IRIHS is a research unit within the Nuffield Department of Primary Care Health Sciences at the University of Oxford. It is led by Professors Trisha Greenhalgh and Sara Shaw. IRIHS aims to undertake high-quality interdisciplinary research, teaching and applied scholarship in fields relating to clinical practice, organisation and delivery of health services, health policy, translational science (covering the social and behavioural science of innovation and adoption), digital health and the patient experience.

Main achievements in 2019

1. EXPANSION OF ACADEMIC STAFF. We have continued to expand. We now have one Clinical Professor, one Associate Professor, three Senior Researchers, eight Postdoctoral Researchers, 15 DPhil students, two additional (predoctoral) researchers, four Academic Clinical Fellows, and six academic-related and support staff.

2. RESEARCH. Research income for new research studies in 2019 included £480K as principal investigators (led by SS, TG, CP and JW). We have around £9M in ongoing research grants.

3. PUBLICATION AND DISSEMINATION. We published 42 peer-reviewed academic articles. We attracted £112K in impact-related funding for industry attachments and policy engagement. We gave a number of high-profile keynote lectures, conference presentations and policy briefings. IRIHS senior staff sit on various policy groups e.g. Fahy is Special Adviser to the House of Commons Select Committee on Brexit; Greenhalgh advises World Health Organisation and NHS England.

4. TEACHING. We contributed to various MSc courses at Oxford. We gained full approval for a new MSc and DPhil Programme in Translational Health Sciences, which will take its first students in October 2020.

5. DOCTORAL STUDENTS. Of our 15 DPhil students, one passed with no corrections and another passed with minor corrections; a staff member (JD) also gained a DPhil. One student passed Confirmation of Status and three passed Transfer of Status.

6. FELLOWSHIPS. Four postdocs (Paparini, Papoutsi, Rushforth, Seuren) gained Higher Education Innovation Fund Knowledge Exchange Fellowships. One Senior Researcher (Wherton) gained a Fellowship at Wolfson College.

Staff in post on 31st December 2019 (see also DPhil students below)

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Academic field</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trisha</td>
<td>Greenhalgh</td>
<td>Clinical Professor and Co-Director of IRIHS</td>
<td>100%</td>
</tr>
<tr>
<td>Sara</td>
<td>Shaw</td>
<td>Associate Professor and Co-Director of IRIHS</td>
<td>90%</td>
</tr>
<tr>
<td>Nick</td>
<td>Fahy</td>
<td>Senior Researcher</td>
<td>80%</td>
</tr>
<tr>
<td>Joe</td>
<td>Wherton</td>
<td>Senior Researcher</td>
<td>100%</td>
</tr>
<tr>
<td>Geoff</td>
<td>Wong</td>
<td>Clinical Research Fellow</td>
<td>40%</td>
</tr>
<tr>
<td>Stuart</td>
<td>Faulkner</td>
<td>Postdoctoral Researcher</td>
<td>100%</td>
</tr>
<tr>
<td>Teresa</td>
<td>Finlay</td>
<td>Postdoctoral Researcher</td>
<td>80%</td>
</tr>
<tr>
<td>Name</td>
<td>Role</td>
<td>Main focus</td>
<td>FTE</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Gemma Hughes</td>
<td>Postdoctoral Researcher</td>
<td>Social sciences / NHS management</td>
<td>100%</td>
</tr>
<tr>
<td>Suzanne Li</td>
<td>Postdoctoral Researcher</td>
<td>Social sciences</td>
<td>60%</td>
</tr>
<tr>
<td>Sara Paparini</td>
<td>Postdoctoral Researcher</td>
<td>Social sciences (Anthropology)</td>
<td>100%</td>
</tr>
<tr>
<td>Chrysanthi Papoutsi</td>
<td>Postdoctoral Researcher</td>
<td>Social sciences</td>
<td>100%</td>
</tr>
<tr>
<td>Alexander Rushforth</td>
<td>Postdoctoral Researcher</td>
<td>Social sciences</td>
<td>100%</td>
</tr>
<tr>
<td>Sara Paparini</td>
<td>Postdoctoral Researcher</td>
<td>Social sciences (Anthropology)</td>
<td>100%</td>
</tr>
<tr>
<td>Alexander Rushforth</td>
<td>Postdoctoral Researcher</td>
<td>Social sciences</td>
<td>100%</td>
</tr>
<tr>
<td>Lucas Seuren</td>
<td>Postdoctoral Researcher</td>
<td>Linguistics</td>
<td>100%</td>
</tr>
<tr>
<td>Christine A’Court</td>
<td>GP Researcher</td>
<td>GP</td>
<td>5%</td>
</tr>
<tr>
<td>Claire Duddy</td>
<td>Research Fellow</td>
<td>Realist reviewer / information specialist</td>
<td>67%</td>
</tr>
<tr>
<td>Luke Allen</td>
<td>Academic Clinical Fellow</td>
<td>GP</td>
<td>50%</td>
</tr>
<tr>
<td>Asli Kalin</td>
<td>Academic Clinical Fellow</td>
<td>GP</td>
<td>20%</td>
</tr>
<tr>
<td>Emma Ladds</td>
<td>Academic Clinical Fellow</td>
<td>GP</td>
<td>20%</td>
</tr>
<tr>
<td>Michael Walker</td>
<td>Academic Clinical Fellow</td>
<td>GP</td>
<td>20%</td>
</tr>
<tr>
<td>Eleanor Barry</td>
<td>Doctoral Fellow</td>
<td>GP</td>
<td>50%</td>
</tr>
<tr>
<td>Julian Treadwell</td>
<td>Doctoral Fellow</td>
<td>GP</td>
<td>75%</td>
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ACADEMIC-RELATED AND SUPPORT STAFF

