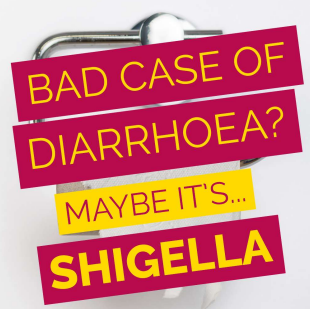


- The real-time and enhanced surveillance (RESTI) team at UKHSA is responsible for monitoring and investigating trends of sexually transmitted *Shigella* spp.
- We report the decline of a dominant *Shigella sonnei* cluster (t10.377; a 10-SNP threshold cluster), coinciding with the implementation of COVID-19 restrictions, and subsequent re-emergence of this cluster – with a concerning antimicrobial resistance profile.

1. Introduction

- Shigella* spp. are Gram-negative bacteria, transmitted through faecal-oral contact and cause bacillary dysentery.
- Of the four species of *Shigella*, *flexneri* and *sonnei* are more commonly associated with sexual transmission among men who have sex with men (MSM).
- When needed, ciprofloxacin is the primary treatment for shigellosis, with azithromycin, ceftriaxone, or pivmecillinam second line.
- This analysis explored the impact of the COVID-19 pandemic on a cluster of *S. sonnei* among MSM in England.



Shigella awareness Social Media campaign post; a joint campaign between UKHSA (formerly PHE) and HIV Prevention England (HPE), aiming to raise awareness of shigellosis among gay and bisexual men in 2021. Available through the [HPE website](#).

2. Methods

- Data was extracted from the Gastrointestinal Data Warehouse (GDW) (represents ~60% national data) and included adult male cases with no recent foreign travel history, herein referred to as presumptive MSM, of *S. sonnei* t10.377 reported between 01/01/2015 and 22/11/2021.
- Antimicrobial resistance (AMR) was determined by the presence of resistance determinants known to confer phenotypic resistance. We defined multi-drug resistant (MDR) as non-susceptibility to at least one agent in three or more antimicrobial categories and extensively-drug resistant (XDR) as non-susceptibility to at least one agent in all but two or fewer antimicrobial categories.

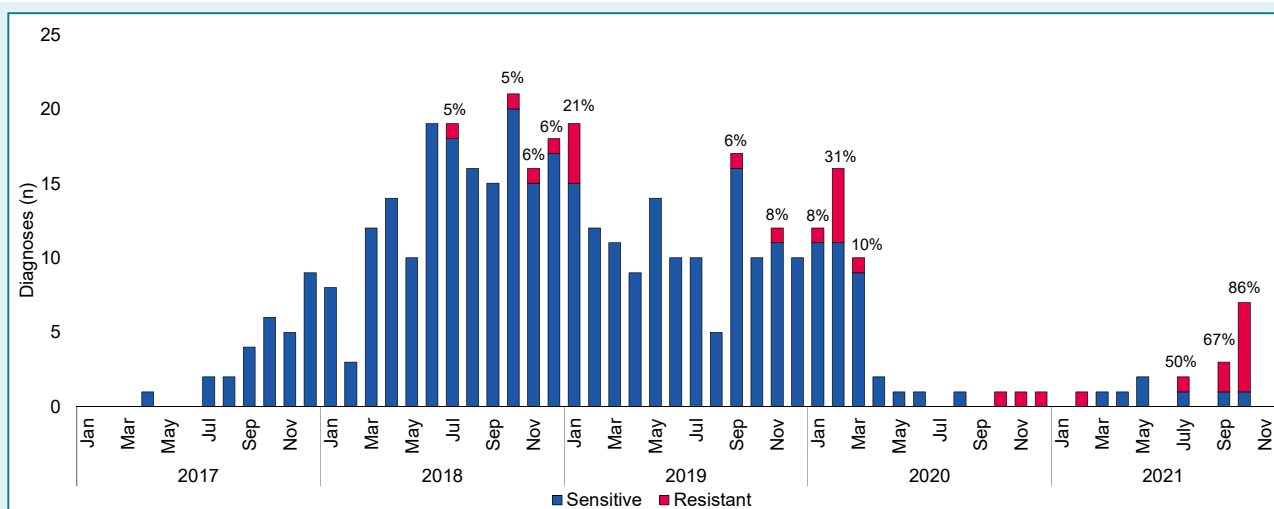


Figure: Number of diagnoses among presumptive MSM within the *S. sonnei* t10.377 cluster by ceftriaxone resistance, England, January 2017 to November 2021 (GDW). Note: n=6 diagnoses with missing AMR information were excluded from this figure.

3. Results

- Reported *S. sonnei* t10.377 diagnoses among presumptive MSM declined gradually throughout 2019; diagnoses were 65.5% lower (n=29 to n=10) in December 2019 relative to December 2018.
- Monthly diagnoses subsequently decreased sharply by 87.5% (n=16 to n=2) from February to April 2020. Reported diagnoses remained at low levels between April 2020 and August 2021 with an average of one, and not exceeding two, diagnoses per month.
- Diagnoses increased in September (n=4) and October (n=7) 2021.
- Where AMR information was available, all 10 isolates reported in September and October 2021 were classified as MDR (n=2; 20%) or XDR (n=8; 80%). In addition, ceftriaxone resistance increased substantially to 86% among isolates from September 2021 onwards (Figure). Resistance to ceftriaxone pre-pandemic had been relatively low, not exceeding 31% of isolates.

4. Conclusions

- This recent increase in highly drug resistant *S. sonnei* t10.377 is concerning due to potential implications for treatment options and likelihood of treatment failure.
- Due to the associated public health concerns, an outbreak investigation was initiated in December 2021.
- Further work is merited to understand the factors driving this re-emergence of *S. sonnei* t10.377, with a changing antimicrobial resistance profile.