



Shigellosis among gay, bisexual and other men who have sex with men in England; changing epidemiology and emergence of multidrug resistant *Shigella sonnei*.

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Overview

- 1) Background
- 2) Data sources
- 3) The objectives of this talk are to describe:
 - Changing epidemiology among MSM
 - Recent outbreak of drug-resistant *Shigella sonnei*



Shigellosis

What is shigellosis?

- Primarily a gastrointestinal infection caused by called *Shigella* spp
- Symptoms= diarrhoea (sometimes bloody), abdominal cramping, nausea, vomiting

How is it spread?

- Faecal-oral transmission. Which includes:
 - ingestion of contaminated food or water
 - person-to-person contact during sexual activity

National surveillance of *Shigella* spp.

SGSS- Second Generation Surveillance System

- Automatic import of diagnostic data from primary hospital laboratories.
- National coverage; 100% of all public labs reporting communicable diseases submit to SGSS.

GDW- Gastro Data Warehouse

- PHE database containing reference laboratory confirmatory typing results.
- Whole genome sequencing (WGS) performed routinely since 2015
- Not all laboratories submit samples to the reference laboratory → underestimates the number of cases in the community

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No sexual identity data in either. Assumption: Excess cases from adult males without travel or falling within a predominantly adult male cluster are likely due to sexual transmission among MSM