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Main focus</th>
<th>FTE</th>
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</thead>
<tbody>
<tr>
<td>Julie Darbyshire</td>
<td>Research Manager</td>
<td>Clinical Informatics</td>
<td>50%</td>
</tr>
<tr>
<td>Polly Kerr</td>
<td>BRC PPI Manager</td>
<td>Patient and public involvement, communications</td>
<td>90%</td>
</tr>
<tr>
<td>Laiba Husain</td>
<td>Researcher</td>
<td>Social Sciences</td>
<td>60%</td>
</tr>
<tr>
<td>Jill Fardon</td>
<td>Administrator / manager</td>
<td>BRC theme liaison / PA</td>
<td>80%</td>
</tr>
<tr>
<td>Caroline Jordan</td>
<td>Administrator</td>
<td>General support</td>
<td>20%</td>
</tr>
<tr>
<td>Charlotte Thompson-Grant</td>
<td>Administrator</td>
<td>General support / PA</td>
<td>72%</td>
</tr>
</tbody>
</table>

ASSOCIATES

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Academic field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aileen Clarke</td>
<td>Honorary Clinical Professor</td>
<td>Health services research</td>
</tr>
<tr>
<td>Alexander Finlayson</td>
<td>Past Academic Clinical Fellow (GP)</td>
<td>Primary health care</td>
</tr>
</tbody>
</table>

Higher degree students (including those on staff payroll)

BASED IN OUR DEPARTMENT (INCLUDING DPHILS in EBHC REGISTERED WITH CONT ED)

<table>
<thead>
<tr>
<th>Name</th>
<th>Background</th>
<th>Supervisor</th>
<th>Funding</th>
<th>Topic</th>
<th>From (FT/PT)</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominic Hurst</td>
<td>Dentist</td>
<td>Greenhalgh Mckan</td>
<td>Self</td>
<td>Dentists’ knowledge-in-practice</td>
<td>2012 (PT)</td>
<td>Passed with no corrections, July 2019</td>
</tr>
<tr>
<td>Adrian Rohrbasser</td>
<td>GP / Educator</td>
<td>Wong, Harris, Mckan</td>
<td>Self</td>
<td>Quality circles in primary health care: realist evaluation</td>
<td>2013 (PT)</td>
<td>CoS passed in Jan 2019</td>
</tr>
<tr>
<td>Samantha Roberts</td>
<td>Doctor / manager</td>
<td>Greenhalgh Shaw</td>
<td>Self</td>
<td>Policies to prevent type 2 diabetes</td>
<td>2015 (PT)</td>
<td>Passed with minor corrections, May 2019</td>
</tr>
<tr>
<td>Name</td>
<td>Based in</td>
<td>Background</td>
<td>Supervisor</td>
<td>Topic</td>
<td>From</td>
<td>Progress</td>
</tr>
<tr>
<td>-----------------------</td>
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<td>---------------------</td>
</tr>
<tr>
<td>Caitlin Pilbeam</td>
<td>Anthropology</td>
<td>Greenhalgh Potter</td>
<td>Wellcome Trust</td>
<td>Living well while dying</td>
<td>2016</td>
<td>Viva in Jan 2020</td>
</tr>
<tr>
<td>Sietse Wieringa</td>
<td>GP</td>
<td>Greenhalgh Engebretsen</td>
<td>Norwegian Research Council</td>
<td>Mindlines (socially shared knowledge) among GPs</td>
<td>2016</td>
<td>Viva in Jan 2020</td>
</tr>
<tr>
<td>Katrin Micklitz</td>
<td>Mindfulness Practitioner</td>
<td>Wong, Howick</td>
<td>Self</td>
<td>Workplace-based mindfulness programmes</td>
<td>2017</td>
<td>ToS in Jan 2020</td>
</tr>
<tr>
<td>Julian Treadwell</td>
<td>GP</td>
<td>Greenhalgh Mahtani Crocker</td>
<td>NIHR DRF</td>
<td>Online tools for assessing benefits &amp; harms of treatments</td>
<td>2018</td>
<td>ToS in Jan 2020</td>
</tr>
<tr>
<td>Jacobus Koezte</td>
<td>Doctor</td>
<td>Greenhalgh Fahy</td>
<td>Rhodes Scholar</td>
<td>Ethical influences on clinician-managers</td>
<td>2018</td>
<td>ToS in Jan 2020</td>
</tr>
<tr>
<td>Alex Jager</td>
<td>Social policy</td>
<td>Wong, Papoutsi</td>
<td>NIHR SPCR</td>
<td>Incorporating big data in commissioning: realist approach</td>
<td>2018</td>
<td>ToS in Jan 2020</td>
</tr>
<tr>
<td>Jackie Walumbe</td>
<td>Physiotherapy</td>
<td>Shaw, Silman, Swinglehurst</td>
<td>NIHR DRF</td>
<td>Self-management in chronic pain</td>
<td>2018</td>
<td>ToS passed in Sept 2019</td>
</tr>
<tr>
<td>Ellie Barry</td>
<td>GP</td>
<td>Greenhalgh Shaw</td>
<td>NIHR DRF</td>
<td>Lived experience of pre-diabetes</td>
<td>2018</td>
<td></td>
</tr>
<tr>
<td>Mona Koshkouei</td>
<td>Pharmacy</td>
<td>Greenhalgh Dopson</td>
<td>Self</td>
<td>Falsified Medicines Directive</td>
<td>2018</td>
<td>ToS passed Nov 2019</td>
</tr>
<tr>
<td>Maryam Ahmadyar</td>
<td>Dental public health</td>
<td>Wong</td>
<td>Clarendon scholar</td>
<td>Improving access of young homeless people to dental services</td>
<td>2018</td>
<td>ToS in Jan 2020</td>
</tr>
<tr>
<td>Georgette Eaton</td>
<td>Paramedic</td>
<td>Mahtani, Wong, Tierney</td>
<td>Self/HEE</td>
<td>Use of paramedics in primary care</td>
<td>2019</td>
<td></td>
</tr>
</tbody>
</table>

