



## Scottish Improvement Science Collaborating Centre

**Second Board meeting: 7<sup>th</sup> September 2016**

*Chair: Lord Naren Patel*

### Appendices

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On behalf of the Executive Group  
Scottish Improvement Science Collaborating Centre

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## Appendix 1

### SISCC background and purpose

The Scottish Improvement Science Collaborating Centre (SISCC) was established in August 2014. It is funded by a five-year £3.25 million grant from the Scottish Funding Council, Chief Scientist's Office, NHS Education for Scotland, and the Health Foundation, with substantial additional investment (circa £4 million) from partner organisations. A further grant of £500k from the Health Foundation has been awarded to support work on knowledge into action at scale. Led by the University of Dundee with NHS Tayside, this extensive and ambitious programme of work already includes eight universities and nine NHS Health Boards, as well as national partners and collaborators from NHS organisations, voluntary and community groups, and local authorities. SISCC was launched formally at an event on 5th June 2015.

The SISCC brings together researchers, NHS and social care staff, policy makers, educators, and people from the third sector from across Scotland and internationally in a coordinated and coherent way, thereby adding value to existing investment, working to deliver a 'step change' in improvement knowledge and practice, and maximising benefit for Scotland and beyond.

#### **1.1 Aims and objectives**

The Scottish Improvement Science Collaborating Centre aims to strengthen the evidence base for improving the quality of care sustainably and at scale. As specified by the programme commissioners, this includes:

- disseminating the improvement science knowledge base to practitioners, decision-makers, and the public
- facilitating translation of knowledge into improvement activity, practice and policy
- building engagement, capacity and capability across a network of researchers, practitioners, policymakers, and advocacy and user groups
- defining new approaches to improvement methodology
- establishing a foundation for future work

We are achieving these aims through developing the science, designing and testing large-scale change processes, evolving real change in practice, and building capacity and capability in the research and practice communities.

Our ultimate goal is to inform action that will have a positive impact on four outcome domains: safety and reliability, care and compassion, reducing inequalities, and improving health and wellbeing.

Our aims are ambitious for a small entity in a complex landscape. By the end of year five we will have completed and evaluated at least three large-scale improvement programmes with potential to change working practices and improve outcomes, and we will have used our work to inform a taxonomy for use in planning large-scale change. We will have attracted significant external funds and established a sustainable foundation for future development. We will have developed strong relationships and collaborations with others working in the

field of evidence-based improvement. Our plan is to become a world-class national resource, and a platform from which to build the best research and practice in the field of improvement science. Our logic model summarises our plan (Figure 1).

## 1.2 Approach

The challenge of improving outcomes through implementing change at scale is the focus of our programme. This requires a strong evidence base to ensure that the changes result in positive outcomes, avoid harm, are sustainable and cost-effective, and can be replicated. To maximise the learning from the different components of our programme, our work is integrated and involves close collaboration and communication.

Our approach to this work derives from our experience in research, in quality improvement, in implementing change at scale, and from existing studies and reviews. Building relationships, changing conversations, working in partnership to try out and evaluate new approaches, and tailoring approaches to local circumstances through engagement and co-ownership by staff and service users, all seem to be key. These attributes inform the core principles of our programme; we are striving to use these principles throughout our programme, while noting that to some partners they are innovative, and that they introduce additional complexity to the work. The principles are compatible with current policy directions and derive from our reading of current evidence:

- interdisciplinary and cross-sectoral working, including both health and social care
- participation, engagement and co-creation
- building on existing strength - ours and others
- basing our work on high-quality evidence and embedding evaluation in all our activities
- drawing on, and developing, context-appropriate evidence and theory.

At the heart of the challenge facing health services, social care, and society as a whole, is how to design and deliver evidence-based, high quality, compassionate care and services that improve health and well-being and avoid causing harm, on a consistent basis. Finding out how to improve outcomes through implementing sustainable change at scale is a significant challenge for the NHS and social care in Scotland, and health and social care systems internationally. It is this challenge that the SISCC is charged with addressing. The importance of this work explains much of the strong interest in SISCC's work that exists across Scotland and beyond.

A number of issues are critical to understanding the context in which SISCC is working. A short summary of some of these is given here as important background to the decisions we have made about the shape of the programme, and the challenges that we are addressing:

It is evident that the SISCC is a very important development for many organisations and individuals in Scotland and beyond; that has manifested in lively debate and discussion within and outside the programme from the beginning. Those involved in the field of quality improvement in health and social care are interested and concerned that the work synergises with, and brings added value to, the already rich improvement landscape in Scotland. The main added value of the SISCC to the existing improvement landscape is to

bring research skills and knowledge to bear on the important questions of the best ways to move evidence into everyday practice and to improve outcomes, care and systems. To this end, we have worked to develop successful relationships with a wide range of organisations and individuals across health and social care, universities, the third sector including service users and carers, advocacy groups, charities and the public, and government. Our aim is to work effectively with all.

Since this work was envisioned and the brief was written, and even since the SISCC was commissioned, there have been changes that affect, substantively, the improvement landscape in Scotland. These include the integration of health and social care, and development of new educational opportunities, as well as changes in personnel and structures of key partners, including NHS Education for Scotland, Healthcare Improvement Scotland, and NHS Tayside. We are working actively to respond to these changes – which are likely, ultimately, to result in very positive new opportunities - while recognising that this process takes additional time (ours and others) to negotiate and evolve shared developments.

Clarity around terminology is essential in this field, where diverse approaches and language are in use. Two issues are of immediate importance to us; the concept of ‘sustainable change at scale’, and the term ‘improvement science’ itself. A brief description of our thinking is given here:

By ‘sustainable change at scale’ we mean evidence-based positive change, without adverse consequences, that becomes embedded in every practice, well beyond the life of any project; and that is implemented widely across a range of relevant settings

‘Improvement science’ incorporates a range of approaches to improving health and care, with diverse provenance and drawing on different theoretical models (and none). SISCC has the opportunity to learn lessons from all of this work, and to build on existing knowledge to develop and test context-appropriate approaches to improve understanding of the active components that will result in effective change. *Quality improvement approaches* tend to draw on industrial models and to focus primarily on processes. *Implementation or knowledge translation approaches* tend to derive from the application of evidence for effective practices, derived from empirical studies and systematic reviews into practice settings and policy. *Practice development* is a strand of work associated mainly with nursing, midwifery and allied health professions, which tends to focus on the implementation of evidence-based practice to improve care in specific practice settings. The field of *behaviour change*, whether at individual, group or organisation level, derives from research in the fields of psychology and management. All these approaches have important contributions to make to understanding the improvement science field. While they have been widely debated and used, the empirical evidence base for the use of different approaches at scale to achieve sustainable improvement in different health and social care contexts is limited.

We are working to inform action that will make a difference in four outcome domains, all of which are crucial in improving the quality of health and social care. These are; improving safety and reliability, increasing care and compassion, reducing inequalities, and improving health and well-being. Our focus on a balance across these outcome domains is informed by a recognition that they are interconnected. Investigations of system failures in health and

social care have consistently identified a lack of care and compassion as a key factor. Progress on improving care, health and well-being will rely on identifying effective ways of reaching those most likely to have the worst outcomes, thereby reducing the impact of health, social, and economic inequalities. Identifying outcomes that matter to practitioners, patients, carers, and the public is of fundamental importance, and that offers a considerable challenge in itself. Identifying appropriate measures for these domains creates additional substantial challenges. A combination of quantitative and qualitative approaches is essential, and these need to be applied accurately, at scale, and in a timely way. The collaborative research expertise needed to develop this work is considerable, and the interdisciplinary and cross-sectoral composition of the SISCC team will be essential in identifying and developing new methods of measurement.