Background

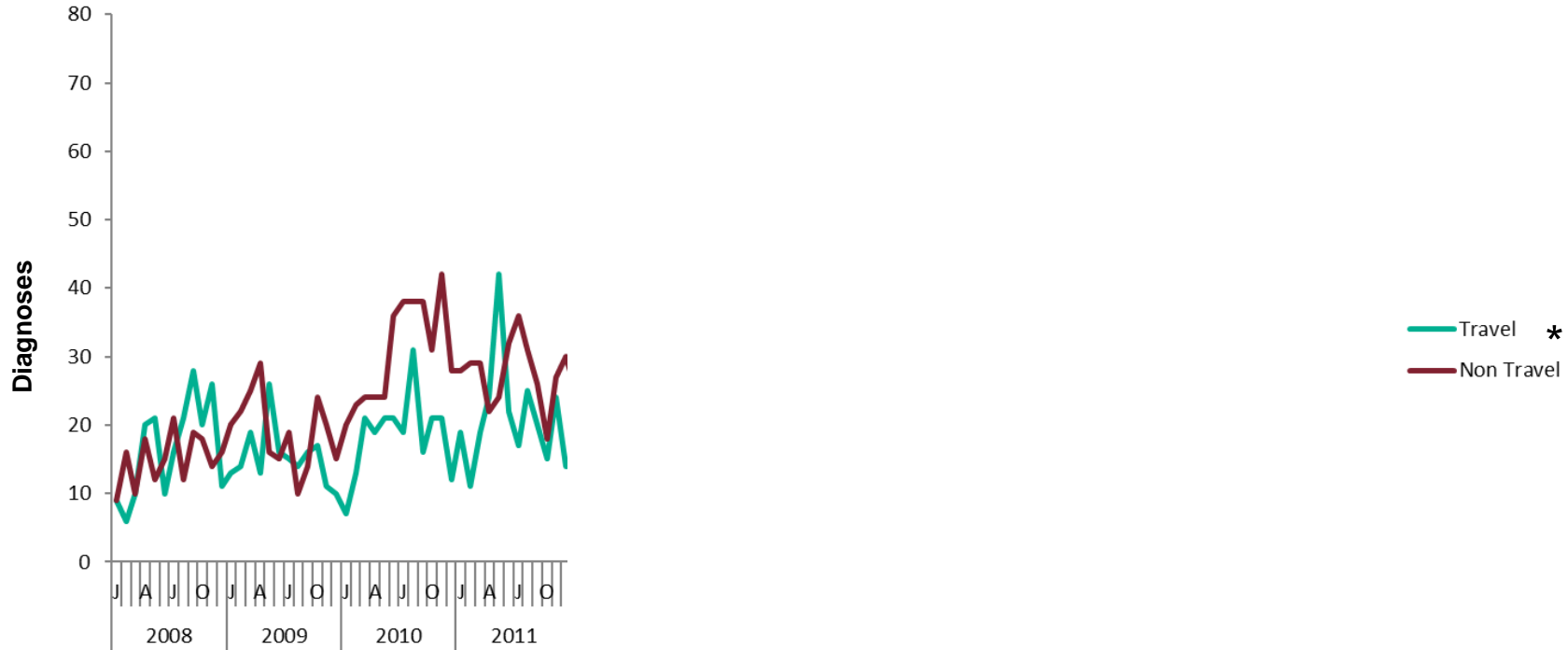
Data sources

Epidemiology

Outbreak

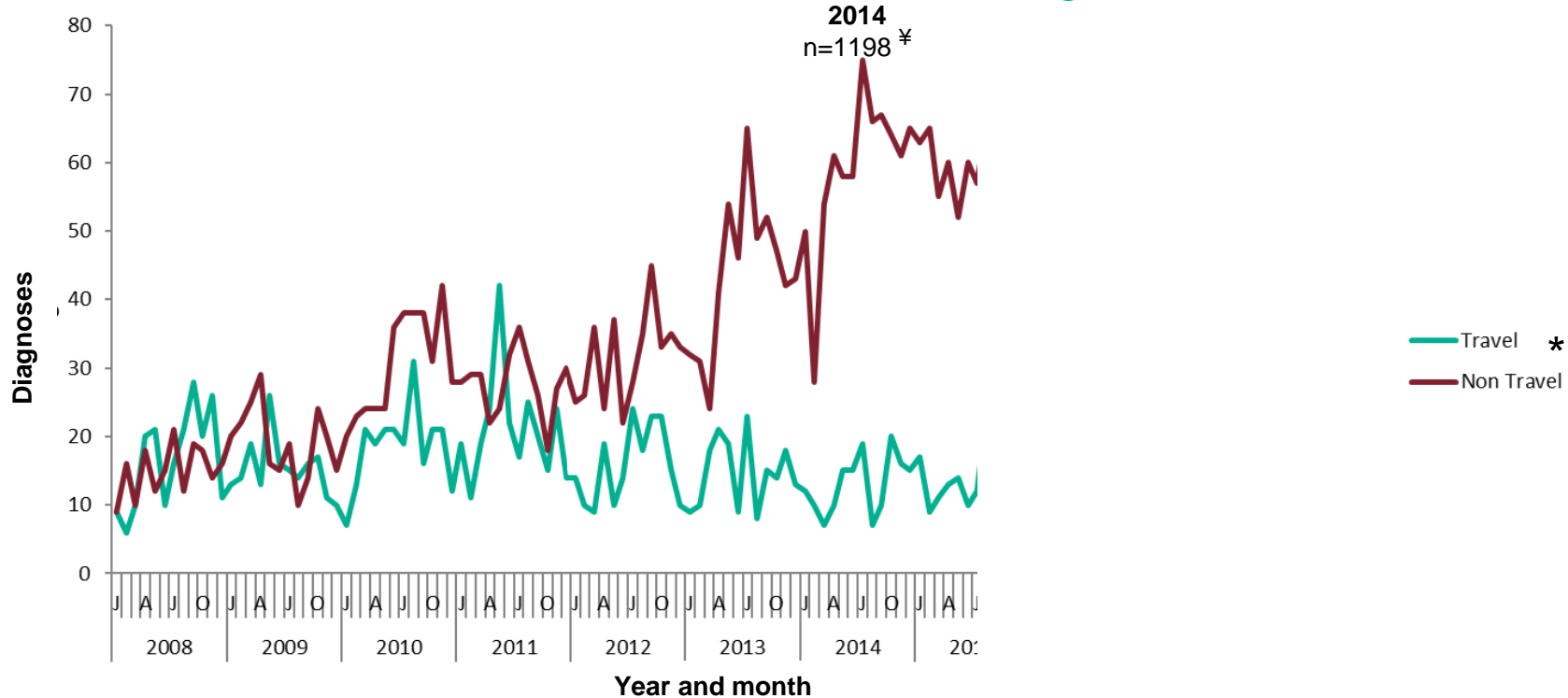
Changing epidemiology of *Shigella* among adult males in England

