Host department: **University of Southampton** *(with Bristol and Cardiff Universities)*

Title: **Developing a methodology of continuous, risk-based, consultation peer-review to identify and minimise unwarranted variation in clinician performance in in-hours general practice**

Proposed supervisory team:

Professor Geraldine Leydon – Professor of Medical Sociology & Healthcare interaction
Southampton University (*Medical sociological and qualitative methods expertise*)
Dr Leanne Morrison – Lecturer in Health Psychology
Southampton University (*Person-Based Approach and behavioural science expertise)*
Dr Andrew Carson-Stevens – Clinical Reader of Patient Safety and Quality Improvement
Cardiff University (*Patient safety and quality improvement expertise*)
Professor Chris Salisbury – Professor in Primary Health Care
University of Bristol (*Health services research and complex intervention development and evaluation expertise*)

Project background:

Unwarranted variation in clinical practice (e.g. variation in prescribing, use of investigations, referral rates and timely diagnosis etc) is an area of increasing interest due to the costs and harms of too much or too little healthcare**.** Within primary care internationally there is evidence of significant variation in clinician practice and a substantial burden of preventable harm. However, determining the extent to which observed variation is unwarranted and potentially harmful to patients is challenging, and requires detailed assessment of the clinician-patient interaction. Effective and standardised systems to detect and minimise unwarranted variation in clinician practice are crucial to ensure clinicians in an increasingly multidisciplinary general practice workforce can be deployed and supported to practice to their full potential, rather than beyond their competence. Such systems are limited in English general practice settings with implications for the efficiency and safety of care.

A potential solution is a risk-based, continuous, consultation peer-review system developed and used by an out-of-hours general practice service provider in Bristol, England, over the last 10 years. This methodology continuously samples a proportion of all clinicians' consultation records for peer-review based on the 'risk-status' of the clinician. 'Risk-status' is conceptualised as the degree of uncertainty regarding a clinician's standard of practice and is informed initially by duration of employment, and subsequently by ongoing performance as continuously assessed by the peer-review process. Sampled consultation records are screened weekly by a professionalised peer-review team, and cases causing concern are escalated for consensus peer-review at regular team meetings. Case-grading, and where indicated constructive comments, are continuously fed back to clinicians through weekly written electronic feedback, to which they may reply. Continuous modification of clinicians' risk-status on the basis of their performance creates a feedback mechanism to focus the finite peer-review resource where it is most needed.

Findings from our interview evaluation study of 20 multidisciplinary general practice clinicians (GPCs) with experience in implementing and being subject to this intervention over the last 10 years in out-of-hours general practice, found it useful, acceptable, and helpful to identify and minimise unwarranted variation in clinician practice. The lack of feedback, supervision and assurance standardisation for those working in other settings was emphasised.

Aims:

We aim to build on the positive findings and programme theory developed in our interview evaluation study to:
1) Adapt the intervention from the out-of-hours to in-hours general practice setting
2) Optimise the usefulness of the intervention to identify and minimise unwarranted variation in clinician practice
3) Optimise acceptability of the intervention and address factors that may undermine uptake and engagement
4) Explore the feasibility of implementing the intervention in in-hours general practice to inform a post-doctoral trial

Methodological Orientation:

This PhD will utilise the "Person-Based Approach"[1] (PBA) to intervention development and evaluation alongside the UK Medical Research Council guidance on developing and evaluating complex interventions.[2] A detailed, iterative, user-centred approach will ensure the intervention is useful, acceptable and able to fit within clinicians' daily practice. The PBA has been developed at Southampton University, by academics including Dr Morrison who will co-supervise this work, and has been shown to be a highly effective methodology to support intervention development.

References:

*1. Yardley L, **Morrison L**, Bradbury K, et al. The person-based approach to intervention development: application to digital health-related behaviour change interventions. J Med Internet Res 2015;17(1):e30-e30. doi: 10.2196/jmir.4055*
2. Craig P, Dieppe P, Macintyre S, et al. Developing and evaluating complex interventions. London: Medical Research Council; 2019 [Report].