## Appendix 2 SISCC Staff and Executive Group

### *2.1 Membership of Board, Executive Group, Core Partners and Advisory Groups*

#### SISCC Board

<b>Name</b>	<b>Affiliation</b>
Lord Naren Patel (Chair)	Professor Emeritus of Obstetrics and Gynaecology, and Chancellor, University of Dundee
Professor Ian Graham	Professor, Department of Epidemiology and Community Medicine, University of Ottawa
Professor Naomi Fulop	Professor of Health Care Organisation and Management, Department for Applied Health Research, University College London and London CLAHRC
Dame Joan Stringer	Formerly Principal and Vice Chancellor, Edinburgh Napier University
Sir Harry Burns	Professor of Global Public Health, University of Strathclyde
Mr Richard Norris	Director, Scottish Health Council
Professor Sue Mawson	Professor of Rehabilitation in the Centre for Health and Social Care Research, Sheffield Hallam University and visiting Professor at University of Sheffield
Paul Gray	Director General, Health and Social Care and Chief Executive NHS Scotland
Jim McGoldrick	Convener of the Scottish Social Services Council

## SISCC Executive Group and Core Partners

<b>Executive Group</b>	
<b>Name</b>	<b>Affiliation</b>
Professor Mary Renfrew	SISCC Director, Professor of Mother and Infant Health and Director, Mother and Infant Research Unit, University of Dundee
Allyson Angus	Public Involvement Manager, NHS Tayside
Diane Campbell	Associate Director for Patient Safety, NHS Tayside
Professor Peter Davey	Lead for Clinical Quality Improvement, University of Dundee
Professor Brendan McCormack	Head of the Division of Nursing, Head of QMU Graduate School Associate Director Centre for Person-centred Practice Research, Queen Margaret University
Professor Bruce Guthrie	Professor of Primary Care Medicine, University of Dundee
Dr Margaret Hannah	Director of Public Health, NHS Fife
Professor Margaret Maxwell	Deputy Director of the Nursing, Midwifery and Allied Health Professionals Research Unit, University of Stirling
Professor Thilo Kroll	Professor of Disability and Public Health, University of Dundee
Professor Helen Cheyne	Professor of Maternal and Child Health Research, Nursing, Midwifery and Allied Health Professionals Research Unit, University of Stirling
Professor Craig Ramsay	Health Care Assessment Programme Director, University of Aberdeen
Professor Kevin Rooney	Professor of Care Improvement, University of West of Scotland
Dr Cameron Stark	Consultant in Public Health Medicine and Head of Improvement Science, NHS Highland
John Walker	Executive Director of Housing & Community Care, Perth and Kinross Council
Professor Jayne Donaldson	Head of School of Health Sciences, University of Stirling
Professor Brian Williams	Director of the Nursing, Midwifery and Allied Health Professionals Research Unit, University of Stirling

<b>Core Partners</b>	
<b>Name</b>	<b>Affiliation</b>
Professor Jan Clarkson	Director, Effective Dental Practice Programme, NES and Co-Director, Dental Health Research Unit, University of Dundee
Dr Phyllis Easton	Health Intelligence Officer, NHS Tayside
Dr Jacqui Morris	Senior Research Fellow, NMAHP Unit, Glasgow Caledonian University
Dr Steve MacGillivray	Senior Research Fellow, School of Nursing and Health Science, University of Dundee
Prof Ronan O'Carroll	Professor of Psychology, University of Stirling
Dr Emily Jefferson	Director, Health Informatics Centre (HIC) Services and Co-Director, Farr Institute of Medical Informatics Research, University of Dundee
Dr Elaine Lee	Senior Lecturer and Head of Postgraduate/Postqualifying Studies, School of Nursing and Health Science, University of Dundee
Kevin Geddes	Director of Development and Improvement, Health and Social Care Alliance Scotland (the ALLIANCE)
Lisa Curtice	Programme Director, "People Powered Health and Wellbeing: shifting the balance of power", Health and Social Care Alliance Scotland (the ALLIANCE)

## SISCC Advisory Group Members

<b>SISCC Advisory Group</b>	<b>Member Name</b>	<b>Affiliation</b>
<b>Improvement Science Methods</b>	<b>Craig Ramsay - Chair</b>	Health Care Assessment Programme Director, University of Aberdeen
	Allyson Angus	Public Involvement Manager, NHS Tayside
	Brian Williams	Director, NMAHP Research Unit, University of Stirling
	Graham Scotland	Health Economist, University of Aberdeen
	Mary Renfrew	SISCC Director, University of Dundee
	Ruth Glassborow	Director of Safety and Improvement, Healthcare Improvement Scotland
	Susan Bishop	National Lead Primary Care, Community and Outpatients, QuEST Head of Improvement Programmes, Joint Improvement Team, Scottish Government
	Brendan McCormack	Head of the Division of Nursing, Queen Margaret University
	Brian Robson	Executive Medical Director, Healthcare Improvement Scotland
	Bruce Guthrie	Professor of Primary Care Medicine, University of Dundee
	Cameron Stark	Consultant in Public Health Medicine and Head of Improvement Science, NHS Highland
	Justin Waring	Professor of Organisational Sociology, Nottingham University
	Kevin Rooney	Professor of Care Improvement, University of West of Scotland
	Thilo Kroll	Professor of Disability and Public Health, SDHI, University of Dundee
<b>Innovation</b>	<b>Michael Hambly - Chair</b>	Founder, International Futures Forum
	Margaret Hannah	Director of Public Health, NHS Fife
	Graham Leicester	Founder, International Futures Forum
	Brian Robson	Executive Clinical Director, Healthcare Improvement Scotland
<b>Knowledge Interaction and Mobilisation</b>	<b>Huw Davies - Chair</b>	Professor of Health Care Policy and Management, University of St Andrews
	Alison Powell	Research Fellow, University of St Andrews
	Ann Wales	Programme Director for Knowledge Management, NHS Education for Scotland
	Anna Fowlie	Chief Executive, Scottish Social Services Council
	Brian Williams	Director, NMAHP Research Unit, University of Stirling
	Karen Ritchie	Head of Knowledge and Information, Healthcare Improvement Scotland
	Mandy Andrew	Joint Improvement Team, Scottish Government
	Margaret Hannah	Director of Public Health, NHS Fife
<b>Training and Development</b>	<b>Kevin Rooney – Chair</b>	Professor of Care Improvement, University of West of Scotland
	Anna Fowlie	Chief Executive, Scottish Social Services Council
	Brian Williams	Director, NMAHP Research Unit
	Chris Bruce	Lead on Outcomes, Joint Improvement Team, Scottish Government
	Jayne Donaldson	Head of School of Health Sciences, University of Stirling

	June Wylie	Head of Implementation and Improvement, Healthcare Improvement Scotland
	Lesley-Ann Smith	Quality Improvement Programme Director, NHS Education for Scotland
	Mary Renfrew	SISCC Director, University of Dundee
<b>Stakeholder Engagement</b>	<b>Allyson Angus - Chair</b>	Public Involvement Manager, NHS Tayside
	Nicky Gilray	Communications & Public Affairs Manager, Scottish Social Services Council
	Chris Bruce	Lead on Outcomes, Joint Improvement Team, Scottish Government
	Jacki Smart	Head of Operations, Scottish Health Council
	Jim McGoldrick	Convenor, Scottish Social Services Council
	Margaret Hannah	Director of Public Health, NHS Fife
	Phyllis Easton	Health Intelligence Manager, NHS Tayside
	Thilo Kroll	Professor of Disability and Public Health, SDHI, University of Dundee
	<b>Maternal and Child Health</b>	<b>Helen Cheyne – Chair</b>
Aileen Keel		Acting Chief Medical Officer Scotland, Scottish Government
Alison Wright		Scottish Neonatal Nurses Group, NHS Tayside
Angela Cunningham,		Clinical Lead (Midwifery), Patient Safety Programme, Ayrshire Maternity Unit
Ann Holmes		Chief Midwifery Advisor, Nursing & Midwifery Council
Ann McMurray		Scotland Network Co-ordinator, Stillbirth and Neonatal Death Charity
Bob Fraser		Children and Families Unit , Scottish Government
Professor Brigid Daniel		Professor of Social Work, University of Stirling
Cath Cummings		Head of Midwifery, NHS Fife
Cheryll Adams		Founding Director, Institute of Health Visiting
Debbie Barnett		Donor Milk Bank Co-ordinator/Infant Feeding Advisory (Neonatal), SGH Maternity Unit
Diane Waugh		Lead Co-ordinator, BLISS Scotland
Elizabeth Duff		Senior Policy Adviser, NCT
Fiona Bayne		Senior Health Improvement Programme Officer, NHS Health Scotland
Gary Sutton		Improvement Advisor, Children & Families Directorate, Early Years Division, Scottish Government
Gillian Smith		Director, RCM Scotland
Jonathon Sher		Scotland Director, Wave Trust
Kate Woodman		Public Health Advisor, NHS Health Scotland
Eden Anderson and Karla Napier		Members, La Leche League GB
Leslie Marr		Productive Health Programme Manager, Healthcare Improvement Scotland
Linda Orr		Lecturer and Researcher, University of Dundee
Linda Wolfson		Maternal and Infant Nutrition Lead, Scottish Government
Mary Ann Lumsden		Council RCOG Fellow's representative for Scotland 2014-2016
Mary Renfrew		Director, SISCC, University of Dundee
Mary Ross Davie		Education Projects Manager Maternal and Child Health, NHS Education for Scotland
Peter Fowlie		Consultant neonatologist, NHS Tayside
Ros Gray		Head of Early Years Collaborative, Scottish Government
Professor Ruth Deery		Professor of Maternal Health, University of West of Scotland
Sue Ashmore		Programme Director, Baby Friendly Initiative, UNICEF

