Institution: University of Leicester		
Unit of Assessment: 21		
Title of case study: Sociological research delivering lasting impact on healthcare quality and safety		
Period when the underpinning research was undertaken: 2006–2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): 1) Natalie Armstrong 2) Edmund Chattoe-Brown 3) Mary Dixon-Woods 4) Carolyn Tarrant	**Role(s) (e.g. job title):** 1) Professor of Healthcare Improvement Research 2) Lecturer in Sociology 3) Professor of Medical Sociology 4) Professor of Health Services Research	**Period(s) employed by submitting HEI:** 1) 2008-present 2) 2006-present 3) 1994-2016 4) 2007-present
Period when the claimed impact occurred: August 2013–Present		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact

For more than a decade, the Social Science Applied to Healthcare Improvement Research (SAPPHIRE) Group at the University of Leicester (UoL) has applied a range of theoretically informed, sociological research to understand how efforts improving healthcare quality and safety succeed or fail. This body of work has led to significant advances in the applicability and success of healthcare improvement programmes. By approaching such issues through a sociological lens, this research presents a deeper understanding of the people at the heart of the systems in which they work, and has therefore, led to the effective design and implementation of a wide range of improvement tools. These include initiatives such as 'clinical communities', the Berwick review and the influential TIDieR checklist. SAPPHIRE research underpins policy and guidance to drive culture and behaviour change in healthcare systems both in the UK and internationally for the benefit of healthcare staff and those they care for.

2. Underpinning research

Sociological research undertaken by SAPPHIRE,in the Colleges of Life Sciences and Social Sciences, Arts and Humanities at UoL has addressed long-standing issues relating to consistent provision of quality healthcare across the world. Successive programmes of research aimed at developing and implementing successful improvement approaches in healthcare have used social science and sociological theory, in combination with mixed methods, to focus on different levels of the healthcare system: from the micro-interactions between individual patients and their care providers, to the organisation of healthcare institutions and systems as a whole.

This research has provided important insights into the challenges of: identifying the most appropriate points to intervene in order to maximise impact **[R1]**; the flurry of initiatives and targets that give rise to 'priority thickets' **[R2]**; the need for clear objectives and credible 'theories of change' in improvement work and intervention development **[R3]**; the problems with adopting improvement tools and approaches without consideration of their fit with local organisational cultures and histories **[R1]**; the challenges and unintended consequences in measurement and reporting for safety and quality **[R4]**; and contributions to the influential TIDieR checklist, a standardised method for reporting that enables the replicability of interventions **[R5]**.

SAPPHIRE's research has been increasingly focused on the development and evaluation of approaches to improvement that are built on, or complemented by sociologically informed theoretical and empirical foundations. This research is having lasting impact on improvement practice, for example, shifting prescriber behaviour and promoting a focus on collectively desirable outcomes **[R3]**, and evaluations of measures to activate patient involvement in their own care **[R6]**. This entails instrumenting a shift towards the adoption of better understandings of practice, intervention and change: 'in the round', taking full account of social and cultural processes in local contexts so as to minimise the unintended consequences of seeking to deliver improvements in healthcare.

A notable example of the development of improvement methods is the 'clinical community' approach, a novel model for organising improvement that seeks to take the best from existing approaches while addressing their key shortcomings **[R7]**. Built originally on an analysis by SAPPHIRE of a novel approach attempted in the United States, and then developed through the formative evaluation of a programme of interventions sponsored by the Health Foundation in the United Kingdom **[R7]**, the 'clinical community' described through SAPPHIRE research seeks to combine the best of 'bottom-up', network-based approaches to improvement (notably the enthusiasm, flexibility and breadth of expertise such interventions bring) with attention to the need for leadership, good organisation, and the ability to direct and compel healthcare improvement **[R8]**.

Collectively, this body of research, funded by the leading healthcare funding bodies including the Department of Health **[G1]**, NHS England **[G4]** and The Health Foundation **[G2, G3, G5]** continues to make demonstrable impacts on healthcare systems globally.

3. References to the research

R1. Benning, A., Ghaleb, M., Suokas, A., **Dixon-Woods, M.**, Dawson, J., Barber, N., ... and Lilford, R. (2011). Large scale organisational intervention to improve patient safety in four UK hospitals: mixed method evaluation. BMJ, 342, d195.

R2. **Dixon-Woods, M.**, Baker, R., Charles, K., Dawson, J., Jerzembek, G., Martin, G., ... and West, M. (2014). Culture and behaviour in the English National Health Service: overview of lessons from a large multimethod study. BMJ quality and safety, 23(2), 106-115.

R3. Krockow, E. M., Colman, A. M., **Chattoe-Brown**, **E.**, Jenkins, D. R., Perera, N., Mehtar, S., and **Tarrant, C**. (2019). Balancing the risks to individual and society: a systematic review and synthesis of qualitative research on antibiotic prescribing behaviour in hospitals. *The Journal of hospital infection*, *101*(4), 428–439.

