is a UK-wide research collaboration involving 21 academic institutions and health partners in England, Scotland and Wales.
fEC	Full economic costing - The forecasting and accounting for full economic costs at a project level. It is the basis of a Government directive to recover the full costs of research
FOCUS study	Fluoxetine or control unlocks stroke
Focus groups	Facilitated group discussions which aim to generate an understanding of the participants' experiences or beliefs.
Game of Stones	Feasibility study of how best to engage obese men in narrative SMS (short message system) and incentive interventions for weight loss, to inform a future effectiveness and cost-effectiveness trial.
G-AP tool	Goal setting and Action Planning
GCU	Glasgow Caledonian University
GIRFEC	Getting It Right For Every Child
HBC	Health Behaviour Change
HEI	Higher Education Institution
HERU	Health Economics Research Unit
HIS	Health improvement Scotland
HSDR	Health Services and Delivery Research
HSRU	The Health Services Research Unit (HSRU) is a CSO funded unit based at the University of Aberdeen. It has a national remit to research the best ways to provide healthcare, and to train those working in the health services in research methods
HTA	Health Technology Assessment. The HTA programme is part of the National Institute for Health Research. It produces independent research information about the effectiveness, costs and broader impact of healthcare treatments and tests for those who plan, provide or receive care in the NHS.
ifightdepression	The iFightDepression tool is an online, guided self-management programme that aims to help individuals with mild to moderate depression to self-manage their symptoms.
Impact factor	A measure of the citations to science and social science journals. It is frequently used as a proxy for the importance of a journal to its field
INDEX study	Identifying and assessing different approaches to developing complex intervention
IPEC	Improving Patients Experience of Care Study
James Lind Alliance	The JLA was established to help identify uncertainties about the effects of treatment considered important by patients and clinicians
JLAPSP	James Lind Alliance Priority Setting Partnership
JRCALC	Royal College Ambulance Service Liaison Committee
KCND	Keeping Childbirth Natural and Dynamic. The KCND programme has been developed to support the multi-professional team to implement the principles outlined in the Framework for Maternity Services in Scotland document.
LTCM	Long Term Condition Management

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MCH	Maternal and Child Health
MMHCA	Maternal Mental Health Change Agents
MRC (Medical Research Council)	A publicly-funded organisation dedicated to improving human health which supports research across the spectrum of medical sciences
MRC Conduct II Hub	Collaboration and innovation for difficult and complex randomised control trails
MULTICATH	Development and clinical trial of a mixed (multi/single-use) catheter management package for users of intermittent catheterisation
NES	NHS Education for Scotland
NHS Quality Improvement Scotland (NHS QIS)	A special health board. It is responsible for improving patient care across NHS Scotland
NICE	National Institute for Health and Care Excellence
NIHR	National Institute for Health Research
OPAL study	Optimal PFMT for Adherence Long Term: Multicentre randomised trial of the effectiveness and cost-effectiveness of basic versus biofeedback-mediated intensive pelvic floor muscle training for female stress or mixed urinary incontinence.
OSCAR	A Cochrane overview of interventions to improve upper limb function after stroke
Patient centred (approach/outcomes)	Patient centred approaches to outcome measurement aim to identify and quantify the changing nature of patient need, inform practice and provide a means to evaluate the day-to-day care provided by direct care staff, in partnership with their patients
PCAM	Patient Centred Assessment Method
PD	Parkinson's Disease
Pelvic Floor Muscle Training	A therapy for the treatment of pelvic floor disorders
Pelvic organ prolapse	This occurs when the pelvic floor muscles become weak or damaged and cannot support the pelvic organs, when organs drop from their natural position and sometimes protrude into the vagina
PFMT	Pelvic Floor Muscle Training
PPI representatives	Patient and Public representatives
PRAM project	Postnatal Resource Allocation Model
PRECIS – 2	PRagmatic Explanatory Continuum Indicator Summary - A tool to help trialists design better trials.
PREDI-NU	Prevention of Depression through Networking in Europe
PREMs	Patient Reported Experience Measures
PREVPROL trial	Multicentre randomised controlled trial of pelvic floor muscle training to prevent pelvic organ prolapse in women
PROMs	Patient Reported Outcome Measures
PROPEL	PROlapse and PFMT: implementing Evidence Locally – a study which funded by the NIHR HS&DR to formally investigate the uptake of PFMT for prolapse in diverse service settings in the UK.
PSP	Priority Setting Partnerships

Appendix 9: Glossary

QDC programme	Quality and Delivery of Care programme
OHC	Oral Health Care
OSCAR	A Cochrane overview of interventions to improve upper limb function after stroke
OSPI	Optimising Suicide Prevention in Europe
QI methodologies	A systematic study of participant viewpoints
QoL	Quality of life
QMG	Qualitative Methods Group
R&D Committee	Research and Development Committee
RAE	Research Assessment Exercise
Randomised Controlled Trial	An experimental research design in which participants are randomly assigned to intervention or control (no intervention) groups
Rankin Scale	The Modified Rankin Scale (mRS) measures degree of disability/dependence after a stroke.
Realistic evaluation framework	A research method commonly used in evaluation studies based on a realist philosophical perspective
ReCaN	Recognising European Cancer Nursing – a major European research project
REF	Research Excellence Framework
RELEASE study	Rehabilitation and recovery of people with aphasia after stroke
ReMoDe	A feasibility study for a trial of Recovery versus Mindfulness models for Depression
ROMEO study	Systematic reviews and integrated report on the quantitative and qualitative evidence base for the management of obesity in adult men
SAP	Stroke Associated Pneumonia
SAS	Scottish Ambulance Service
SCAMP	Feasibility of abdominal massage for the alleviation of symptoms in people with Parkinson's Disease
SCOPIC	The Scottish Person Centred Interventions Collaboration
SFC	Scottish Funding Council
SIGN	Scottish Intercollegiate Guidelines Network
SIP	Swallowing Intervention Package - aimed to develop a swallowing intervention in people with head and neck cancer
SISCC	Scottish Co-ordinating Centre for Implementation Science
SJR	SCImago Journal Rand
SMART	Scottish Midwifery Research Collaboration
SOCLE	A multi-centred, stepped wedge, cluster randomised controlled trial to compare the clinical and cost effectiveness of a complex oral health care in stroke settings: a phase II pilot trial
SPRUCE	Physical rehabilitation treatment approaches following stroke: Cochrane systematic review of the evidence

Appendix 9: Glossary

STARS	Stroke Awareness and Training Resources
Stepped wedge cluster RCT	A pragmatic trial design that randomises clusters instead of individuals.
SUPER feasibility study	Physical rehabilitation treatment approaches following stroke: Cochrane systematic review of the evidence
Systematic review	Systematic reviews summarise all pertinent evidence on a defined health question
TNS	Tibial nerve stimulation
TOPSY trial	Treatment Of Prolapse with Self-care pessary
UoA	University of Aberdeen
UTI	Urinary Tract Infection
Vaginal pessary	Support device worn within the vagina
VISTA	Virtual International Stroke Trials Archive
Vista Rehab	An international resource for stroke rehabilitation trials that can be used for novel exploratory analysis of anonymised data

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Photography: istock - DA4554