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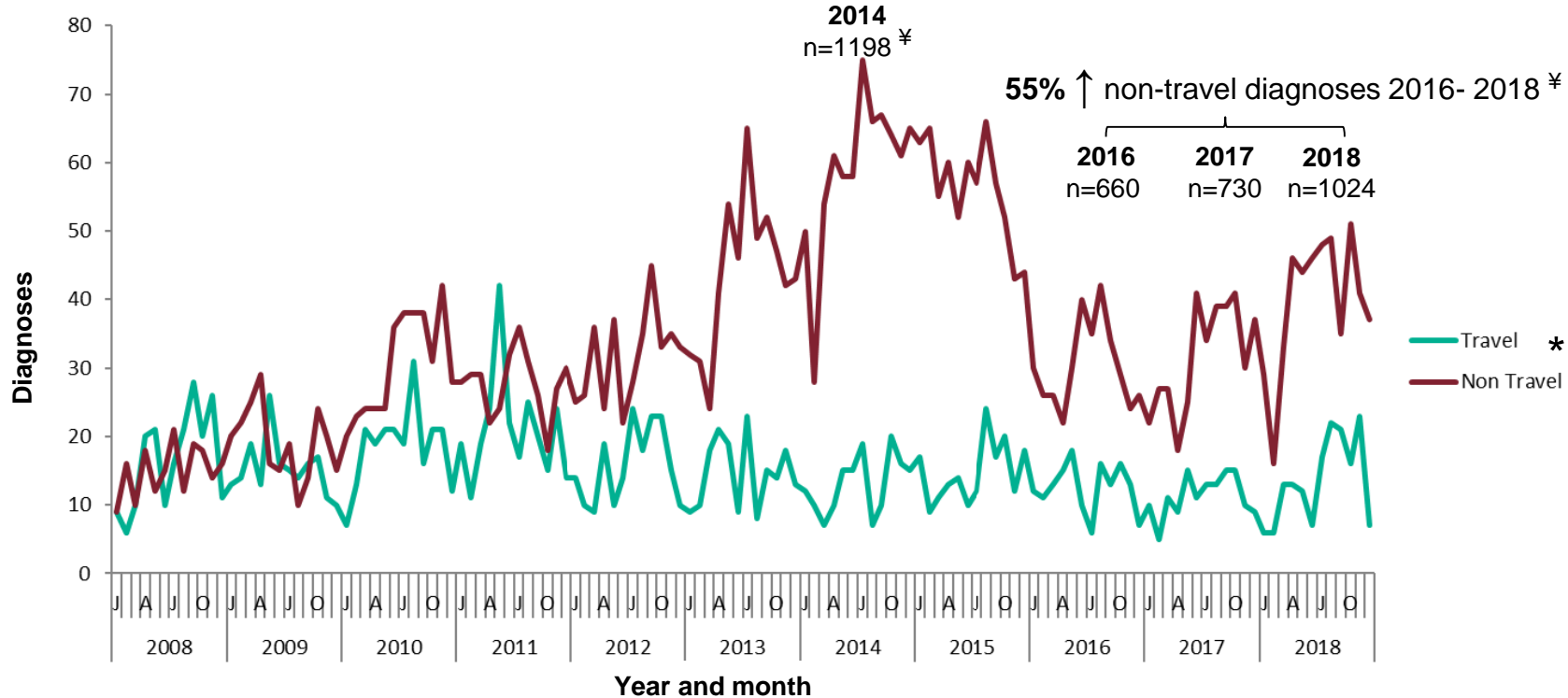