	Yvonne Freer	Reader, NHS Lothian
<b>Older People</b>	<b>Thilo Kroll – Chair</b>	Professor of Disability and Public Health, University of Dundee
	Professor Alison Bowes	Head of the School of Applied Social Science, University of Stirling
	Alpana Mair	Deputy Chief Pharmaceutical Officer, Scottish Government
	Anne Hendry	National Clinical Lead for Integrated Care, Joint Improvement Team, Scottish Government
	Bob Laventure	Consultant on Physical Activity and Older People, British Heart Foundation National Centre for Physical Activity and Health, Loughborough University
	Brendan McCormack	Head of the Division of Nursing, Queen Margaret University
	Bruce Guthrie	Professor of Primary Care Medicine, University of Dundee
	Claire Fitzsimons	Chancellor's Fellow, Edinburgh University
	Dawn Skelton	Professor in Ageing and Health, Glasgow Caledonian University
	Gordon Snedden	Chair, Angus Cardiac Group
	Jacqui Morris	Senior Research Fellow, NMAHP Uni, Glasgow Caledonian University
	Mags Watson	Senior Research Fellow, Health Services Research Unit, University of Aberdeen
	Nanette Mutrie	Chair in Physical Activity for Health, University of Edinburgh
	Steve Iliffe	Professor of Primary Care for Older People, University College London
	Tobias Dreischulte	Postdoctoral Research Fellow, Division of Population Health Sciences, University of Dundee: Research Pharmacist, NHS Tayside
	Yolanda Strachan	AHP National Consultant, Age Scotland

## 2.2 SISCC core staff team

**Dr Jenna Breckenridge** is a researcher with the core SISCC team. She is a HCPC registered occupational therapist and has worked both as a lecturer and a researcher. Her research expertise is in qualitative methods, particularly grounded theory. Her research experience includes topics such as disability, domestic abuse, access to maternity care, professional decision making, person centred practice, and health-related employability.

Areas of responsibilities at SISCC: Coordinating researcher for the knowledge interaction and mobilisation and stakeholder engagement advisory groups, the capacity & capability building and context & evaluation research themes, and the maternal and child health workstream and advisory group. She is also in support of spread & sustainability and improvement science methods.

**Dr Emma Coles** (started 2016) is a Research Fellow for SISCC based at the Nursing Midwifery and Allied Health Professions Research Unit (NMAHP-RU), University of Stirling. Her research experience has included topics such as health inequalities, oral health, homelessness, disability, social inclusion and community planning, involving both qualitative and quantitative methods, survey design, and intervention development, implementation and evaluation. Her PhD research explored engagement with community-based health promotion and health services within the context of experiences of homelessness. Prior to SISCC, her most recent project was an early years child and maternal health, wellbeing and inequalities study, using realist synthesis methodology to explore the relationships between interventions and context, mechanisms of change and outcomes to determine what works, for whom and in what circumstances.

Areas of responsibilities at SISCC: collaborative research and evaluation across the context and behavioral determinants research themes, and maternal and child health and older people work-streams.

**Dr Helen Frost** (left 2016) is the SISCC research fellow working in the NMAHP research unit at the University of Stirling. Helen has a long standing interest in implementing and evaluating health care interventions. She worked clinically for 10 years in the NHS as a senior physiotherapist where she gained a sound knowledge of NHS structure and operations. Prior to completion of her PhD, at the University of Warwick in 2007, she was the Director of Physiotherapy Research at the Nuffield Orthopaedic Centre, Oxford. In this role she led a number of randomised controlled trials of physiotherapy interventions as a primary investigator. Helen has been nominated for numerous awards for her research into back pain and more recently for a review of evidence for interventions aiming to promote health and well-being in later life. Whilst working at the Scottish Collaboration for Public Health Research and Policy unit she became increasingly aware of the need to bridge the gap between evidence and policy/ practice, particularly for hard to reach disadvantaged groups. Helen has experience of trial design, data linkage, evidence synthesis and knowledge brokering. Her main research interests are focused on investigating methodologies to promote and integrate evidence into practice and interventions that support long-term adherence to physical activity for older people.

Areas of responsibilities at SISCC: Coordinating researcher for behavioral determinants research theme.

**Dr Nicola Gray** is the SISCC Associate Director, Programs & Evaluation and a Senior Lecturer at the School of Nursing and Health Science, University of Dundee. She is an experienced health services researcher with BA in Business Studies and a PhD in Medicine and Therapeutics. Her previous research has focussed on cancer (early diagnosis and follow-up) and women's health. Her research strengths include the application of quantitative and qualitative research methodologies across different diseases and contexts. She is a qualified project manager who has experience in developing, managing and leading complex projects across multiple sites and of working collaboratively in multi-disciplinary teams.

Areas of responsibilities at SISCC: Associate Director, Programs & Evaluation and has the overall responsibility for operational management.

[Dr Claire Jones](#) is a senior software engineer leading the data analysis and software development requirements for QISIP as part of the Health Informatics Centre Services team (University of Dundee). She has over 12 years' experience developing software and managing data for healthcare related projects in areas such as obstetrics, hypertension, diabetes and alcohol. With a PhD in the field of User Interface Design/Human Computer Interaction she has a strong interest in the development of usable software to support research.

Area of responsibilities at SISCC: Coordinating researcher for QISIP research project.

[Dr Madalina Toma](#) is a quantitative researcher for SISCC. Starting her career as an educational psychologist, she has been involved in a number of projects that interrogated the production of knowledge on child and youth psychopathology and the associated diagnostic practices as they impact on education and wider society. Her work in the critical disabilities studies relates primarily to her PhD research exploring the economic, social and cultural determinants of mental health, being particularly interested in the conceptualisation of Attention Deficit Hyperactivity Disorder as a clinical diagnosis. A more recent development is situated within the disability arts movement, including research on the impact of arts on health and wellbeing and the role of creative engagement in recovery and rehabilitation.

Her methodological knowledge and expertise are mainly mixed methods, allowing her to develop advanced skills in the design and conduct of clinical trials, cross-sectional surveys and instrument development as well as various qualitative research methods and systematic reviews.

Areas of responsibilities at SISCC: Coordinating researcher for Improvement science methods research theme, older people advisory group and older people medicines management research theme. She is also a supporting researcher of Improvement science methods advisory group.

[Dr Ania Zubala](#) is a researcher and a psychologist who trained in psychodynamic and arts psychotherapies. Her research focuses on the role of arts, creativity and non-pharmaceutical interventions for holistically-understood wellbeing. Prior to her academic life, Ania used to work in clinical roles with adults experiencing mental ill-health and is dedicated to improving clinical practice and meaningful dialogue between researchers and practitioners. Ania's doctoral research explored the value of arts psychotherapies in the treatment of adult depression in the UK and she currently works on a book gathering best research evidence in the field with expert contributors from around the world.

Ania has been a researcher with SISCC for nearly two years and has contributed to a number of SISCC strands of work. Currently she coordinates the Knowledge into Action at Scale project, which includes evaluation of two innovative large-scale online education programmes (MOOCs) on compassionate care and reduction of inequalities. Ania also continues to contribute to systematic reviews and particularly to the older people workstream.

