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Event: Increase in sexually transmitted extensively-drug resistant *Shigella sonnei* in men in England

Notified by: HIV and STI / Gastrointestinal Pathogens, UK Health Security Agency

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UKHSA NIRP Level: National- Routine response

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Background and Interpretation:

Shigella sonnei is endemic in England among men who have sex with men (MSM). Between 1 September and 20 December 2021 there have been 27 confirmed cases, 25 men and two women, identified by Whole Genome Sequencing (WGS), which fall within the 10-SNP cluster CC152 1.1.1.1.377.% (referred to as t10.377). This large, internationally disseminated cluster had previously persisted mainly in the MSM community since September 2014, but cases had declined to a very low level (1/month) in England since March 2020. The recent sharp increase in cases have been noted in London (n=16), East of England (n=1), Yorkshire & Humber (n=1), North West (n=2), North East (n=1), East Midlands (n=1), South West (n=1) and South East (n=2). Two cases have travelled to Spain, one to Turkey and one to an unspecified location prior to onset of illness.

This extensively-drug resistant outbreak strain typically displays genotypic resistance markers against macrolides, fluoroquinolones, aminoglycosides, sulphonamide, trimethoprim and tetracycline. In addition, most of the strains from recent cases carry *bla*_{CTX-M-27} (which is associated with extended spectrum β -lactamase production). **First line agents such as quinolones, azithromycin and ceftriaxone will not be effective for treatment of severe shigellosis** (please see recommendations below for antibiotic treatment).

The primary public health risks are as follows: 1) rapid spread of this strain among MSM high-risk sexual networks and spill over into the community where cases are food handlers or carers (as seen in previous international outbreaks); 2) treatment failure in severe cases of shigellosis; 3) potential spread of resistance determinants to other gastrointestinal bacteria.

This increase in *S. sonnei* cases is on top of a sustained increase in *S. flexneri* among MSM which has been reported since mid-2020 (please see briefing note 2020/061 for more details).

Recommendations for UKHSA Regions and Health Protection Teams

HPTs are asked to use the [enhanced shigellosis questionnaire](#) for follow-up of confirmed cases of this cluster (*S. sonnei* CC152 1.1.1.1.377.%.%) when identified by the national team. Please email completed questionnaires to shigella@phe.gov.uk.

S. sonnei t10.377 cluster cases should also be linked to the HPZone context (congregation) available here: [Shigella sonnei t10.377 national XDR MSM cluster](#)

HPTs are asked to share this briefing note as appropriate to their NHS Clinical Commissioning Group and GPs for awareness of the clinical recommendations outlined below. The briefing note should also be shared with Directors of Public Health for information and to cascade to sexual health service providers, as well as Local Authority Environmental Health Teams.



HPTs should continue to provide appropriate advice on preventing transmission as described in the [Interim Public Health Operational Guidance for Shigellosis](#).

The NHS choices web page on dysentery has further information on symptom management and preventing transmission and re-infection (<https://www.nhs.uk/conditions/dysentery/>).

Specific guidance on preventing sexual transmission of *Shigella* in MSM is available here: <https://www.gov.uk/government/publications/shigella-leaflet-and-poster> and <https://www.sexwise.org.uk/stis/shigella>

Recommendations for primary care physicians, hospital clinicians and microbiologists:

Clinicians managing cases of community acquired diarrhoea should be aware that **sexual transmission** is a likely route of acquisition among adult male cases of shigellosis, specifically ask for sexual and travel history and request appropriate tests i.e. faecal bacterial PCR (if available) and culture and antibiotic susceptibility testing for *Shigella* spp. Cases associated with sexual transmission are likely to be at risk of other sexually transmitted infections, including HIV and other blood borne viruses, and should be referred to a sexual health clinic for further testing and management. For further information, please visit www.sexwise.org.uk/stis/shigella. Cases of acute shigellosis should be notified promptly to the Health Protection Team as usual.

Antibiotic treatment is recommended in cases with severe symptoms (fever, bloody diarrhoea and/or sepsis), those requiring hospital admission, those with prolonged diarrhoea (symptoms beyond 7 days) or who have underlying immunodeficiency. Oral treatment options for this strain are limited to antibiotics such as chloramphenicol, mecillinam and fosfomycin. Use of either mecillinam or fosfomycin would be off label or unlicensed, they should only be considered for treating uncomplicated cases such as prolonged diarrhoea. Due to a lack of evidence of their efficacy in severe infections, mecillinam and fosfomycin should not be used in the immunocompromised or cases with sepsis or severe colitis; consideration should be given to intravenous agents like ertapenem or meropenem.

Recommendations to UKHSA sites and NHS Microbiology laboratories

Clinical microbiology and public health laboratories must continue to test for antimicrobial susceptibility in all *S. sonnei* isolates. Laboratories should follow EUCAST protocols for Enterobacteriaceae for susceptibility testing of antibiotics including ESBL production.

All diagnostic laboratories are reminded to continue to refer isolates of *Shigella* spp. **including *S. sonnei*** to the Gastrointestinal Bacteria Reference Unit (GBRU) at Colindale for typing and confirmation as soon as possible. Any enquiries can be directed to GBRU: GBRU@phe.gov.uk

FW&E laboratories may be asked to examine food and environmental samples taken as part of the outbreak investigations.

Recommendations to local authorities

Local authorities / Environmental Health Teams may be asked to support the investigation and management of cases in their area. Local sexual health services should be aware of this cluster and advise clinical teams.

References

Interim Public Health Operational Guidelines for Shigellosis 2017

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/666157/PH_E_interim_public_health_operational_guidelines_for_shigellosis.pdf

Guidance for microbiologists assessing the susceptibility of *Shigella sonnei* isolates, in response to a multi-drug resistant (MDR) cluster of *S. sonnei* (CTX-M-27) in 2018

<https://www.gov.uk/government/publications/multi-drug-resistant-shigella-sonnei-cluster-2018-to-2019>