**BASED ELSEWHERE**

<table>
<thead>
<tr>
<th>Name</th>
<th>Based in</th>
<th>Background</th>
<th>Supervisor</th>
<th>Topic</th>
<th>From (FT/PT)</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaimie Lee Freeman</td>
<td>Oxford Internet Institute</td>
<td>Psychology &amp; Education</td>
<td>Neff Shaw Papoutsi</td>
<td>Adolescents’ use of digital self-tracking technologies</td>
<td>2019 (FT)</td>
<td></td>
</tr>
<tr>
<td>Sarah Kilcoyne</td>
<td>Law</td>
<td>SALT/Law</td>
<td>Herring, Teare, Finlay</td>
<td>Children’s decision-making in Craniosynostosis care</td>
<td>2017 (PT)</td>
<td>ToS passed 2019</td>
</tr>
<tr>
<td>Oscar Lyons</td>
<td>Nuffield Dept of Surgical Science</td>
<td>Medical doctor</td>
<td>Fahy, Canter, MucCulloch</td>
<td>Does leadership training for clinical staff lead to clinical outcome benefits?</td>
<td>2017 (FT)</td>
<td>CoS passed Sept 2019</td>
</tr>
<tr>
<td>Tim Stephens</td>
<td>Queen Mary U of London</td>
<td>Intensive care nursing</td>
<td>Pearse, Shaw</td>
<td>Sustainability of quality improvement in acute settings</td>
<td>2015 (PT)</td>
<td>9m review passed Feb 2016</td>
</tr>
</tbody>
</table>
Staff member Julie Darbyshire passed her DPhil in December 2019.

### Research activity

**New research grants secured in 2019 on which we are principal investigators:**

1. **Case study, Context and Complex interventions (TRIPLE C) – development of guidance and publication standards to support case study-based research into the influences of context on complex system-level interventions.** May 2019 – Nov 2020, Medical Research Council, £249,547 (SS – PI with SP, CP, TG and JW and others).


4. **Implementation and evaluation framework for decision support:** £16,000 Scottish Government in collaboration with Digital Health and Care Institute. Developing a framework to support and evaluate the national rollout of clinical decision-making tools in Scotland using the NASSS framework (JW and CP).

5. **Patient-centred development of epilepsy technologies.** £9,500, Medical Research Council Proximity to Discovery Fund, 2019-2020 (CP – PI, with TG).


**New research grants secured in 2019 on which we are co-investigators:**

7. **Safety-netting in Primary Care: A realist review of the contexts and mechanisms of its effectiveness.** £7,320 of £149,976. NIHR RfPB Programme. Oct 2019 to Dec 2020 (PI - Friedmann-Smith, Nuffield Department of Primary Care Health Sciences, Oxford; GW as Co-Applicant).


9. **ESMI-II: The Effectiveness and cost effectiveness of community perinatal Mental health services.** £18,377 of £1,189,980. NIHR HS&DR Programme. June 2019 to May 2022. (PI - O’Mahen, University of Exeter, Exeter; GW as Co-Applicant).

10. **VIRTUAL PRESENCE: A cultural analysis of the emergence of ‘telepresence technologies’ as a solution to loneliness.** Research Council of Norway. International collaboration with Oslo Met and University of Oslo. PI - Marit Haldar, with TG, JW, SS. NKr 835,000 of NKr28,536,000 (about £85,000 of £3 million).

Ongoing research studies on which we are principal investigators:

12. Scaling up virtual consultations across the NHS – implementing, evaluating and sustaining improvements. Health Foundation Scaling Up Improvement Award, £222K of total grant £472K, Dec 17 – May 21 (TG as academic PI, with SS, CP, JW, partners to NHS-led study by S Vijayaraghavan et al).

13. Partnerships for Health, Wealth and Innovation (Biomedical Research Centre theme). NIHR, £6.5M (of which £1.393M is formally allocated to IRIHS). April 2017 – March 2022. (TG, with NF).