### 2.3 Posts supported by SFC/HF/CSO/NES and in-kind funding, Year 2

Posts appointed				
Post and institution	WTE and grade	Name	Source of funding	Date appointed
<b>Senior lead posts</b>				
SISCC Director Dundee	0.2wte Professor	Prof Mary Renfrew	0.2wte SISCC main grant	Paid contribution from 1 <sup>st</sup> August 2014  In kind set-up work February- July 2014
Executive leads x 7  Dundee x 2 UWS Stirling St Andrew's NHS Tayside x 2	0.1wte  Professor and senior NHS staff	Prof Bruce Guthrie Prof Peter Davey Prof Kevin Rooney Prof Margaret Maxwell Prof Huw Davies Diane Campbell Allyson Angus	0.05wte SISCC main grant	Paid contribution from 1 <sup>st</sup> August 2014  In-kind set-up work March-July 2015
<b>Staff posts</b>				
Programme manager Dundee	Full time Grade 9 5 years	Dr Nicola Gray	SISCC main grant	August 2014
Programme administrator Dundee	Full time Grade 6 5 years	Fiona Szeller (left June 2016)  Replaced by Gillian Clarke	SISCC main grant	August 2014
Post-doctoral researcher Dundee	Full time Grade 7 3 years	Dr Madalina Toma	SISCC main grant	August 2014
Post-doctoral researcher Dundee	Full time Grade 7 3 years	Dr Jenna Breckenridge  Leaving September 2016, replacement post out to advert	SISCC main grant	October 2014
Post-doctoral researcher Dundee	Full time Grade 7 1 year	Dr Ania Zubala	SISCC main grant	September 2014
Post-doctoral researcher Dundee	Full time Grade 7 1 year	Dr Sathish Sankarpandi (left January 2016)	SISCC main grant	November 2014
Post-doctoral researcher Stirling	Full time Grade 7 4 years	Dr Helen Frost (left 2016)  Replaced by Dr Emma Coles	SISCC main grant	November 2014
Senior software engineer Dundee/FARR	Full time Grade 7 31 months	Dr Claire Jones	SISCC main grant/QISIP	January 2015
Senior lecturer Dundee	0.1wte Grade 9 5 years	Dr Steve MacGillivray	SISCC main grant	August 2014

Workstream lead Maternal and child health Dundee	0.2wte 6 months	Dr Linda Orr and Dr Heather Whitford	SISCC main grant	Complete
Workstream lead Older people Dundee	0.2wte 6 months	Dr Jacqui Morris	SISCC main grant	Complete
Workstream lead Maternal and Child and Older people	(originally planned as two posts, 0.8wte Grade 8)  now re-profiled as joint post with Older people workstream to NHS Band 8, 0.85 wte	Julie Anderson	SISCC main grant	Re-profiled as Associate Director for Partnerships, Engagement and Workstreams
Clerical post	0.5wte Grade 3	Cali Plahe Temporary appointment, post to be advertised September 2016	SISCC main grant	June 2016
e-learning education UWS	0.3wte	Laura Underwood	Additional Health Foundation grant (KiAS)	Appointed
Education researcher Dundee	Full time Grade 7	Ania Zubala	Additional Health Foundation grant (KiAS)	Appointed
<b>Posts in process of appointment</b>				
Post-doctoral researcher Dundee	Full time Grade 8 1 year	Tba	In-kind contribution Dundee	Out to advert
Chair in Evidence- based improvement	Full time, Professorial scale	Tba	In-kind contribution Dundee	To be advertised September 2016
<b>Posts originally planned, not advertised, being re-profiled</b>				
Clinical academic Maternal and child health	0.5wte Grade 7	Tba	Main SISCC grant	Being re-profiled
Clinical academic Older people	1 wte Grade 7	Tba	Main SISCC grant	Being re- profiled, to be replaced by in- kind contribution from University of Dundee
<b>In kind contributions from partners</b>				
SISCC Director Dundee	0.4wte Professor	Prof Mary Renfrew	In kind contribution, Dundee	Plus in kind set- up work February-July 2014
Executive leads x 5  Stirling x 3 Dundee Aberdeen NHS Tayside	Professor	Prof Jayne Donaldson Prof Brian Williams Prof Thilo Kroll Prof Helen Cheyne	In-kind contribution  Stirling Dundee Aberdeen NHS Tayside	From March 2014

		Prof Craig Ramsay Diane Campbell Allyson Angus		
University of Dundee Research Fellow	0.2WTE Grade 8 5 years	Suzanne Grant	In kind contribution, Dundee	From August 2014
University of Dundee Older People's Workstream Research Fellow	Band 8 0.5 wte	Tobias Dreischulte	In kind contribution, Dundee	From February 2016
University of Dundee Maternal and Child workstream	Grade 8 0.2wte	Heather Whitford	In kind contribution, Dundee	From November 2015
University of Dundee Maternal and Child workstream	Band 6 0.2wte	Karen Tosh	In kind contribution, Dundee	From January 2016
NHS T Clinical Academic	0.8WTE 5 years	Multiple contributions	In kind contribution, Tayside	Support provided through combination of staff input
University of Stirling – to support post-doctoral training and career development	5 years	Brian Williams	In kind contribution, Stirling (Napier from August 2016)	From March 2014
University of Stirling – to support post-doctoral training and career development	5 years	Helen Cheyne	In kind contribution, Stirling	From March 2014
University of Stirling – to support post-doctoral training and career development	5 years	F Harris	In kind contribution, Stirling	From August 2014
University of Stirling – to support post-doctoral training and career development	5 years	E Duncan	In kind contribution, Stirling	From August 2014
University of Stirling	5 years	Jayne Donaldson	In kind contribution, Stirling	From March 2014
Napier University	5 years	Senior staff input to programme, especially KIAS	In kind contribution, Napier	From November 2015
e-learning education Dundee	2 years	Senior staff input	Additional Health Foundation grant (KIAS)	From November 2015
Multiple input from academic colleagues	5 years	Research staff input	In kind contribution, all university partners	From August 2014

## Appendix 3

### Funding proposals, publications, and presentations

#### 3.1 Core SISCC grants and proposals

##### **Awarded**

- Knowledge into action at scale: taking evidence-based improvement science to a national and global audience through education and knowledge translation and exchange. £500,000 (Renfrew, Gray et al)
- Understanding, forming and fostering a culture of transformative innovation in health and social care. Scottish Universities Insights Institute; £16,000 (Kroll, Hannah, Gray)
- Scottish Government: Efficient evidence reviews to inform Scottish Government review of maternal and neonatal services (£45,000. Renfrew, MacGillivray)
- NHS Tayside/Academic Health Sciences Network: collaboration with NHS Tayside to examine introduction of a new service to improve quality of care (£10k from AHSN plus in kind input of 0.5 wte staff member)
- NHS Fife: collaboration with NHS Fife maternity services to examine quality of maternity care (agreed, in process, funding tbc)

##### **Submitted**

- Health Foundation Creating a new improvement research institute – SISCC is a partner in a bid being led by Professor Nick Sevdalis at King's College London. Shortlisted. (£30 million)
- Health Foundation as part of the Efficiency Programme call. "Continuity and 'standard' models of antenatal care: a mixed methods evaluation of care characteristics to identify mechanisms for the implementation of quality practice" submitted July 2016 (Gray, co-applicant) - awaiting decision
- Chief Scientist Office Research Grants Outline Application to Translational Clinical Studies Research Committee. Comparing the Diagnostic Accuracy of Biopsy Techniques for Prostate Cancer £209,078, submitted June 2016 (Donaldson (PI), Gray) - awaiting decision
- NHS Ayrshire and Arran Endowment Fund. Comparing the Diagnostic Accuracy of Biopsy Techniques for Prostate Cancer. Funding to establish the data collection process. £24837, submitted July 2016 (Donaldson (PI), Gray) - awaiting decision

### 3.2 Core SISCO publications

#### In press

##### *Behaviour*

- Dombrowski S, O'Carroll RE & Williams B. Form of delivery as a key 'active ingredient' in behaviour change interventions. *British Journal of Health Psychology* 2016

##### *Capacity and Capability*

- Steven K, Angus A, Breckenridge JP, Davey P, Tully V, Muir F. Identifying Key Areas for Active Inter-professional Learning Partnerships: a Facilitated Dialogue. *Journal of Inter-professional Care* 2016

#### In preparation

##### *Improvement Science Methods*

- The place of balancing measures in healthcare quality improvement: a qualitative analysis of individual and focus group interviews (Guthrie/Toma: Sept 2016)
- The place of balancing measures in healthcare quality improvement: a modified Delphi consensus study (Guthrie/Toma: Oct 2016)
- Antimicrobial stewardship: achieving sustainable change at scale requires better measurement of clinical and organisational consequences (Guthrie/Toma: Dec 2016)
- Measuring quality and safety at different levels of a healthcare system: a case study in NHS Scotland (Guthrie/Toma: Feb 2017)
- A commentary on the dissonance between prevailing opinions and supporting evidence for understanding how to create sustainable, large scale change: documentary analysis of think pieces in the quality improvement field (Breckenridge: Aug 2016)

##### *Context*

- Realist review on context (Coles)

##### *Behaviour*

- Effectiveness of motivational interviewing on adult behaviour change in health and social care settings: an overview of reviews (Coles)
- Interventions for sustained healthcare professional behaviour change: a protocol for an overview of reviews (Dombrowski)
- Barriers & facilitators to behaviour change (Campbell)

