Introduction
- Surgical site infections (SSIs) are the third most common healthcare-associated infection (HAI) in England and Europe (2).
- In some surgery types, up to 7% of SSIs occur after discharge (3).
- To get a true estimate of SSI rates, surveillance must include an element of post-discharge surveillance (POS).
- POS should not only cover readmissions to hospital, but also SSIs treated in the community.
- Many methods of POS are used globally, but there is no agreed global standard.
- Similar POS methods can have different response rates even in similar settings (4).
- This review uses realist methodology to assess the context in which POS is being used, the outcomes attained, and the mechanisms by which the context impacts the outcome.
- Realist reviews are a novel way of evaluating complex interventions where there is a need to understand what works when and how.

Methods
- Three different surgery types were selected to represent diverse patient groups: Caesarean section (CS), orthopaedic surgery, and total hip replacement surgery.
- Searches were conducted on Medline, Embase, and Scopus up to December 2016.
- Papers were included if they used POS to attain SSI rates, compared 2 or more methods, or compared on POS.
- Papers were excluded if the study was for a primary purpose other than estimation of SSI rates e.g. risk factor identification.
- Only papers written in English were included.
- Candidate theories were shortlisted: COM-B System (5), Integrative Model of Behavioural Prediction (6), and Technology Acceptance Model (7).
- Data were extracted from the papers into Excel.
- Relevant comments on context, mechanism or outcome were grouped into themes and compared with domains and constructs in the candidate theories.

Results
- **Patients**
  - Language Barriers: Age and disability
  - Poor health literacy
  - Cognitive impairment e.g. dementia
  - Difficulty engaging with technology

- **Methods**
  - Analysis of the constructs showed that the data fitted well within the COM-B system: capability, opportunity, and motivation leading to behavior (Table 1).

- **Conclusion**
  - Staff training (mechanism) is vital for success, even if resources are limited (context).
  - Regular feedback on SSI rates motivates staff to continue surveillance (mechanism), particularly if SSI rates are lower than previous high context, avoiding unnecessary follow-up (outcome).
  - Obligation to report rates improved motivation (mechanism) and created a positive culture (outcome), however, the use of those data for accreditation, contracts awards, financial penalties can cause research (context).

- **Discussion & Conclusions**
  - In the context of low self-efficacy, providing patients with appropriate knowledge, and building a good relationship with them/mechanism increases response rates (outcome).
  - Patients were motivated by receiving personalized communication, attention, and advice (mechanism), therefore surveillance methods with only one-way communication may limit the motivation for patients to engage (outcome).
  - To get a true estimate of SSI rates, surveillance must include an element of post-discharge surveillance (PDS).
  - Trailability of new technology (mechanism) is vital for ensuring maximum take-up among patients (outcome), especially if patients have physical or cognitive disabilities (context).

Acknowledgements
- This research was partially funded by the National Institute for Health Research (NIHR) Health Protection Research Unit in Healthcare Infection and Antimicrobial Resistance at Imperial College London, in partnership with Public Health England (PHE) and the Joint Sepsis Patient Safety Translational Research Centre. The views expressed are those of the authors and not necessarily those of the National Health Service (NHS), NIHR, the Department of Health, or PHE.
- The authors also acknowledge the UK Clinical Research Collaboration Centre for Infections, Prevention and Management, Imperial College Healthcare NHS Trust, and the NIHR Imperial Biomedical Research Centre.

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