Data source: * GDW, † SGSS

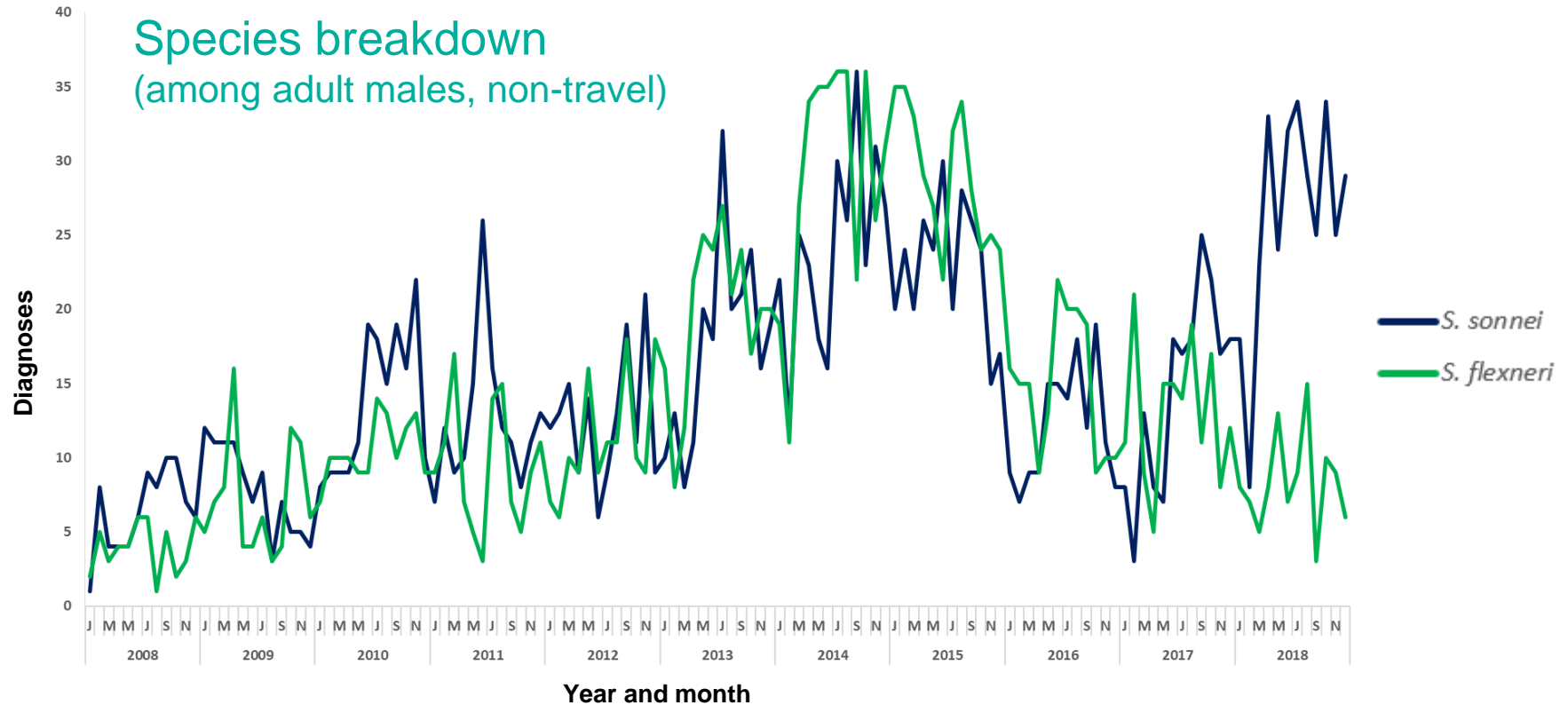
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Background

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Epidemiology

Outbreak

Recent MDR cluster of *S. sonnei* associated with MSM transmission

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- In 2018, new activity was detected in an adult-male cluster of *S. sonnei* that exhibited multiple AMR determinants
- Case isolates fall within the 10-SNP cluster CC 152 1.3.197.460.1360.% on WGS.
- Correspondence with the USA Centers for Disease Control & Prevention revealed genetically linked cases had been seen in the USA as part of a multi-state shigellosis outbreak.
- This cluster is still being actively monitored & cases followed up.

Recent MDR cluster of *S. sonnei* associated with MSM transmission

Why is this of relevance?

- This particular strain is of concern due to its **multi-drug resistant** genotype;
 - Carries resistance markers to six different antibiotic groups.
 - Includes a mutation associated with quinolone failure.
 - The majority of isolates were resistant to azithromycin.
- Severe symptoms; 4 cases were hospitalised and 8/10 experienced prolonged symptoms (>7 days)
- International dissemination; genetically-linked cases were reported in the USA, Netherlands and Republic of Ireland and cases with a similar phenotypic resistance profile in Finland.
 - Also dissemination to other demographic groups (care home, primary school)