16. PARADIGM (Patients Active in Research and Dialogues for an Improved Generation of Medicines), £457,653 of €9M total grant, funded by the EU’s Innovative Medicines Initiative, 2.5 years March 2018 – Aug 2020 (NF is UK-based PI with SF, SI, TF).

Ongoing research studies on which we are named co-investigators:


18. Can group clinics offer a better way to meet the complex health and social care needs of young adults with diabetes in an ethnically diverse, socioeconomically deprived population? (TOGETHER study) NIHR HS&DR. £148k of total £420k, Dec 2016 – Nov 2019. (TG, Co-I to S Finer at QMUL, CP).


23. Remediating doctors’ performance to restore patient safety: A realist review. £22,422 of total grant £200,698 NIHR HS&DR Programme. April 2018 - Sept 2019 (PI – Brennan, University of Plymouth; GW as co-applicant).
**Knowledge Exchange Fellowship grants secured in 2019:**

1. **Delivering Fast Track Cities**, £24,675. HEIF Policy Engagement Fellowship. (Sara Paparini as PI with Sara Shaw).

2. **Co-designing a digital solution for multidisciplinary team (MDT) meetings for cancer care.** £22,920. HEIF Knowledge Exchange Fellowship. November 2019-July 2020 (Trish Greenhalgh as PI with Alex Rushforth).


**Impact activities in 2019**

1. Interdisciplinary conferences and workshops involving academics, policymakers, patients/citizens and industry:
   a. One-day conference at St. Anne's College in April 2019 on *Social Challenges of Personalised Medicine*. Funded by (funded by NIHR Biomedical Research Centre (AR organised).
   b. One-day workshop at Jesus College in May 2019 on *Maximising Value from New Diagnostic Tests*. Funded jointly by the NIHR, IFCC, BIVDA and Oxford AHSN (TG organised).
   c. *Future of health and care*. A pilot Foresight event in March 2019 at Green Templeton which brought together academics, policymakers and practitioners from across the world to tackle the key challenges to developing sustainable health and care systems (TG, SS and NF).
   d. *Digital Health Oxford* (DHOx), a cross-disciplinary and cross-sector group bringing together researchers, patients, developers, clinicians and others interested in digital health (CP – co-lead).
   e. *Realist review and realist evaluation training* for researchers in health, policy and social care from across British Columbia and a policy orientated dissemination event focussed on the value of realist research approaches was delivered on 9 Oct 2019 at UBC (Geoff Wong).
   f. Addressing the challenges to *scaling up and spreading innovations in health care.* Health 4.0 Forum, British Embassy, Vienna, 5 March 2019 (Joe Wherton).


3. Additional public engagement activity (see also impact case study appended) included a 20-minute play “Is there a doctor in the house?” at Bloomsbury Theatre, London, in Oct 2019. The play was based on findings of the early visiting service realist review, undertaken as part of the SPCR Evidence Synthesis Working Group. Play was followed by an hour-long facilitated discussion and workshop with the audience to come up with policy and practice recommendations. GW provided methodological support to the realist review and helped write the script (GW).
Main teaching achievements

1. **New MSc.** We have developed a new MSc in Translational Science and Global Health in collaboration with Continuing Education; it is scheduled to take its first students in October 2020. Modules and module leads are:
   - Module presentation: Introductory module (SS)
   - Module presentation: Behavioural Science and Complex Interventions (AF)
   - Module presentation: Economics and Regulation (SF, SP, YY)
   - Ethics and Justice in Translational Science (run by Philosophy dept)
   - Module presentation: Health Organisations and Policy (NF)
   - Module presentation: Patients, Citizens and the Politics of Evidence (TF, CP)
   - Research Impact and Health Research Systems (AR, PO)
   - Technological Innovation and Digital Health (CP)
   - Translational Science and Global Health (AK, SP)
   - Dissertation (including placements) (JW, TG)

2. **Existing MSc teaching.** TG is co-lead on the Knowledge to Action Module in MSc in EBHC, on which NF, TF and SS also teach. GW leads the MSc module in Realist Evaluation and Review with CP. We have also taught on the following Masters courses run by other groups:
   - MSc in Evidence-Based Health Care (TG, GW, CP, SS, TF)
   - MSc in Evidence-Based Systematic Reviews (GW, CP)
   - MSc in Evidence-Based Social Intervention & Policy Evaluation, Department of Social Policy and Intervention (SS, NF)
   - MSc in International Health & Tropical Medicine, Nuffield Department of Medicine (TG)
   - MSc in Policy Evaluation, Blavatnik (SS, TG, NF)
   - MSc in Surgical Sciences, Nuffield Department of Surgery (TG, CP)
   - MSc in Healthcare Management and Leadership (NF)
   - MBA dissertation projects, Saïd (NF)

3. **Undergraduate teaching.** TG gives lectures and undertakes coaching and marking on the undergraduate medicine course.

4. **College-based support and teaching.** TG, NF, SS and CP are College Advisors at Green Templeton and GW is a College Advisor at Kellogg. NF is on the steering committee of the Management in Medicine programme at Green Templeton. NF, SS and TG are part of the Future of Health and Care initiative at Green Templeton.

