

Host department:

Southampton

Title:

Reducing the use of antibiotics for suspected urinary tract infections in care home residents

Proposed supervisory team:

Professor Nick Francis (clinical and quantitative expertise)

Dr Ingrid Muller (Qualitative and PBA intervention development expertise)

Project description:**Background**

Nursing and residential care homes residents (residents) have a high burden of illness that results in substantial use of primary health care resources. An ageing population means that addressing the needs of this population is becoming increasingly important. are at increased risk of developing infections and using antibiotics, resulting in impaired quality of life (as a direct result of infections, but also from adverse effects from overuse of antibiotics), morbidity, mortality, hospital admissions, and selective pressure driving the development of antimicrobial resistance, one of the biggest threats to ongoing health.

Urinary tract infections (UTIs) are one of the most common infections in residents, with almost 60% of the antibiotics used in this population being for UTI, and individual residents frequently taking repeated courses of antibiotics. However, a substantial proportion of these prescriptions are likely to be unnecessary. Diagnosing UTI is challenging in frail elderly, due to atypical illness presentation, the lack of reliable diagnostics and the high prevalence of (asymptomatic) bacteriuria. Combined with the influence of contextual factors, such as beliefs and expectations of patients and caregivers, these factors increase the risk of antibiotic overuse. This applies especially to antibiotic courses that are prescribed for people with

Guidelines recommend use antibiotics for residents with classic UTI symptoms and not using antibiotics for those with non-specific features, such as confusion, agitation, malaise, falls, loss of balance, loss of energy, or loss of appetite (hereafter referred to as 'potential UTI'). However, guidance and decision support tools do not provide clear advice about how to manage these patients with potential UTI, and this may be why they have not resulted in substantial reductions in antibiotic prescribing. A behavioural intervention designed to help care home staff and general practice clinicians safely assess, investigate, and monitor residents with potential UTI, may help safely reduce the use of antibiotics in this population and improve outcomes.

The aims of the project are to: 1) systematically review the evidence on features of suspected UTI (including classic UTI symptoms and potential UTI) in residents that are associated with adverse outcomes; 2) describe the assessment, investigation, management and outcomes of potential UTI in residents through an observational study; 3) explore the views of care home staff, residents and primary care clinicians on approaches to safely assessing, investigating and monitoring patients with potential UTI; 4) develop an intervention to support care home staff and primary care clinicians in the management of potential UTI.

Methods

Stage 1: Systematic review of studies of prognosis following suspected UTI in residents or frail elderly

Stage 2: Observational study of potential UTI in care homes and qualitative interview study with residents, staff and primary care clinicians.

Stage 3: Intervention development using the person-based approach with care home staff, residents, and primary care clinicians.

Potential impact

This project will result in an evidence-based intervention to support the safe use of non-antibiotic approaches to the management of potential UTI in residents that is ready for evaluation in a randomised controlled trial. Such an intervention could significantly reduce antibiotic use, leading to a reduction in antibiotic resistance, as well as improving outcomes for residents with potential UTI.

Training plan:

Formal training:

The training plan will be informed by an analysis of the academic needs of the PhD candidate carried out in the first month. Training will be directed towards helping the candidate develop as an independent researcher, as well as towards the needs of the PhD project.

The formal taught postgraduate research training programme at the University of Southampton includes epidemiology, statistics, research governance and study design. In addition, transferable skills courses are offered including Good Clinical Practice, time management, leadership, grant writing, and presentation skills. The Fellow will also be able to access free on-line masterclasses on systematic reviews and meta-analysis, research governance, ethics, patient and public involvement and engagement, developed by leaders in the SPCR.

Informal training:

The Fellow will also be offered mentorship from a senior primary care academic working in an external institution, meeting twice a year. Mentors receive formal training, developed by the Society for Academic Primary Care, to ensure independence and appropriate support. The Fellow will also have access to informal mentoring from senior members of the collaboration at an annual training meeting, and to participate in doctoral exchange programmes.

PPIE:

We will work with PPI collaborators to ensure that this research is addressing the needs of patients and the public, and is feasible and acceptable to patients.