PhD Fellowship Overview

Stage 1: Intervention planning (0-12 months)

As per the PBA, "guiding principles"[1] for intervention development will be informed by our previous interview study findings, systematic reviews of mixed-methods studies, and further primary qualitative research with stakeholders.

Stage 1A: *A systematic literature review* of peer-review interventions to identify and reduce unwarranted variation in clinician practice in primary-care will ensure a contemporary knowledge of: 1) What is known about the effectiveness of such interventions; 2) The range of methodologies used; 3) How theory has informed / been developed in their design and implementation; 4) How such interventions are experienced by target users; 5) What barriers/facilitators affect implementing/engaging with such interventions; and, 6) How the impact of interventions has been measured.

The programme theory developed in our previous interview evaluation suggested it could be optimised through development of the methodology: (1) To stratify "clinician risk" to target those most likely to benefit from peer-review; (2) To select consultations for peer-review most likely to contain unwarranted practice; and, (3) To undertake peer-review & feedback to optimise engagement and change practice. Our systematic review will assess these methodological aspects of existing studies and explore further literature as our programme theory is refined.

Stage 1B: *A qualitative interview study* with a purposive sample of 20 GPCs with representation from managers, peer-review team members from the existing intervention, and clinicians (GPs, nurses, pharmacists etc) who provide routine primary care consultations, will identify issues likely to encourage or deter in-hours GPCs from using the intervention, and aspects of the intervention that will need adaption from the out-of-hours to in-hours environment. PPI contributors will also join this "core stakeholder group" to consider how the patient voice may be incorporated.

Stage 2: Intervention development (9-18 months)

"Stage 1" will inform theoretical modelling and development of detailed intervention procedures and materials. We will iteratively develop these with stakeholders via focus groups (3 group cycles of 12 stakeholders planned). We will model the use of the intervention using case scenarios to resolve issues prior to implementation.

Stage 3: Intervention Implementation (18-30 months)*: **Please note Stage 4 will run in simultaneously***

This feasibility work will be delivered by a trained peer-review team of 3 GPs (the PhD fellow and 2 additional GPs). Each clinician will spend 5hrs a month screening cases, and 5hrs a month together as a consensus peer-review team. ***Stage 3A:*** 4 months of implementation/improvement cycles in 3 in-hours GP practices supported by focus groups with participants at 2-month intervals to iteratively enhance intervention usefulness, acceptability and engagement. ***Stage 3B:*** 6 months of implementation of the "final intervention" in 3 GP practices to assess performance and engagement of embedded use. The form of this feasibility work may be modified by findings of preceding stages.

Stage 4: Process evaluation (18-36 months) will run in tandem with "Stage 3" and use mixed-methods to capture information before, during and after the 6-month feasibility study to evidence progression to, and inform implementation of, a post-doctoral trial:

1. **Qualitative interviews** with clinicians, managers and peer-reviewers to understand intervention acceptability, usefulness, areas for improvement, and barriers and enablers to implementation and engagement.
2. **Quantitative assessment of outcomes** (e.g. frequency/severity/preventability of patient safety incidents, frequency/types of feedback to clinicians, variability in clinician case scores and risk, measures of safety culture)
3. **Intervention cost analysis** (e.g. analyse costs of peer-reviewer time, time of staff in engaging etc)

Training Plan:

The PhD will commence with a learning needs analysis to ensure the Fellow has the necessary skills to deliver this PhD to a high standard and support wider development towards a career in clinical academic leadership. The Fellow's educational needs will be well met by the research training programmes at Southampton and Bristol which offer courses in qualitative methods, systematic reviews, research governance, statistics and study design.

The PBA[1] was developed by academics at Southampton University and the Fellow will have expert training and supervision in this method from subject experts (including Dr Morrison). The fellow will also join the Digital Health Interventions Research Group at Southampton, to provide further research training opportunities and peer-support.

Patient & Public Involvement & Engagement

PPI representatives and general practice clinicians have been consulted throughout the development of this project and will be part of the intervention development process via the "core stakeholder group". Southampton and Bristol Universities have dedicated expert staff supporting high quality PPIE training and delivery.