**INTRODUCTION**

- Infection surveillance has indicated a rise in rates of Escherichia coli (E. coli) bacteraemia, by 15.6% between 2010 and 2014.
- Mandatory surveillance of E. coli bacteraemia indicates previous urinary tract infections (UTIs) is a key risk factor.
- The Department of Health aims to halve Gram Negative Bloodstream Infections (GNBSIs) by 2020.

**AIMS**

1. To describe existing interventions aimed at reducing rates of E.coli bacteraemia or reducing symptomatic UTI that are published evaluations.
2. To assess the effectiveness of these interventions at reducing rates of E.coli bacteraemia and reducing symptomatic UTI, or other surrogate markers of UTI i.e. antibiotic use for UTI, total pyrexia, hospital admissions from a care home etc.

**METHODS**

**Population:** Older adults in care settings

**Intervention:** All interventions

**Comparator:** None specified

**Outcome:** Symptomatic UTI, E. coli bacteraemia and relevant surrogate markers

Based on the Population, Intervention, Comparator, Outcome framework, a search strategy was devised and 18 databases were searched.

**Inclusion Criteria:**

- All studies evaluating interventions to reduce or prevent symptomatic UTI or E. coli bacteraemia, including catheter associated UTI (CAUTI) in any care setting directly with either staff or patients.
- International studies conducted from 1990 and onwards where full texts were available were included.

**Exclusion criteria:**

- Studies were excluded if:
  - Interventions were aimed at reducing asymptomatic bacteriuria.
  - Patients’ ages were not provided.
  - They were conducted on specialist hospital units such as intensive care units or burn wards.

**RESULTS**

**CONCLUSIONS**

- There were very few interventions evaluated in care homes in the community.
- Most of the studies have a risk of bias and are lacking in methodological quality.
- The hydration toolkit in care homes was not significantly effective, but was of low quality. Further evaluations are needed of national hydration interventions.
- Seven low quality multi-faceted intervention studies which included education with audit, feedback or reminders were effective at reducing UTI or CAUTI. They also individually included patient involvement, implementation plans, catheter evaluations and standardisations, latex and non-latex catheters, annual competency assessments, guidelines/protocols, or checklists.
- Face to face teaching on general infection and catheter management gave non-significant results but complementary online training and simulations on catheter insertion and care were significant.
- Increasing nursing staff ratios or using specific continence nurses reduced infection rates.
- Hospital catheter removal protocols evaluated in an RCT had no effect, but some effect was shown in less robust before and after studies.
- There are interventions currently in use that have not been formally evaluated and are therefore not included in this review.
- It is possible that more studies with negative or insignificant effects were not published.

**IMPLICATIONS**

- There is no single or multi-faceted intervention that provides high quality evidence of being effective. Increasing nursing or continence staff or a multi-faceted intervention including education, audit and feedback or implementation plans or checklists should be considered.
- Further robust evaluations are needed.

**REFERENCES**