Academic fellowships

*New fellowships commenced in 2019:*
See Knowledge Exchange Fellowships awarded to Paparini, Papoutsi, Rushforth and Seuren. Joe Wherton gained a Fellowship at Wolfson College.
Continuing fellowships:


**Academic publications**

Publications considered possible returns to REF2021 are highlighted. Associates’ publications not included.


31. Ponsford R, Thompson C, Paparini S. We need a renewed focus on primary prevention to tackle youth knife violence. *BMJ* 2019 Apr 16;365:l1769.


38. Treadwell J. Has the polypill finally proven its worth? *Drugs and Therapeutics Bulletin* 2019; 57:178


42. Wherton J, Greenhalgh T, Shaw SE, Procter R. Wandering as a socio-technical practice: extending the theorisation of GPS tracking in cognitive impairment. *Qual Health Research* 2019; e-pub DOI://1d00.i.1o1rg7/71/01.10147977/13024391738273918375983.

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**Major keynote lectures, workshops and conference presentations**

**DARBYSHIRE** presented her DPhil findings on noise in the intensive care unit to the Intensive Care Society conference December 2019 in a session: *Building Better ICUs*.

**GREENHALGH** gave several international keynote lectures including
- Choosing Wisely International Conference, Melbourne, Australia, April 2019
- European Health Policy Group, Bologna, Italy, April 2019
- Health Services Research UK Conference, Manchester, May 2019
- Joint Meeting of Health and Pharmaceutical Sector Chief Officers of the European Union, Helsinki, Finland, July 2019
- Annual Patient Safety Conference, Manchester, July 2019
HUGHES presented *Integrated care, social practices and complexity: what can we learn from an ethnographic case study?* As the opening presentation at Nuffield Trust and Health Foundation seminar on Integrated Care, May 2019.

### External appointments

**Allen:**
- Editorial board member, BJGP
- WHO consultant on primary care and public health

**Fahy:**
- Oxford: co-director of the GTC Initiative on the Future of Health and Care
- UK: Specialist advisor to House of Commons Health Select Committee; with Blavatnik School of Government, advising Department of Health and Social Care on strategic policy challenges
- Management Center Innsbruck: appointed member of the Academic Advisory Council of the new Center for Social and Health Innovation
- European: Policy adviser within an EU-funded research project ‘Transfer of Organisational innovations for Resilient, Effective, equitable, Accessible, sustainable and Comprehensive Health Services and Systems’, a 29-partner consortium bringing together ministries, research institutes and universities and aiming to set a Europe-wide agenda for research into health services and systems; advising European Observatory on health systems and policies on implementation research; appointed to the board of the European Health Forum Gastein and leading work on capacity building for policymakers at the Forum
- World Health Organisation: rapporteur for the WHO/EURO Foresight project for the future of European health systems; chair of the WHO Expert Group to enhance Health 2020 monitoring and reporting; adviser to WHO initiative on digitalisation of European health systems
- Executive Committee, Future of Health & Care Initiative, Green Templeton College

**Greenhalgh:**
- Chair, NHS Improvement Committee on Spoken Communication in Patient Safety
- Member, Scientific and Technical Advisory Committee, WHO Alliance for Health Policy and Systems Research
- Visiting Professor, Radboud University, Nijmegen, Netherlands
- Visiting Professor, Macquarie University, Sydney, Australia
- Distinguished Fellow, George Institute, Sydney, Australia
- European Public Health Association, International Advisory Group on Public Health Research Impact
- NHS England, Primary Care Digital Transformation Team
- Executive Committee, Future of Health & Care Initiative, Green Templeton College
- NHS England Primary Care Digital Transformation Advisory Group
- WHO Alliance for Health Policy and Systems Research Scientific and Technical Advisory Committee
- Prime Minister’s Industrial Strategy Challenge Fund Healthy Ageing Working Group
- International Adviser, Research Council of Norway
- International Adviser to Centre for Research Excellence, Macquarie University, Australia
Paparini
- Honorary Research fellow, London School of Hygiene & Tropical Medicine

Shaw
- Oxford: co-director of the GTC Initiative on the Future of Health and Care
- Delivering Primary Health Care to Homeless People, NIHR Advisory Committee
- Executive Committee, Future of Health & Care Initiative, Green Templeton College
- Honorary Reader, Queen Mary, University of London

Treadwell
- National Institute for Health and Care Excellence: co-moderator, GP Reference Panel; Chair, Diabetes Pathway Committee and Member, Guidelines Manual Virtual Reference Group

Wherton
- Member, Oxford Academic Health Science Network (AHSN) Informatics Oversight Group
- Industry secondment with Microsoft Healthcare, Seattle, USA, through Oxford ESRC Knowledge Exchange Fellowship
- Wolfson College, Research Member of Common Room

Wong
- Peter Wall Institute of Advance Studies International Visiting Fellowship (Oct 2019 to Sept 2020)
- Member, National Institute for Health and Care Excellence, Guidelines Manual Virtual Reference Group
- Joint Deputy Chair, NIHR, Health Technology Assessment Programme – Primary Care Panel

Strategy for 2020

1. RESEARCH: Continue our current funded programmes of work – especially BRC, SCALS, Triple-C, PARADIGM and QUARC. Set up new funded collaborations e.g. with Norwegian colleagues for VIRTUAL PRESENCE. Secure a new programme grant. Horizon-scan for additional longer-term opportunities.

