**Correspondence Letter**

**Prevention of antibiotic resistant *Escherichia coli*: The need to better consider vulnerable migrant groups**

We read with interest Michaela J Day and colleagues’1 study highlighting bacteraemia with resistant extended-spectrum β-lactamase-producing *Escherichia coli* (ESBL-*E. coli*) is often human-associated, and the importance of preventing human transmission rather than transmission from livestock or food. They demonstrate *E. coli* is now the most common bloodstream pathogen in England, typically from a urinary origin. This highlights the importance of rapid and effective identification and treatment of urinary tract infections (UTIs) to prevent ESBL-*E. coli* bacteraemia.

To tackle the challenge of *E. coli* bacteraemia and other drug-resistant infections, there must be focus on vulnerable groups at increased risk of antibiotic resistance. Migrants in Europe experience significant barriers to health care and may be at increased risk of drug-resistant bacteria due to origins in high-incidence countries, exposure to risk factors during and following migration such as poor living conditions or return visits to countries of origin.

We demonstrated a higher occurrence of antibiotic resistance for sulfamethoxazol-trimethoprim, ciprofloxacin, gentamicin, cefuroxime, and ampicillin in *E. coli* isolates in urine samples among refugees and family reunited migrants residing in Denmark, compared to local-born patients.2 In our recent systematic review and meta-analysis, antibiotic resistance carriage and infection was elevated among refugees and asylum seekers compared to other migrants, as well as in high-migrant community settings such as refugee camps or detention centres.3 The findings suggest antibiotic-resistant organisms are being acquired in Europe, with a lack of evidence of onward transmission to host populations.

Our research highlights the need for both routine testing to facilitate the rapid detection and treatment of antibiotic resistance, and improved prevention efforts in community settings. This aligns with Day and colleagues’1 emphasis on the importance of post-toilet hygiene, good patient care, and rapid effective treatment of uncomplicated UTIs, which is critical because infections with resistant bacteria like ESBL-*E. coli* can cause longer duration of illness and increased risk of mortality.

As Amee R Manges emphasises in her comment,4 further research involving both human and animal health is needed. We strongly support a one health approach, however consideration too must be given to at-risk groups. European initiatives for migrants and other vulnerable groups are needed as part of a wider strategy to prevent antibiotic resistant infections such as *E. coli* bacteraemia. However, it is essential that prevention efforts to improve identification and treatment in migrant communities are focused on facilitating access to care and securing equitable health outcomes.

Louise B Sloth MD, Sally Hargreaves FRCPE, Laura B Nellums PhD, Rikke T Nielsen MD, Prof Marie Norredam DMSc.

Affiliations

Section of Immigrant Medicine, Department of Infectious Diseases, University Hospital Hvidovre, Denmark (LBS, MN);Infection and Immunity, St. George’s, University of London, United Kingdom (SH); Department of Clinical Microbiology, University Hospital Hvidovre, Denmark (RTN); Department of Global Health, University of Nottingham, United Kingdom (LBN); Research Centre for Migration, Ethnicity and Health, University of Copenhagen, Denmark (MN, RTN).

Conflict of interest

SH is a freelance peer review editor for The Lancet Infectious Diseases. All other authors declare no competing interests.

Author contribution

LBS, MN, SH conceived the idea; LBS wrote the correspondence in collaboration with MN, SH, LBN, and RTN.

References

1 Day MJ, Hopkins KL, Wareham DW, et al. Extended-spectrum β-lactamaseproducing *Escherichia coli* in human-derived and foodchain-derived samples from England, Wales, and Scotland: an epidemiological surveillance and typing study. *Lancet Infect Dis* 2019; **12**: 1325-1335.

2 Sloth LB, Nielsen RT, Østergaard C, et al. [Antibiotic resistance patterns of Escherichia coli in migrants versus non-migrants: a study of 14,561 urine samples.](https://www.ncbi.nlm.nih.gov/pubmed/31651032) *J Travel Med* 2019; Published online Oct 24. <https://doi.org/10.1093/jtm/taz080>

https://doi.org/10.1093/jtm/taz080 [Epub ahead of print].

3 Nellums LB, Thompson H, Holmes A, et al. Antimicrobial resistance among migrants in Europe: a systematic review and meta-analysis. *Lancet Infect Dis* 2018; **18**: 796–811.

4 Manges AR. [Escherichia coli causing bloodstream and other extraintestinal infections: tracking the next pandemic.](https://www.ncbi.nlm.nih.gov/pubmed/31653525) *Lancet Infect Dis* 2019; **12**:1269-1270.