severely limited
oral treatment
options

Figure 1: epidemic curve



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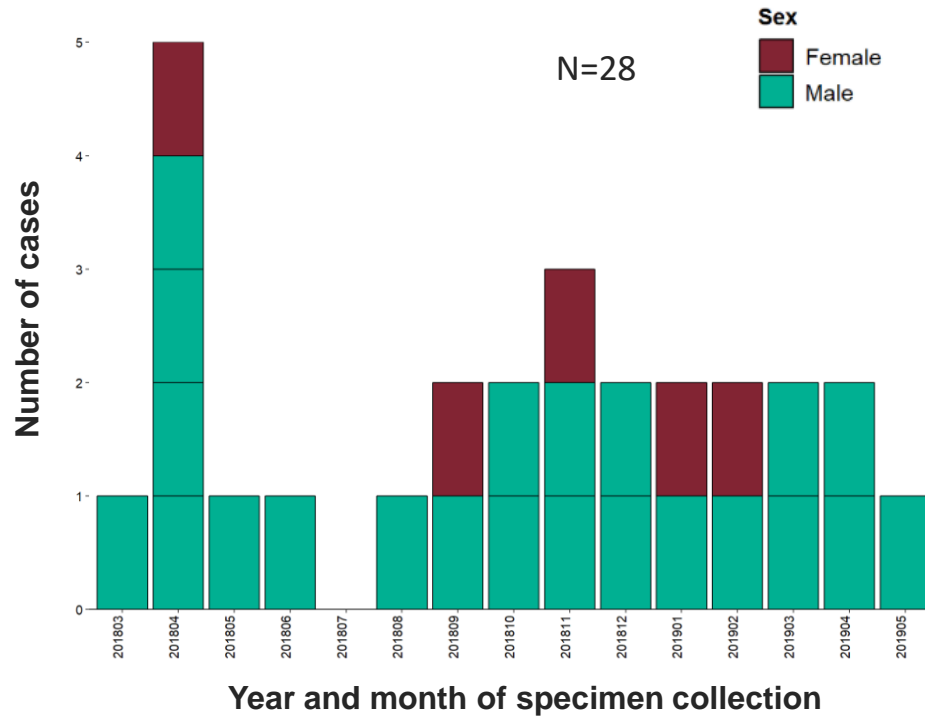
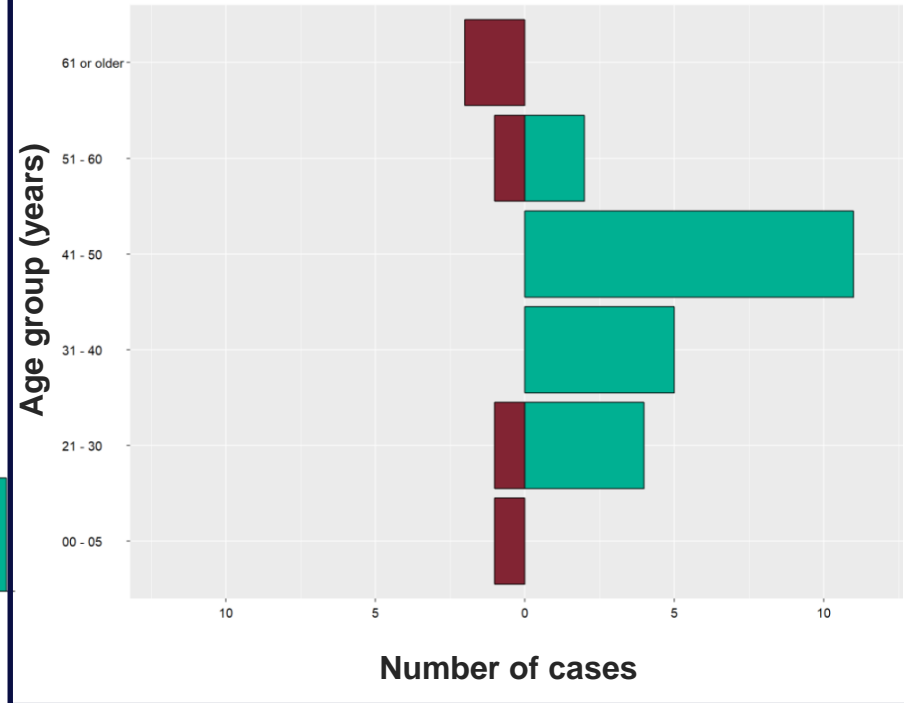


Figure 2: age sex pyramid



Take-home messages

- Diagnoses of *Shigella* spp. in presumptive MSM are increasing, largely due to *S. sonnei*.
- Clinicians should be aware of the potential for *S. sonnei* to cause severe infection in MSM (and other patient subgroups) and provide appropriate prevention advice.
 - Send samples for testing, and encourage the lab to refer onto the national reference laboratory if *Shigella* spp.
- There are multiple strains circulating in England, each with different resistance profiles; treatment should be guided by antibiotic susceptibility testing.

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



Protecting and improving the nation's health

Multi-drug resistant *Shigella sonnei* cluster (CTX-M-27) probably associated with MSM

Information for healthcare professionals

Thank you!
Megan.Bardsley@phe.gov.uk

Acknowledgements

Staff at the GBRU, Colindale
Local Health Protection Teams
Primary hospital laboratories

GOOD SESSION?
BAD CASE OF DIARRHOEA? MAYBE IT'S...

SHIGELLA

It's caught from tiny amounts of faeces (poo) getting into your mouth during and after sex

Shigella causes severe diarrhoea (sometimes bloody), stomach cramps and fever, and is often mistaken for food poisoning.

GAY & BISEXUAL MEN ARE AT RISK

Get medical advice if you think you have it, mentioning Shigella, for treatment

FOR MORE INFORMATION:
visit www.nhs.uk/shigella

Know how to avoid getting Shigella:

- you can get shigella by rimming or giving oral sex after anal sex
- change condoms between anal and oral sex
- wash your hands after sex – buttocks and penis too if you can

Public Health England

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LGBT foundation

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