2. PUBLICATION AND DISSEMINATION: All independent research staff (i.e. those who are or have been PIs) to publish one REF-returnable empirical paper or systematic review. Continue and extend public engagement work in technology-related research.

3. TEACHING: Main priority in 2020 is setting up and delivering the MSc in Translational Health Sciences. Keep doctoral students on track. Ensure postdocs gain supervision experience.

4. STAFF AND STUDENT DEVELOPMENT. Support new DPhil applications related to our existing research programmes; ensure that all early career researchers have clear career plans and opportunities for progression. Where appropriate, submit applications for pre-doctoral, doctoral, post-doctoral and senior research fellowships.

Trisha Greenhalgh and Sara Shaw
January 2020
Impact case study:

Remote digital services (telehealth and telecare): a programme of research to improve uptake, scale-up, spread and the patient experience

1. Summary of the impact

A series of qualitative, mixed-method and action research studies generated in-depth insights and evidence-based principles and standards for remote digital services including remote monitoring devices and video links for clinical consultations and care support. Technology co-design work brought target users (patients and carers) together with industry partners and provider organisations to generate improved technology designs and service models. A major interactive public exhibition was held in collaboration with Oxford’s Pitt Rivers Museum, reaching 66,000 people. Our standard operating procedures (SOPs) for video consultations were adopted by NHS England and also informed the Care Quality Commission regulatory framework for digital services in primary care. We worked with national policymakers to address technical and operational bottlenecks to video consulting and supported roll-out of this innovative service model across multiple NHS providers. Impact awards included University of Oxford Vice Chancellor’s Public Engagement Award in 2016 and 2019, and the NIHR School of Primary Care Research Impactful Contribution in Patient and Public Involvement and Engagement prize 2019.

2. Underpinning research

Policymakers place high hopes on the potential of digital technologies to support radically new models of care, reduce demand on overstretched services and improve the patient experience. Telehealth is remote healthcare to the patient in their home; it includes remote monitoring (e.g. of biomarkers or symptoms) and remote communication (e.g. video consultations via Skype™ or FaceTime™). Telecare is provision of technology-supported services to improve safety and support independence (e.g. pendant alarms). Whilst randomised trials of telehealth/care have often (though not always) demonstrated feasibility, efficacy and safety, uptake of such services in the real world is typically disappointing. Despite much hype, few patients can currently contact their doctor or nurse through remote technology. This real-world implementation research built on previous RCTs by others and addressed (using mainly qualitative and participatory methods) the personal, organisational and societal barriers to the widespread roll-out and scale-up of telehealth and telecare in NHS and social care settings. It consisted of:

2a: Ethnographic studies of lived experience and co-design with older people (ATHENE study and follow-on studies). 40 participants varying in age (60-98), ethnicity, socioeconomic status, family networks and health conditions were followed longitudinally over time to observe how their use of assistive technologies changed with progression in their underlying conditions. Supplemented by extracts from medical records, this work generated rich case narratives which were shared with industry and care provider partners using co-design methodology in a series of facilitated workshops (including patients). A key finding was that ‘off the shelf’ technologies rarely met people’s needs. Rather, successful technological arrangements tended to be achieved through pragmatic, individualised, needs-focused adaptations (often of ‘old’, familiar technologies that were already lying around the home) by someone who knew the individual well. The study won the American Health Informatics Association Diana Forsyth Award for Research Linking Social Sciences and Health Informatics [1, 2]. Funding: Technology Strategy Board to TG 2012-2015 (£512K); NIHR Programme Development Grant to TG 2015-16 (£80K).

2b: Action research with organisations introducing telehealth or telecare (SCALS – Studies in Co-creating Assisted Living Solutions). Co-design and change facilitation with 7 organisations across UK (NHS, social care or 3rd sector), each seeking to introduce or improve a service via telehealth or telecare technologies. Included micro-level ethnographic work with patients/clients, meso-level organisational analysis and theorisation of the change process, and macro-level studies of the technological, economic and policy context [3-5]. Findings included rich depictions of the uncertainties and interdependencies (technical, organisational, clinical, commercial) involved in efforts to ‘mainstream’ an assistive technology within a health and/or social care service. To help surface and explore such uncertainties (and hence explain the many occasions where implementation efforts failed or achieved only partial success), we developed the NASSS (non-adoptions, abandonment, scale-up, spread, sustainability) framework which went on to be widely used by other researchers, policymakers and implementation teams (see below). This work was funded by a Wellcome Trust Senior Investigator Award to TG 2015-2020 (£1.052M).