R4. **Armstrong, N.**, Brewster, L., **Tarrant, C.**, Dixon, R., Willars, J., Power, M., and Dixon-Woods, M. (2018). Taking the heat or taking the temperature? A qualitative study of a large-scale exercise in seeking to measure for improvement, not blame. *Social science and medicine*, *198*, 157-164.

R5. Hoffmann, T. C., Glasziou, P. P., Boutron, I., Milne, R., Perera, R., Moher, D., ... and Michie, S. (2014). Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. BMJ, 348. [**Dixon-Woods** is author 11 of 15].

R6. Armstrong, N., Tarrant, C., Martin, G., Manktelow, B., Brewster, L., and Chew, S. (2017). Independent evaluation of the feasibility of using the Patient Activation Measure in the NHS in England-Final report. https://hdl.handle.net/2381/40449.

R7. Aveling, E. L., Martin, G., Herbert, G., and **Armstrong, N.** (2017). Optimising the community-based approach to healthcare improvement: Comparative case studies of the clinical community model in practice. Social Science and Medicine, 173, 96-103.
R8. **Dixon-Woods, M.**, McNicol, S., and Martin, G**.** (2012). Ten challenges in improving quality in healthcare: lessons from the Health Foundation's programme evaluations and relevant literature. BMJ Qual Saf, 21(10), 876-884.

G1. West, M., **M. Dixon-Woods**, L. McKee, G. Box, M. Murtagh, R. Baker, R. Lilford, J. Dawson and G. Martin, 'High Quality Care for All: Evaluating progress, problems and promise', Department of Health Policy Research Programme, January 2010, GBP1,400,000.
G2. Dixon-Woods, M., G. Martin**, N. Armstrong** and J. Banerjee, 'An evaluation of the Health Foundation's Closing the Gap through Clinical Communities programme', The Health Foundation, June 2010, GBP270,883.
G3. Dixon-Woods, M., G. Martin and M. Leslie, 'Review of the Health Foundation's evaluations to identify organisational factors that affect improvement', The Health Foundation, March 2011, GBP27,984.
G4. Armstrong, N., M Dixon-Woods, C Tarrant, 'Evaluation of NHS Safety Thermometer data collection and use', NHS England (via Haelo), January 2013, GBP102,403 (RM62G0562).
G5. Dixon-Woods M, Tarrant C, Lilford R, Bion J. An ethnographic study of efforts to reduce central venous catheter blood stream infections in intensive care units in England. The Health Foundation. 2009, GBP132,000.

4. Details of the impact

The collaborative research programmes undertaken by UoL ensures:

I. research is written for (and reaches) practice audiences, for example, through close working with intermediary organisations such as the Health Foundation to produce clear and direct learning guides;
II. close working in partnership with key collaborators from clinical and managerial healthcare backgrounds to develop, evaluate and spread innovations;
III. participation and contribution to policy and practice dialogue**.**

Safety culture and leadership

The Group's work has influenced government policy in the UK, in response to highly publicised failings in care quality provided to NHS patients, including the Mid-Staffordshire Hospitals NHS Trust. The Francis Inquiry report in 2013 into Mid-Staffordshire made far-reaching, extensive recommendations, and the task of turning these into concrete action required significant government consideration. **Dixon-Woods** was one of just 16 high-profile experts (including only five academics) in the field of healthcare quality and safety who served on the National Advisory Group on the Safety of Patients in England who produced the influential Berwick Review, 'A promise to learn – a commitment to act' **[E1a]**. A review of the impact of this report evidenced that 64% of respondents (NHS providers) confirmed the Berwick Review had had a 'high' or 'very high' impact on their safety improvement agenda and directly attributed improvements, such as better reporting of incidents on the ward, to the review **[E1b]**. Moreover, the Group's research was extensively referred to in the official government responses to the Francis inquiries and recommendations for safeguarding patient safety and improving quality **[E2].** Notably, the Department of Health's report **[E2],** referring to **[R2]** above states:

"*One of the most important lessons of the Public Inquiry – reinforced by the ground-breaking study of Culture and Behaviour in the English NHS by Mary Dixon-Woods and others* **[R2]** *– is the close relationship between the wellbeing of staff and outcomes for patients. In part this is about ensuring that the right numbers of staff are in place –* ***and the Government has acted on that issue*** *– but it is also about ensuring that the right support, engagement and values are in place"* (**[E2]**: Culture change in the NHS: Applying the lessons of the Francis Inquiries (2015).

Clinical communities

The 'clinical community' model draws together interdisciplinary experts from a range of professions (clinicians, healthcare practitioners and managers) to form 'communities of practice' to address specific issues **[R7]**. This was the centrepiece of an approach to improving quality and safety that achieved remarkable impact on key indicators of the quality of care at Johns Hopkins Hospital and Health System in the USA, resulting in six national awards **[E3]**. The 'clinical communities' approach has since been adopted by other healthcare systems such as NHS Quest, an alliance of NHS provider organisations that seek to be at the forefront of improving quality and safety. NHS Quest provides facilitation and support to 'clinical communities' to tackle specific problems, such as improving theatre safety and medicine safety [**E4a]**. The Reducing Falls Clinical Community, supported by NHS Quest, resulted in a sustained reduction in 'patient falls with harm' of more than 50% by 2016 **[E4b]**.

