UK Health Security Agency

Descriptive epidemiological study of an outbreak of sexually transmitted, extensively-drug resistant *Shigella sonnei*, first detected in the United Kingdom, 2021-23

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Introduction

- *Shigella* spp. is an enteric bacterial pathogen transmitted via the faecal-oral route, causing dysentery
- Traditionally a food and waterborne infection, but now a leading cause of sexually transmitted gastroenteritis among men who have sex with men (MSM)
- We describe an ongoing outbreak of extensively-drug resistant (XDR) *Shigella sonnei*, first detected in the UK

Methods

- Routine laboratory surveillance (Gastro Data Warehouse) identified an exceedance of *S. Sonnei* Clade 5 CC152 in England, from September 2021, and subsequently Scotland, Wales & N Ireland
- Whole genome sequencing with SNP typing was used to identify genomic clusters & AMR determinants of England cases
- Questionnaires collected demographic, epidemiological and clinical data from initial England cases

Case definition

Individuals diagnosed with *Shigella sonnei* Clade 5 in England, with a specimen date after 01 September 2021, who were genomically confirmed as part of a 10 single nucleotide polymorphism (SNP) single linkage cluster (t10.377).

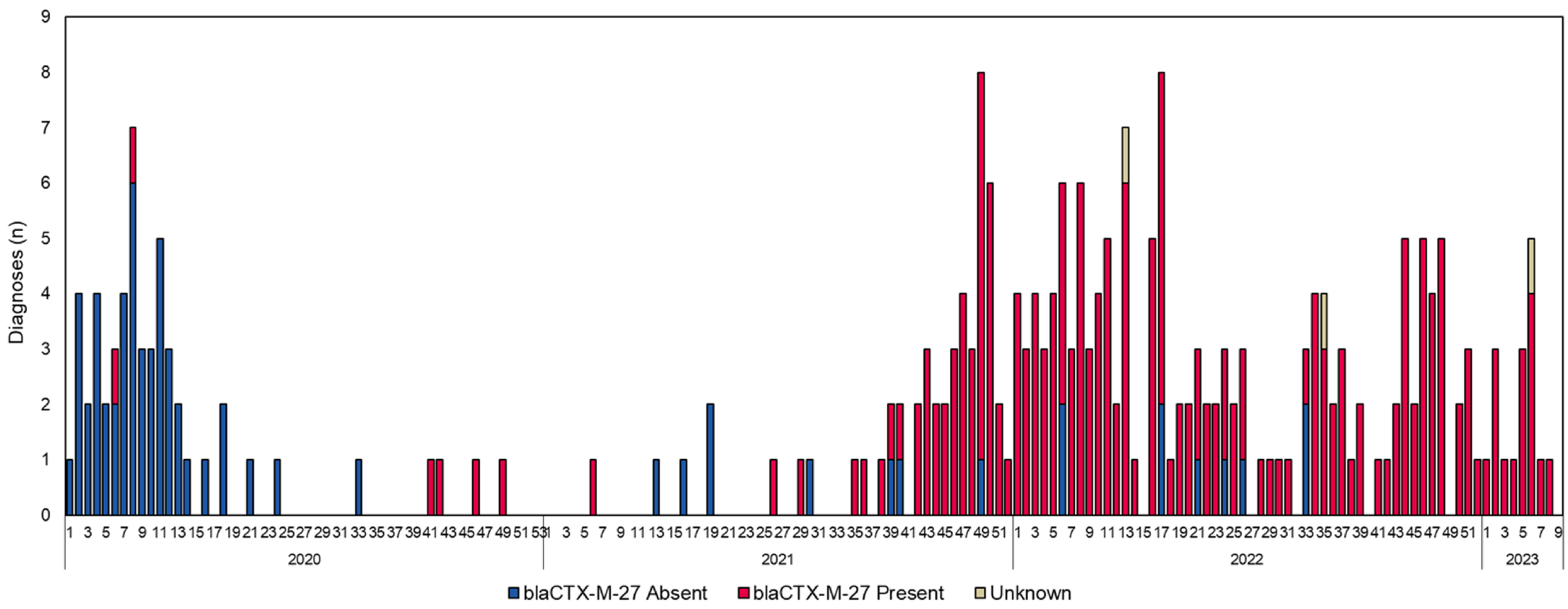

Figure 1: Cases of *S. sonnei* Clade 5 CC152 t10.377 by presence or absence of $bla_{\text{CTX-M-27}}$ and epidemiological week of specimen date, England (Epi week 01 2020 to Epi week 09 2023)

Results

- As of 04 March 2023, 201 outbreak cases were identified in England
- 95% of cases were in adult males (190/201), median age 35 years [IQR: 29-43]
- Isolates were predominately XDR (184/201; 92%) and 93% (186/201) of strains expressed $bla_{\text{CTX-M-27}}$, conferring genotypic resistance to ceftriaxone
- Of 33 cases with a completed questionnaire, 58% (19/33) received antibiotics and 24% (8/33) were hospitalised, 78% (21/27) were HIV-negative MSM taking HIV pre-exposure prophylaxis (PrEP)

Conclusion

- We highlight the rapid dissemination of XDR *S. sonnei* in sexual networks of MSM in England
- Further work is needed to understand the extent of asymptomatic carriage and transmission of *Shigella* spp., particularly in the context of outbreaks
- **Recommendations**
  - Strengthen *Shigella* testing where clinically indicated
  - Strengthen AMR surveillance
  - Antibiotic treatment recommended for prolonged diarrhoea (>7d), those immunocompromised or with severe colitis/sepsis
  - Integrate health promotion messaging among all MSM, including PrEP users, to reduce the burden of shigellosis
  - Promote involvement of community organisations within future outbreak responses

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References:
Charles H et al. Outbreak of sexually transmitted, extensively drug-resistant Shigella sonnei in the UK, 2021-22: a descriptive epidemiological study. Lancet Infect Dis. 2022 Oct

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