2c: Action research to introduce and embed video consultations in NHS organisations. This large study across several departments of an NHS Trust explored and facilitated the introduction of video-based outpatient consultations in diabetes, cancer and antenatal clinics (Virtual Online Consultations – Advantages and Limitations, VOCAL) [6]; additionally, a component of the SCALS study (2b above) looked at video consultations in community-
based heart failure care [5]. Methodology included innovative video-recording of both ends of the remote consultation and micro-analysis of the clinician-patient interaction as well as meso- and macro-level studies of organisational and system change. In both studies, a key finding was the numerous uncertainties and interdependencies that repeatedly stalled or slowed the adoption, spread and scale-up of the video-based service (which was a major policy concern, since it had been flagged as a ‘modernisation’ priority). We used action research to work through various barriers to developing the service. Funding: NIHR HS&DR to TG 2015-17 (£535K) and Scottish Government to TG and JW 2019-20 (£50K). See also further funding for impact work on this topic below.

3. References to the research: Six references selected of > 20 papers from this research:


4. Details of the impact

4a: Co-design of assisted living technologies and services with patients and care staff

A critical element of the research described in sections 2a and 2b is co-design or co-creation – in which patients/clients work democratically with partners from industry and the service sector to generate here-and-now solutions (both new or adapted technologies and new or adapted service models) as well as generalizable contributions to the knowledge base. This means that the research and its impact occur not sequentially but in parallel. The ‘research’ component of the co-design work is described above. The impact component consisted of insights that fed into industry redesigning technologies and also to health and social care staff redesigning care models and pathways. An example of the former was clients’ difficulties with short battery life and their distress with an intrusive ‘low battery alarm’ (gadgets that flashed and beeped repeatedly were put in cupboards, buried under cushions or deliberately disabled). Industry’s raised awareness of the level of client distress from ‘low battery’ alarms and the difficulties and delays clients had with requests to change batteries led directly to an initiative by industry (ongoing) to extend battery life, develop reserve battery function and find less intrusive ways of indicating low battery. An example of service redesign was when clients and carers in our co-design workshops expressed dissatisfaction with GPS tracking technologies designed to enable people with memory difficulties to ‘wander’ safely outside the home. This led to an intersectoral impact effort led by our team to co-evolve improvements in GPS technologies (in collaboration with two industry partners) and improvements in support services for responding to GPS alarms (in collaboration with the local council); this was part-funded with an ESRC Impact Acceleration Award (1702-KEA-281). It won the University of Oxford Vice-Chancellor’s Award for Public Engagement 2016.

4b: Public engagement with the ‘messy reality’ of technology-supported care of older people

We gained two Wellcome Trust Public Engagement Awards totalling £42K (104830/Z/14A and B). We convened a public debate at the National Battle of Ideas (London) in October 2015: ‘Can Technology Solve the Ageing Time-Bomb?’ with speakers from academia, industry, design, policy and the third sector. The debate was well-attended by people with complex care needs, health and social care staff, technology designers and lay people; it was audio recorded and is available as a webcast. Working with the Pitt Rivers Museum in Oxford along with students from a local design college, we held a series of hands-on public workshops to consider how ‘bricolage’ (pragmatic, needs-based customisation by technology users and their carers) can help make assistive technologies acceptable and usable in the home. These workshops culminated in an interactive museum exhibition ‘Messy realities’ at the Pitt Rivers, featuring selected examples of technologies from the museum’s collections alongside contemporary assisted living technologies. Around 66,000 members of the public visited the exhibit, and there
was a major web feature. This work was Highly Commended by the University of Oxford Vice-Chancellor’s Award for Public Engagement 2019 and won the NIHR School of Primary Care Research Impactful Contribution in Patient and Public Involvement and Engagement prize 2019. A further exhibition was launched in 2020 with In Control by Design: a group developing technology solutions for neurological conditions. We also worked with museum staff and lay people to co-produce a series of podcasts on the ‘messy realities’ of health and care technologies in the home, again emphasising the importance of needs-focused, pragmatic customisation for making technologies ‘work’ in a home setting and in appreciating the symbolic and cultural meaning of technologies.

4c: Organisational and policy change to establish video outpatient consultation services locally and nationally in England

The VOCAL study described in section 2c also had a co-design component in which research and research impact evolved in parallel. Local impact to date has included:

a. Establishing video consultations as a ‘business as usual’ option for selected outpatient appointments in two clinical services (diabetes and hepatobiliary cancer) at Barts Health, and then working with ten additional clinical services also at Barts, including haematology, neurology and oncology to mainstream this option for patients in whom it is clinically appropriate;

b. Demonstrating clinical impact. In the diabetes service at Barts, to give one example, the ‘DNA’ (did not attend) rate fell from 50% to 11% in patients taking up the video consultation option, and there was a statistically significant reduction in HbA1c from 70 to 65 mmol/mol;

c. Specific commendation for video consultation as a marked area of recent improvement in the Care Quality Commission report on Barts Health;

d. Establishing local standard operating procedures for video consultations to take account of professional, logistical and information governance issues;

e. Co-designed (with patients and clinicians) written guidance on ‘Getting the Most out of Your Video Consultation’ (undertaken with Barts Health but website is open access for all.

At national level, two members of Simon Stevens’ technology team (NHS England) were on the VOCAL steering group and have been actively engaged with the emerging findings. This meant that as soon as our standard operating procedures for video consultations were ready and piloted locally, NHS England asked if we would share them. These SOPs been adopted by NHS England in their official guidance for remote consulting. As a further element of our pathway to impact, we undertook work at both local and national level to help policymakers overcome the ‘impasse’ of the lack of a specific tariff for video consultations which was holding back the operationalisation of this service model. We also informed development of the CQC regulatory framework for digital services in primary care.