Nationally – Driving NHS improvement programmes

SAPPHIRE research findings, highlighting the importance of long-term culture change in embedding improvements, rather than one-off initiatives, has been widely influential and has underpinned several NHS improvement programmes. In 2016, **[R2]** was cited in 'Better Births: Improving Outcomes of Maternity Services in England' as identifying cultures of high quality and compassionate care **[E5]**. The same research contributed to the NHS-wide Culture and Leadership Programme Toolkit 2016 **[E6]** under both the 'vision and values' and the 'goals and performance' metrics. Research from **[R8]** and **[R2]** guided Condition 1 and Condition 3 in 'Developing People – Improving Care', a national framework for action on improvement and leadership development in NHS-funded services launched in 2016 **[E7]**.

Internationally – underpinning good practice

Health improvement guidance and policy across a range of topics have been influenced by SAPPHIRE's research. The World Health Organisation (WHO) Patient Safety Toolkit (2015) **[E8]**, aimed at ministries of health across the globe, recommends **[R8]** as a resource to help improve the quality of safety programmes. The call to action 'Delivering quality health services: A global imperative for universal health coverage' jointly published by WHO, the Organisation for Economic Co-operation and Development and the World Bank in 2018, also cites **[R8]** in the chapter on 'Understanding Levers to Improve Quality' **[E9]**. The WHO practical toolkit on 'Antimicrobial Stewardship in Programmes in Healthcare Facilities in Low and Middle-Income Countries' **[E10]** aims to support the uptake of interventions to drive behaviour change to address antimicrobial resistance. Intrinsic factors and behaviours that may prevent success of such interventions identified in **[R3]** are highlighted in the toolkit as important to consider.

The TIDieR checklist **[R5]** was developed to facilitate the sharing of good practice and successful interventions by standardising and improving the quality of reporting across healthcare. Reports that use the TIDieR checklist provide high-quality information upon which others can replicate research findings or practice interventions/clinical trials. Influential advocates of the TIDieR checklist include organisations such as the Ottawa Panel **[E11a]** (producing evidence-based clinical guidelines), the Equator Network **[E11b]** (an umbrella

organisation that brings together researchers, medical journal editors, peer reviewers, developers of reporting guidelines, research funding bodies and other collaborators- UK, France, Canada, Australasia) and the European Alliance of Associations for Rheumatology [**E11c**]. WHO includes the checklist in their recommendations for non-clinical interventions to reduce unnecessary caesarean sections **[E11d]**. In the UK, Cochrane Reviews recommend their authors use TIDieR to ensure a detailed description of interventions of interest in their protocols and reviews **[E11c]**.

Taken together, SAPPHIRE's sociological approach to culture and behaviour across healthcare systems worldwide has led to widespread policy change, practice guidance and tools that have driven a transformation in quality and safety improvement methods.

5. Sources to corroborate the impact

E1a. National Advisory Group on the Safety of Patients in England. A promise to learn commitment to act: improving the safety of patients in England. London: Department of Health, **Published in August 2013**.
E1b. The Health Foundation Infographic: A commitment to act? https://www.health.org.uk/infographic/infographic-a-commitment-to-act
E2. Department of Health. Culture change in the NHS: applying the lessons of the Francis Inquiries. London: The Stationery Office; 2015.
E3. Collated evaluations of intervention effectiveness on 'clinical communities' (2015-2017)
E4a. NHS Quest What We Do https://www.quest.nhs.uk/what-we-do/clinical-communities/
E4b. NHS Quest. Reducing falls clinical community [Internet]. 2016 [cited 2017 Oct 5]. Available from: https://www.quest.nhs.uk/what-we-do/case-study-reducing-falls/
E5. NHS Better Births Toolkit.
E6. NHS Improvement Culture and Leadership Toolkit https://improvement.nhs.uk/documents/1547/01-NHS101-tools_030417.pdf
E7. Developing People, Improving Care: national framework https://improvement.nhs.uk/documents/542/Developing_People-Improving_Care-010216.pdf.
E8. WHO Patient Safety Toolkit
E9. Delivering quality health services: A global imperative for universal health coverage https://www.worldbank.org/en/topic/universalhealthcoverage/publication/delivering-quality-health-services-a-global-imperative-for-universal-health-coverage
E10. Antimicrobial Stewardship in Programmes in Healthcare Facilities in Low and Middle-Income Countries' https://apps.who.int/iris/bitstream/handle/10665/329404/9789241515481-eng.pdf
E11a. Ottawa Panel Clinical Practice Guidelines.
E11b. Equator Network https://www.equator-network.org/reporting-guidelines/tidier/
E11c. 2018 EULAR Recommendations.
E11d. WHO recommendations non-clinical interventions to reduce unnecessary caesarean sections.
E11e. https://training.cochrane.org/resource/template-intervention-description-and-replication-tidier