##### *Knowledge into Action at Scale*

- Large scale online education opportunities in the field of health and wellbeing and their potential to effect behaviour change. A rapid systematic review (Zubala: Aug 2016)
- A scoping exercise to define existing opportunities for creating changes in practice in health and social care in Scotland through education, knowledge translation and exchange (Craig/Zubala: Sept 2016)

##### *Older People Physical Activity*

- Promotion of physical activity interventions for community dwelling older adults: A review of reviews (Zubala: Sept 2016)

##### *Spread and Sustainability*

- Co-creating a framework for conceptualising sustainable change at scale: combining expertise from improvement initiatives across the UK. (Breckenridge: Dec 2016)
- Motivating Change: a grounded theory of how to achieve large scale, sustained change co-created with organisations in health, education and social care across the UK (Breckenridge: Aug 2016)

### *Capacity and Capability*

- Medical students and early career doctors as agents of change: a qualitative, exploratory study (Breckenridge: Dec 2016)

### *Maternal and Child Health*

- Improving breastfeeding and parent-baby attachment in neonatal units: an evidence informed survey of the perceived impact and feasibility of best practice strategies (Breckenridge: May 2017)

### 3.3 Core SISCC presentations

#### Oral presentations

- Scottish Improvement Science Collaborating Centre; strengthening the evidence base for improvement science: Lessons learned. 7th Annual Evidence Based Health Care International Conference, Taormina, Italy, November, 2015 (Gray)
- Students and early career professionals as change agents. 7th Annual Evidence Based Health Care International Conference, Taormina, Italy, November, 2015 (Davey)
- The purpose, design and use of balancing measures in quality and safety improvement (Phase 1 and Phase 2). Research Methods Seminar Series, University of Dundee, April, 2016 (Toma)
- Innovation or re-discovery? Taking another look at the evidence base for quality global maternal and newborn care. University of Florida international conference 2015 plenary presentation: Innovations in Health Care (Renfrew)
- Scottish Improvement Science Collaborating Centre. King's College London seminar, November 2015 (Renfrew)
- Evidence-based improvement: the work of the Scottish Improvement Science Collaborating Centre. University of Technology Sydney, Australia, plenary presentation. August 2015. (Renfrew)
- Challenges in evidence-based improvement in health and social care. Healthcare Improvement Scotland Research Symposium Plenary presentation, March 2016 (Renfrew)
- Two papers from the Behaviour research theme reviews presented at the European Health Psychology Conference, August 2016

#### Poster presentations

- The purpose, design and use of balancing measures in quality and safety improvement (Phase 1). Healthcare Improvement Scotland 4th Annual Research Symposium, Edinburgh, 2016 (Toma)
- The purpose, design and use of balancing measures in quality and safety improvement (Phase 1 and Phase 2). NHS Scotland Event, SECC, Glasgow, 2016. Poster shortlisted for award (Toma)
- Co-creating a framework for conceptualising sustainable change at scale: combining expertise from improvement initiatives across the UK. Healthcare Improvement Scotland 4th Annual Research Symposium, Edinburgh, 2016 (Breckenridge)
- Improving breastfeeding and parent-baby attachment in neonatal units. Scottish Neonatal Nurses Group Annual Conference on 9th May 2016 (Breckenridge)

## Appendix 4 Checkpoint reports

### *Explanatory Notes*

This report covers activities and financial costs accrued by the SISCC programme over the period 1<sup>st</sup> August 2015 to 31<sup>st</sup> July 2016.

The checkpoint reports provide information on progress against the milestones in the original proposal, updated to reflect what was agreed at the 2015 SISCC Board and Funders meetings. For each research theme, work-stream and project, information on milestones, activities, current target (completion) date, status and current progress is provided. The status of each milestone is colour coded to reflect progress against agreed target completion date using the key given in Table 1 below.

Table 1: Key to colour coding of status of each milestone

#### Key to status

	Milestones which are beyond their baseline target date and may be at risk of not being delivered
	Milestones which are beyond their baseline target date but which have plans in place to mitigate risks
	Milestones which have a target date in the future or which have been completed

Activity	Person Responsible	Target date	Status	Progress/Comment
Programme Management	M Renfrew			Individuals and organisations contributing to this activity are listed at the end of this report.
International Board			Completed	<ul style="list-style-type: none"> <li>Membership listed in appendix</li> </ul>
Executive Group and Core Partners			Ongoing	<ul style="list-style-type: none"> <li>Membership listed in appendix</li> </ul>
Consortium/ annual conference			Ongoing	<ul style="list-style-type: none"> <li>Membership listed in appendix</li> </ul>
Establishing the centre, relationship building, stakeholder engagement and governance			Ongoing	<ul style="list-style-type: none"> <li>Internal meetings:</li> <li>External meetings:</li> </ul>
Communications, media and public relations			Ongoing	<ul style="list-style-type: none"> <li>Communications strategy in place</li> <li>Website in place</li> <li>Branding in place</li> </ul>
Operations			Ongoing	<ul style="list-style-type: none"> <li>Weekly core team meetings – Dundee/Stirling</li> <li>Regular operations group meetings – Stirling</li> </ul>
<b>IMPROVEMENT SCIENCE METHODS RESEARCH THEME</b>	<b>B Guthrie</b>			Individuals and organisations contributing to this activity are listed at the end of this report.
Research question 1: Rapid Review of improvement literature	S MacGillivray	Year 1-2	Completed	<ul style="list-style-type: none"> <li>Review completed and report submitted to SISCC Executive</li> </ul>
Research question 1: Review of measures used in large scale improvement programmes-	S MacGillivray	Year 1-2	Completed	<ul style="list-style-type: none"> <li>Review completed and report submitted to SISCC Executive</li> <li>Academic paper in preparation for submission August 2016</li> </ul>
Research question 2: Review of evidence of outcome and balancing measures	S MacGillivray	Year 1-2	Completed	<ul style="list-style-type: none"> <li>Review completed and report submitted to SISCC Executive</li> </ul>
Research questions 1, 2 & 3: Semi structured interviews with key national and international stakeholders	B Guthrie	Year 1-2	Completed	<ul style="list-style-type: none"> <li>Review completed and report submitted to SISCC Executive</li> </ul>
Research questions 1, 2 & 3 Stakeholders workshop	B Guthrie	Year 1-2	Completed	<ul style="list-style-type: none"> <li>Workshop completed (November 2015)</li> </ul>
Research question 3: formal consensus process	B Guthrie	Year 1-2	In progress	<ul style="list-style-type: none"> <li>First round of Delphi completed, second round to begin August 2016</li> </ul>

Implementation of measurement strategies in SISCC improvement projects	B Guthrie	Years 2-5	In progress	<ul style="list-style-type: none"> <li>• Discussion ongoing with work-stream lead and evaluation teams</li> </ul>
Dissemination				<ul style="list-style-type: none"> <li>• Poster presentation NHS Scotland Conference 2016</li> <li>• Academic paper in preparation for balancing measures evidence synthesis, interviews and workshops – submission September 2016</li> <li>• Invited contribution (Guthrie/Toma) to Journal of Antimicrobial Chemotherapy – currently in discussion with editor</li> </ul>
<b>CONTEXT RESEARCH THEME RESEARCH THEME</b>	M Maxwell			Individuals and organisations contributing to this activity are listed at the end of this report.
Research aim 1: Realist synthesis literature review to inform development of framework and resources for addressing: patient, organisational, and social/legal contextual issues in implementation planning	M Maxwell	Year 1	In progress	<ul style="list-style-type: none"> <li>• Delayed due to publication of Health Foundation review and delays in work-stream projects.</li> <li>• Realist review to be undertaken to update/widen evidence base; steering group to meet Sept/Oct 2016 to take forward</li> </ul>
Research aim 2: Test and refine the framework within planned improvement programmes and contribute to their evaluation across a range of contexts within older people MCH work-streams	M Maxwell	Year 2 onwards	In progress	<ul style="list-style-type: none"> <li>• Refer to work-stream improvement projects timelines</li> </ul>
Research aim 3: High quality grant applications to test new methods and approaches that aid improvement by addressing context issues	M Maxwell	Year 2 onwards	In progress	<ul style="list-style-type: none"> <li>• NIHR application submitted (PROPEL: women's/maternal health). Led by M Maxwell. Successfully funded 2015</li> <li>• Continuing to look for opportunities for grant development and submission</li> </ul>
<b>BEHAVIOURAL DETERMINANTS AND CHANGE STRATEGIES RESEARCH THEME</b>	B Williams			Individuals and organisations contributing to this activity are listed at the end of this report.
Research aim 1: Review identifying the barriers and facilitators to health professionals effectively implementing evidence based patient behaviour change	B Williams	Year 1	Completed	<ul style="list-style-type: none"> <li>• Two reviews completed</li> <li>• Academic paper on effectiveness of motivational interviewing for behaviour change submitted to BMJ but was</li> </ul>