With a £25K ESRC Impact Acceleration Award 2017-2018 and a £450K Health Foundation ‘Scaling Up’ award shared with our NHS partner (with TG and SS as co-investigators) [commenced March 2018], we have worked with Barts Health to deliver the following:

a. Establish a Virtual Consultation Unit (clinical, technical, management and administrative staff with expertise in setting up and delivering video consultations);

b. Resources that could be adapted and shared across other NHS settings and beyond e.g. policies, service agreements, technical support and information governance, standard operating principles, clinical pathways, business case templates, suggested outcome metrics;

c. Quarterly demonstration clinics which enabled visiting teams to observe virtual consultations in “real-time” and shadow staff delivering the service (including meeting service users);

d. Regular workshops for knowledge exchange, formative evaluation and co-design.

The Barts video work, along with the NASSS framework, was included as an example of good practice in the Topol Review of NHS informatics in February 2018.

4e: Policy decision to continue and extend video consultation services in Scotland

Our evaluation of video consultation services to rural and remote areas of in Scotland using the NASSS framework (see above): a) confirmed the technical robustness and fitness-for-purpose of the digital technology used for the video link (Attend Anywhere); b) highlighted the value of a system-wide, quality improvement implementation logic
with close attention to the co-embedding of technologies and work processes (in other words, the initiative succeeded because the staff saw it as “improving services” and not simply “implementing Attend Anywhere”); c) identified unmet need for IT support and training in some key NHS organisations; and d) revealed the need for considerable investment in staff and resources to install and support video technology in people’s homes (to further reduce travel burden on patients and to overcome the problem of ‘double handling’ when patients had their video consultation from a remote hospital or GP surgery). On the basis of this report, the Scottish Government will approve (or not) the continuation and expansion of the national Attend Anywhere video consultation services.

4f: Work with industry to inform technical refinement of video-consulting software
The VOCAL study (4c above) used Skype™ and piloted Skype for Business™. We worked closely with Microsoft, who were very keen to use our video data to inform refinement of their technologies to make it more fit for purpose in the clinical environment. With written patient consent, we shared a sub-sample of real video consultations, including synchronised footage of both clinician and patient ‘ends’ with industry designers (via HEIF-funded postdoc placements for JW at Microsoft international research headquarters in Seattle, USA). Adaptations were made to make the software more fit for purpose. Two further HEIF awards are funding another postdoc (Seuren) to work with Microsoft in UK on the design of peripheral devices (e.g. special cameras) to support remote physical examinations.

4f: Work with UK policymakers, service and industry to produce and apply the NASSS–CAT tools
The NASSS framework was developed to help with academic analysis. On its publication, we were immediately approached by national and local policymakers as well as industry and tech designers, who were interested in it for a variety of applied uses. We describe how we took some of these forward:

a. Department of Health, NHS Digital and Health Education England sought to use the NASSS framework as part of a wider initiative to build capacity among front-line NHS staff for selecting, adopting and using technologies to improve services. For example, we held a one-day training programme in May 2018 for senior Department of Health staff including Chris Whitty, Sir Chris Wormauld, Lord O’Shaughnessy and others, and a high-level one-day workshop with NHS Digital in January 2020 with policymakers to apply NASSS to learning health systems.

b. We joined forces with Prof Harvey Maylor, a professor of project management, and a small design consultancy, mHabitat, to combine the NASSS framework with an evidence-based complexity assessment tool (CAT) for assessing and managing complexity in technology projects. This was done in a series of 7 co-design workshops involving NHS, social care, policy, industry and patients. The resulting NASSS–CAT tools are available in four downloadable versions: a short and long form designed for project planning; a project monitoring tool; and an interview topic guide; they are already in use by groups seeking to implement or evaluate technology projects. In 2020, we were successful in an application for a Health Foundation grant of £50K to TG to produce electronic versions of the NASSS–CAT tools. We are also working with the University of Oxford Public Affairs Directorate to produce an animation to support dissemination and take-up of these tools.

c. NHS England and IPSOS Mori used the NASSS framework for the official evaluation of the Local Health Care Records Exemplars.

4h: International visits and collaborations
The NASSS framework and NASSS–CAT tools have generated considerable interest from policymakers and implementation teams internationally. These include:

a. Invited keynote lecture to WHO High-Level Regional Meeting on Health Systems, 13-14th June 2018: ‘How can we make innovation programmes in health and social care work?’

b. Invited keynote lecture to Joint meeting of Chief Medical, Nursing, Dental and Pharmaceutical Officers across the EU, Helsinki, Finland, conference entitled Health Systems for the Wellbeing of People in the 2020s on the occasion of Finland taking up the chairmanship of the EU Council, September 22nd – 24th, 2019.

c. Collaboration with psychiatric team in Gothenberg Hospital, Sweden to use NASSS–CAT to implement a patient-facing digital dashboard to access resources and advice remotely.

4i: Educational resource for medical students
We worked with the undergraduate medicine teaching team at U of Oxford to develop a curriculum and syllabus for remote consulting. We adapted anonymised video clips of video consultations and added learning objectives and teaching notes, and we trained clinical teaching staff to work with these.