				<p>rejected – currently being updated and revised.</p> <ul style="list-style-type: none"> <li>• A paper has been accepted for an oral presentation at the European Health Psychology Conference</li> <li>• Academic paper on barriers &amp; facilitators and effectiveness of motivational interviewing in health &amp; social care <b>in preparation</b></li> </ul>
<p>Research aim 2: systematic review of interventions to maintain behaviour change at the group level (Focus on achieving sustained behaviour change for health professional)</p>	B Williams	Year 1	In progress	<ul style="list-style-type: none"> <li>• Data extraction under way</li> <li>• Protocol submitted to the journal “Systematic Reviews” - small edits and changes have been requested</li> <li>• A paper has been accepted for an oral presentation at the European Health Psychology Conference</li> </ul>
<p>Complete initial development of novel interventions relevant to the two main work-streams and based on the findings of the reviews above</p>	B Williams	Year 2 onwards	In progress	
<p>Development/Submission of grant applications in relation to the above</p>	B Williams	Year 2 onwards	In progress	<ul style="list-style-type: none"> <li>• Potential grant application linked to Older People work-stream (physical activity) in progress in the University of Stirling grant writing group</li> </ul>
<b>CAPACITY AND CAPABILITY RESEARCH THEME</b>	P Davey			<p>Individuals and organisations contributing to this activity are listed at the end of this report.</p>
<p>Research question 1: identify barriers and facilitators to successful completion of improvement projects by students and early career professionals</p>	P Davey	Year 1	In progress	<ul style="list-style-type: none"> <li>• Interviews and focus groups with students, ECP’s and mentors underway, data collection due to be complete by August 2016</li> <li>• Working to Improve Healthcare conference hosted by SISCC and the Academic Health Sciences Partnership in Tayside on November 2014.</li> <li>• Paper submitted to Journal of Inter-professional Care awaiting official acceptance from journal</li> </ul>

Research question 2: identify costs incurred by clinical teams and organisations of hosting QI projects	P Davey	Year 1	In progress	<ul style="list-style-type: none"> <li>Return on investment report submitted to AHSP monitoring committee May 2016</li> </ul>
Research question 3: explore how supervision of QI projects might change clinical team culture	P Davey	Years 2-3	In progress	<ul style="list-style-type: none"> <li>Interviews and focus groups with students, ECP's and mentors underway, data collection due to be complete by August 2016</li> </ul>
Research question 4: explore how hosting QI projects might facilitate organisational change	P Davey	Years 2-3	In progress	<ul style="list-style-type: none"> <li>Interviews and focus groups with students, ECP's and mentors underway, data collection due to be complete by August 2016</li> </ul>
<b>SPREAD AND SUSTAINABILITY RESEARCH THEME</b>	<b>M Renfrew</b>			Individuals and organisations contributing to this activity are listed at the end of this report.
Phase 1: Evidence review of existing programmes of change at scale to learn lessons for future implementation projects, and develop methods for testing improvement/implementation at scale		Year 1	Completed	<ul style="list-style-type: none"> <li>Scoping Exercise and rapid review - MIS Review completed</li> <li>Case studies of large scale programmes to identify what works in creating sustainable, large-scale change completed. Academic paper being prepared for submission August 2016</li> </ul>
Phase 2: First large-scale change programme (within Maternal and Child Health work-stream)		Year 1-2	In progress	<ul style="list-style-type: none"> <li>Please refer to Maternal and Child Health work-stream for progress report</li> </ul>
Phase 2: Second large-scale change programme (within Older People work-stream)		Years 2-5	In progress	<ul style="list-style-type: none"> <li>Please refer to Older People's work-stream for progress report</li> </ul>
Phase 2: Third large-scale change programme (within Older People work-stream)		Years 2-5	In progress	<ul style="list-style-type: none"> <li>Please refer to Older People's work-stream for progress report</li> </ul>
Phase 2: Third large-scale change programme Knowledge into action at scale (MOOCs)	E Lee	Years 2-5	In progress	<ul style="list-style-type: none"> <li>Please refer to Knowledge into Action project for progress report</li> </ul>
Phase 3: Development of an evidence-based taxonomy of change at scale and a practical toolkit	M Renfrew	Year 5	Not started	

<b>MATERNAL AND CHILD HEALTH WORK-STREAM:</b> Infant feeding and attachment for babies in neonatal units and their families	J Anderson			Individuals and organisations contributing to this activity are listed at the end of this report.
Research question 1: explore in what contexts the HIEC change programme may be effective/ineffective	H Whitford	Year 1	In progress	<ul style="list-style-type: none"> <li>Evidence synthesis and review of evidence base for infant feeding and attachment completed with NHS Scotland</li> <li>Hypotheses generated for how programme components might work</li> <li>Online questionnaire to stakeholders across Scotland</li> </ul>
Research question 2: identify barriers and facilitators to implementation		Year 1	In progress	<ul style="list-style-type: none"> <li>Multiple stakeholder meetings held</li> </ul>
Research question 3: explore what components of the programme are effective in which contexts and for what outcomes		Year 1-2	Not started	<ul style="list-style-type: none"> <li>Evidence consultation events across Scotland planned for Autumn/ Winter 2016</li> <li>Implementation of improvement programme in selected sites early 2017</li> </ul>
Research question 4: consolidate the lessons learned that may be generalizable to other topics and settings		Year 1-3	In progress	<ul style="list-style-type: none"> <li>Multi-disciplinary evaluation team in place and plan drafted. Regular team meetings being scheduled</li> </ul>
<b>OLDER PEOPLE WORK-STREAM:</b> Physical activity promotion for older people	Vacant			Individuals and organisations contributing to this activity are listed at the end of this report.
Phase 1: Evidence reviews and synthesis	J Morris	Year 1-2	In progress	<ul style="list-style-type: none"> <li>Review completed. Academic paper being prepared for submission September 2016</li> <li>Presentation of key findings to Older People's Advisory Group June 2016</li> </ul>
Phase 2: Stakeholder consultation and translation process	TBC	Year 1-2	In progress	<ul style="list-style-type: none"> <li>Meetings underway with key individuals and special interest groups (eg Older people's advisory group, NHS Health</li> </ul>

				Scotland physical activity special interest group, care home providers etc) to develop work-stream project
Phase 3: Practice implementation - design and implement improvement project and evaluation	TBC	Years 3-5	Not started	
<b>OLDER PEOPLE WORK-STREAM: Medicines safety of older people with complex and multiple health conditions</b>	<b>B Guthrie</b>			<b>Individuals and organisations contributing to this activity are listed at the end of this report.</b>
Phase 1: Evidence reviews and synthesis	B Guthrie/ T Drieschulte	Year 1-2	Complete	<ul style="list-style-type: none"> <li>• Papers relating to the medicines management improvement project have previously been published</li> </ul>
Phase 2: Stakeholder consultation and translation process	B Guthrie/ T Drieschulte	Years 1-2	Complete	<ul style="list-style-type: none"> <li>• Extensive consultations held with stakeholders and experts in the field of polypharmacy.</li> <li>• SISCC Executive Group approved medicines management project December 2015 [Towards routine management of high-risk prescribing and monitoring in primary care: The Data-driven Quality Improvement in Primary care 2 (DQIP 2)]</li> </ul>
Phase 3: Practice implementation	B Guthrie/ T Drieschulte	Years 3-5	In progress	<ul style="list-style-type: none"> <li>• Please refer to DQIP 2 project plan below</li> </ul>
Additional work	B Guthrie		In progress	<ul style="list-style-type: none"> <li>• Developing existing work-Reducing high-risk prescribing in people with polypharmacy in primary care</li> <li>• CSO funding application successful June 2015 to develop, implement and evaluate the enhanced medication summary in NHS Ayrshire and Arran</li> <li>• Building on the work in NHS A&amp;A to develop NHS Tayside tools to better support polypharmacy review in primary</li> </ul>

				<p>and secondary care Aligns to QISIP work in that it will rely on getting secure and reliable and timely access to GP clinical data.</p> <ul style="list-style-type: none"> <li>Developing existing work-NHS Tayside GP Clinical data access</li> </ul>
<p><b>OLDER PEOPLE WORK-STREAM:</b> Towards routine management of high-risk prescribing and monitoring in primary care: The Data-driven Quality Improvement in Primary care 2 (DQIP 2)</p>	T Drieschulte			<p>Individuals and organisations contributing to this activity are listed at the end of this report.</p>
<p>Phase 1 – Intervention design and optimisation</p> <ul style="list-style-type: none"> <li>Design, development and optimisation of DQIP tool</li> <li>Recruitment of pilot practices</li> <li>Stakeholders engagement and consultation (to identify barriers and enablers to the implementation of the DQIP2)</li> <li>Refining DQIP intervention components</li> </ul>		Years 3-5	In progress	<ul style="list-style-type: none"> <li>Project start date May 2016</li> <li>Development of the IT tool to facilitate identification and review of patients with high-risk prescribing is underway</li> <li>Pilot practices identified</li> <li>Consultation with Older People Work-stream Advisory Group and invited GPs, pharmacists, academics, gerontologist, public representatives June 2016</li> <li>Various strategies and approaches to facilitate stakeholders' engagement in the pilot are currently being explored.(e.g. using participatory action research)</li> </ul>
Phase 2 – Intervention roll out and evaluation		Years 3 onwards	Not started	<ul style="list-style-type: none"> <li>DQIP 2 initiation (2017)</li> <li>DQIP2 intervention live in all practices (2017)</li> <li>Obtaining consent for data extraction (2017)</li> </ul>

				<ul style="list-style-type: none"> <li>• Mixed methods process evaluation (2018)</li> <li>• Data extraction cleaning (2018)</li> <li>• Analysis (2019)</li> <li>• Reporting (2019)</li> </ul>
<b>METHODS PLATFORM:</b> Knowledge management, eHealth and health informatics: Quality Improvement System Intelligence Platform (QISIP)	B Guthrie / E Jefferson			Individuals and organisations contributing to this activity are listed at the end of this report.
Objective 1: to gain necessary information and governance approvals and partnerships		Years 1-5	In progress	<ul style="list-style-type: none"> <li>• Ongoing on a project basis</li> </ul>
Objective 2: to build the IM&T infrastructure by linking patient data with quality and safety reporting systems		Years 1-5	In progress	<ul style="list-style-type: none"> <li>• See objective 3 below for further details</li> </ul>
Objective 3: to complete a series of exemplar studies to test QISIP's capability and effectiveness <ul style="list-style-type: none"> <li>• Risk-Adjusted Mortality Project (Year 1)</li> <li>• PRISMS Project (Year 2)</li> <li>• AKI (Acute Kidney Injury) Project (Year 3)</li> <li>• NHS Tayside Data Access for Improvements</li> <li>• GP Data Access: Investigating the feasibility for HIC Services to obtain a live feed from GP Clinical Portal (Read codes/measurements)</li> <li>• Supporting SISCC work-streams</li> </ul>		Years 1-5	In progress	<ul style="list-style-type: none"> <li>• AKI (Acute Kidney Injury) Project – Caldicott approval submitted, data linkage primed subject to approvals</li> <li>• NHS Tayside Data Access for Improvements – in discussion with NHS Tayside</li> <li>• GP Data Access - working with Albasoft to design, develop and optimise of DQIP2 IT tool</li> <li>• Supporting SISCC work-streams – online questionnaire for MCH, ongoing discussions with project teams on data requirements</li> </ul>
<b>KNOWLEDGE TRANSLATION PLATFORM:</b> Knowledge into action at scale: taking evidence-based improvement science to a national and global audience through education and knowledge translation and exchange	E Lee	July 2015 – December 2018		Individuals and organisations contributing to this activity are listed at the end of this report.

Objective 1: Develop, test and deliver two massive open online courses (MOOCs) MOOC 1 – Care and compassion MOOC 2 - Inequalities		Years 1-4	In progress	<ul style="list-style-type: none"> <li>MOOC 1 launches in October 2016. Trailer is live: <a href="https://goo.gl/tQAQnX">https://goo.gl/tQAQnX</a></li> <li>Preparatory work in progress for MOOC 2.</li> <li>Protocol for the evaluation of MOOC 1 drafted</li> </ul>
Objective 2: Evaluation of existing knowledge translation/ exchange <ul style="list-style-type: none"> <li>Scoping and evaluation of existing activities</li> <li>Development of new approaches to knowledge translation and exchange</li> </ul>		Years 1-4	In progress	<ul style="list-style-type: none"> <li>Scoping review – large scale education and its impact on behaviour change completed. Academic paper being prepared</li> <li>Scoping exercise – description of current knowledge exchange opportunities available for health care professionals in Scotland completed. Academic paper being prepared by PhD student attached to this component</li> </ul>
Objective 3: Host international Conference		Years 3-4	Not started	
<b>TRAINING AND DEVELOPMENT PLATFORM</b>				Individuals and organisations contributing to this activity are listed at the end of this report.
<b>In-practice (pre-doctoral) modular training programme</b>				
<ul style="list-style-type: none"> <li>Provision of high quality masters level training with options of modules, or exit points at 3 levels (certificate, diploma and MSc)</li> </ul>	E Lee		Completed	<ul style="list-style-type: none"> <li>In place, negotiated a more competitive price point for each stage increasing its accessibility</li> <li>Additional funds to support attendance of NHS and care staff on the MSc course could not be secured – Board and funders agreement to discontinue this as a goal.</li> </ul>
<ul style="list-style-type: none"> <li>Developing and piloting an educational model supporting an honours year in</li> </ul>	P Davey		Completed	<ul style="list-style-type: none"> <li>We added Improvement Science as an option within an existing Clinical Research BMSc for 2014/15.</li> </ul>

improvement science suitable for health based undergraduate courses <b>Doctoral Programme in Improvement Science</b>	Multiple across different institutions			
<ul style="list-style-type: none"> <li>Create an expert student and supervisor community in improvement science in Scotland</li> </ul>			Ongoing	<ul style="list-style-type: none"> <li>Seminar and training series with invited speakers. Year 3 seminar scheduled for October 2016</li> <li>Knowledge, experience, competency framework extension of vitae drafted. Delphi study to confirm and refine planned</li> </ul>
<ul style="list-style-type: none"> <li>Four PhD studentships in improvement science methods</li> </ul>			Ongoing	<ul style="list-style-type: none"> <li>Three PhD students in place, unable to find a suitable candidate for fourth. This will be re-advertised in 2017.</li> </ul>
<ul style="list-style-type: none"> <li>Support high quality PhD studentships/fellowship applications to external funders</li> </ul>			Ongoing	<ul style="list-style-type: none"> <li>Continue to seek funding</li> </ul>
<b>Post-doctoral Support Programme</b>	B Williams			
<ul style="list-style-type: none"> <li>Develop and test a pilot implementation grant writing group</li> </ul>		Years 1-2	Completed	<ul style="list-style-type: none"> <li>Membership: four core SISCC researchers from Dundee and three researchers from UWS participated in the writing group</li> </ul>
SISCC Advisory Groups		Years 1-5		Individuals and organisations contributing to this activity are listed at the end of this report.
Training and Development	K Rooney		Ongoing	<ul style="list-style-type: none"> <li>Four meetings held</li> <li>Providing ongoing advice on development of the training and development platform (see above)</li> </ul>
Stakeholder Engagement	A Angus		Ongoing	<ul style="list-style-type: none"> <li>Stakeholder engagement plan drafted</li> <li>Stakeholder engagement template in use across all SISCC projects</li> </ul>

				<ul style="list-style-type: none"> <li>• Ongoing support for stakeholder engagement activity across research themes and work-streams</li> <li>• Position paper on SISCC website</li> </ul>
Knowledge Interaction and Mobilisation	H Davies		Ongoing	<ul style="list-style-type: none"> <li>• Three meetings held</li> <li>• Position paper on SISCC website</li> </ul>
Innovation	M Hannah		Ongoing	<ul style="list-style-type: none"> <li>• Successful application to Scottish Universities Insight Institute call for proposals under the title "Fostering cultures of innovation" (2016) Series of workshops have been completed/planned with international experts in the field of transformational innovation.</li> <li>• Proposal for research capability to investigate transformative innovation discussed at SISCC Executive meeting July 2016</li> </ul>
Older People's Work-stream	T Kroll		Ongoing	<ul style="list-style-type: none"> <li>• Two meetings held.</li> <li>• Facilitated discussion around physical activity and DQIP2 projects (June 2016)</li> </ul>
Maternal and Child Health (MCH) Work-stream	H Cheyne		Ongoing	<ul style="list-style-type: none"> <li>• Two meetings held</li> <li>• Direct input into the design and piloting of the online questionnaire</li> <li>• Provided advise on recruitment of MCH implementation staff</li> </ul>
Improvement Science Methods	C Ramsay		Ongoing	<ul style="list-style-type: none"> <li>• Advising on evaluation strategy for MCH neonatal project and DQIP2</li> </ul>

## Appendix 5

### Details of review by Executive Group and core partners on SISCC performance Year 2

Theme	What works well	What needs to be improved	Analysis and actions
Collaborative working	<ul style="list-style-type: none"> <li>✓ Seminars/Think Events “energised talking shops”</li> <li>✓ Opportunity to collaborate and network</li> <li>✓ Culture of collaborative working</li> <li>✓ It’s possible to “dip in and out” of different parts of the programme</li> <li>✓ Ability to make a positive contribution – eg Advisory Groups</li> <li>✓ Good partnerships</li> <li>✓ Strong collaborations developing between Universities and NHS Boards</li> </ul>		<p>↑ Very positive views from the Executive Group on the benefits of SISCC supporting the collaboration between core partners, universities and NHS Boards – this positive foundation needs to be nurtured and further developed.</p>
Programme management	<ul style="list-style-type: none"> <li>✓ Good support from the SISCC core team</li> </ul>	<ul style="list-style-type: none"> <li>↓ Progress of large-scale projects slower than planned</li> <li>↓ Difficulty at times in visualising the link between the research theme work and the work-streams</li> <li>↓ Challenges with staff appointments resulting from financial constraints</li> <li>↓ Some in-kind contributions have not materialised</li> <li>↓ Heavy administrative and meeting requirements</li> <li>↓ Lack of clear prioritisation process for major new work</li> <li>↓ Executive Group membership and role needs to be reviewed</li> </ul>	<p>↑ The delays with the large-scale projects have been significantly influenced by funding issues and the lack of appointable candidates.</p> <p>↑ The Associate Director for Partnerships and work-streams is now in post alongside the Associate Director for Evaluation and Programmes. The post to support one of the work-streams has been finalised.</p> <p>↑ This delay has led to the challenge of pulling together the research themes and large-scale projects – which will be addressed as the implementation planning embeds in the coming months.</p> <p>↑ The delay has had an impact but is being progressed, most in-kind input is now in place.</p> <p>↑ A revision of the role of the Advisory Groups and the administrative responsibilities is currently being undertaken.</p> <p>↑ Draft SISCC prioritisation process will be presented to the Board in September 2016 to address these concerns</p>

Theme	What works well	What needs to be improved	Analysis and actions
			<p>↑ Additional invitations have been made to social care representatives and other core partners to enhance the strategic role of the Executive Group</p> <p>↑ Improve ownership of work-stream decision-making and responsibilities</p>
Communication and engagement	<p>✓ Communication is working</p>	<p>↓ Limited partnership and engagement: links with social care highlighted as a concern</p> <p>↓ Changing improvement landscape – number of different organisations seem to be competing, e.g. development of iHub</p> <p>↓ QI Lead for NES has changed and vacant SPSP Clinical Lead has hindered engagement at key partnership areas</p> <p>↓ Establishing collaborative partnerships with NHS Boards etc has been challenging – difficulty accessing key people for meetings</p> <p>↓ Need to increase the visibility of the work and work in progress</p> <p>↓ Challenges for people understanding the overall work of SISCC</p> <p>↓ SISCC work seen by some as Dundee-centric</p>	<p>↑ Appointment of Associate Director with responsibilities for partnerships has been made and will work on engagement and communication strategy to ensure constructive relationships are established with other improvement organisations and key groups in Scotland and increase the visibility of SISCC.</p> <p>↑ Executive Group invited representatives from social care since it was established, however engagement has been challenging. This issue is being addressed.</p> <p>↑ Revised website and communication strategy will aim to address these issues. Resources for communication are, however, very limited.</p> <p>↑ Extend pilot work and explore additional collaborative working with organisations across Scotland</p>
Achievements	<p>✓ Traction in the Capacity &amp; Capability Research Theme – positive results demonstrated from the work with students and early career professionals working as change agents</p> <p>✓ Training and Development Advisory Group reports good and positive engagement – highlighting the work with HIS and NES</p> <p>✓ Post-doctoral training and grant writing group has resulted in a number of bid applications and positive feedback from participants</p>		<p>↑ Need to assess how these positive examples of the SISCC programme can be taken forward to build on the solid foundation established in the absence of the expected funding support.</p>
Branding and identity	<p>✓ Message that the “purpose of SISCC is to collaborate, complement and evaluate improvement work/organisations rather than</p>		<p>↑ Associate Director for Partnerships developing engagement and communication strategy for 2016-17 to enhance existing positive working relationships and develop new relationships with</p>

Theme	What works well	What needs to be improved	Analysis and actions
	<p>competence" is being heard and understood</p>		<p>organisations across Scotland to support the delivery of the key SISSC outcomes and identify opportunities for collaborative working.</p>

## Appendix 6

### Selected SISCC-related work (not supported by SISCC resources)

#### Student supervision

##### *Masters students:*

- Caren Mullen: Staff views on barriers to utilizing the National Early Warning Score (NEWS) within older peoples' services in the inpatient ward areas of community hospitals (Renfrew)
- Lauraine Duncan: Economic evaluation of universal or targeted parent support programmes (Renfrew)
- Catherine Klein: enhancing quality in perinatal services in a large health care organisation in the western United States (Renfrew)

##### *PhD students:*

- Peter Kailemia: Enhancing quality through tackling barriers for women presenting with breast cancer symptoms in a rural setting in Kenya (Renfrew)
- The impact of contextual factors on the prescribing of psychoactive drugs with older people: An analysis of treatment culture in nursing homes. Collaborative project with School of Pharmacy, Queens University Belfast. Project funded by the Alzheimer's Society UK (McCormack)
- The role of facilitation in enabling the movement of nurses from a reflective appraisal system to engaging in critically reflective work-based learning, and an evaluation of the outcomes of this learning compared to 'traditional' classroom based learning (Williams, C) (McCormack)
- Change agency in evidence-informed health care: A realist synthesis (deKorby K) (McCormack)
- Targeted OT interventions for people living with dementia (Kinsella N) [Alzheimer's Scotland PhD studentship] (McCormack)

#### Working groups

##### *International:*

- WHO working group on quality of care in maternal and newborn health (Renfrew)
- WHO working group on implementing high quality midwifery globally (Renfrew)

##### *National:*

- Review group for Scottish Government review of maternity and neonatal services: plus co-Chair of the Evidence and Data sub-group. This has included leading the evidence reviews to inform review recommendations. (Renfrew)

#### Grants and proposals

##### *Awarded*

- Validation of an older person's prehospital early warning score (The VOPPEs study). Dunhill Medical Trust; £84,473 (Rooney)
- Follow up to the Validation of Early Warning Score and Lactate in Pre-hospital Setting (The VELPS II study). Abbott Point of Care; £37,685 (Rooney)
- Validation of Early Warning Score in Paediatric Ambulance Patients (The VESPA Study). The Laerdal Foundation \$24,811 and \$24,252 (Rooney)

- A Measure for Sepsis Outcome in Scotland (S.O.S). Fiona Elizabeth Agnew Trust Understanding Research and Education about Sepsis Awards; £4,960 and £4,983 (Rooney)
- Care Home as Cinematic Community: Enhancing Social Connectivity through Film. Carnegie Trust; £5,965 (Breckenridge, Kroll)
- Sensory Impairment and Pharmaceutical Care: What are the needs of older people receiving polypharmacy? Chief Scientist's Office; £201,308 (Kroll)
- Marie Curie Cancer Care - Developing Person-centred Practice in the Edinburgh Hospice (McCormack)
- Age UK/Burdett Trust for Nursing – The Listening and Learning Project in acute care services for older people (McCormack)
- UK National Institute of Health Research – Reducing hospital admissions of older people from care homes: The BHIRCH Project (McCormack)
- UK National Institute of Health Research – The OPSWISE Study (Improving skills and care standards in the clinical support workforce: a realist synthesis of workforce development interventions) (McCormack)
- Assessing quality in maternity services in NHS Fife and NHS Tayside (£ to be confirmed) (Renfrew)

#### *Submitted*

- NIHR Research for Patient Benefit (RfPB) programme funding application. Symptom appraisal following primary breast cancer: promoting timely presentation to health services with possible symptoms of recurrence. Submitted August 2016 (Gray, co-applicant) - awaiting decision

#### **Related publications**

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