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What is the overlap between HIV and shigellosis epidemics in England?

K Mohan, M Hibbert, G Rooney, M Canvin, T Childs, C Jenkins, I Simms, P Kirwan, V Delpech, Z Yin, G Hughes and N Field

BHIVA Annual Conference
Thursday 21st April 2016
Background

- Shigella is a Gram-negative bacteria causing severe bacillary dysentery in humans; there are 4 species:
  - *S. sonnei*, *S. flexneri*, *S. dysenteriae*, *S. boydii*
- Historically, a disease of countries with low income / poor hygiene,
- Highly infectious; causing fever, bloody diarrhoea and mucous, abdominal cramp
- Complications: dehydration, bacteraemia (rare in immunocompetent), Reiter’s syndrome, HUS.
- Cases/outbreaks of Shigella in MSM documented since 1970s
New profile of Shigella patients?

What is the overlap between HIV and shigellosis epidemics in England?
New profile of Shigella patients?

- MSM
- HIV positive
- Oral-anal contact, fisting
- High numbers of partners
- Low awareness of enteric infections
- Dense sexual networks
- Use of chemsex
- Attend sex parties
- Meet partners through social media apps
- Severe illness in some cases

(Gilbart et al. STI. 2015 and Cresswell et al. STD. 2015)
A new national surveillance system

Faecal samples to local labs

Local labs recommended to send all presumptive S. flex and other Shigella spp. to GBRU

GBRU confirmation and typing

- Type confirmed, and linked to age, gender, travel association, and location/lab

BUT

- No sexual behaviour or orientation

What is the overlap between HIV and shigellosis epidemics in England?
Travel versus non-travel associated Shigella: Diagnoses of shigella in England by year: travel associated (all ages) and non-travel associated (aged 16-60 years)

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Non-travel associated Shigella, aged 16-60y:
Diagnoses of S. flexneri 2a and 3a in England by year

(Female)

(Simms et al. Eurosurveillance. 2015)

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What is the overlap between HIV and shigellosis epidemics in England?

(Simms et al. Eurosurveillance. 2015)
Objective

To use national surveillance data to determine the role of HIV in the Shigella epidemic.
**Methods**

**National Shigella dataset**
- All shigella diagnoses
- 2003-2015
- Date of diagnosis
- Age, gender, travel association
- 10,027 cases

**National HIV dataset**
- All HIV diagnoses
- 1979-2014
- Date of diagnosis
- Gender, sexuality, clinical data
- 139,950 cases

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What proportion HIV+?
How many are MSM?
When do these individuals get Shigella?

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ANONYMOUSLY LINKED
Percentage of Shigella cases known to be HIV+:
All diagnoses of Shigella, (n= 10,027)

What is the overlap between HIV and shigellosis epidemics in England?
Percentage of Shigella cases known to be HIV+:
All diagnoses of Shigella, by travel history (n= 10,027)

What is the overlap between HIV and shigellosis epidemics in England?

- All Shigella: 12%
- No travel: 20%
- Travel assoc.: 3%
Percentage of Shigella cases known to be HIV+:
All diagnoses of Shigella, by travel association and gender (n=10,027)

What is the overlap between HIV and shigellosis epidemics in England?
Percentage of Shigella cases known to be HIV+:
All diagnoses of Shigella, by travel association and gender (n=10,027)

What is the overlap between HIV and shigellosis epidemics in England?
Percentage of Shigella cases known to be HIV+:
All diagnoses of Shigella, by travel association and gender (n=10,027)

HIV+ = 1018
- 94% MSM, 3% MSW,
- 49% on ART, 48% not on ART
- 69% Viral Load <400 (n=283)

What is the overlap between HIV and shigellosis epidemics in England?
What is the overlap between HIV and shigellosis epidemics in England?
Rate of Shigella in those HIV diagnosed:
Male and female diagnoses of Shigella not associated with travel

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<tr>
<td>Male</td>
<td>79.8</td>
<td>55.5</td>
<td>77</td>
<td>94.7</td>
<td>94.9</td>
<td>148.8</td>
<td>191.8</td>
<td>189.8</td>
<td>232.6</td>
<td>316.6</td>
<td>364.4</td>
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<tr>
<td>Female</td>
<td>0</td>
<td>18.9</td>
<td>33.8</td>
<td>15.6</td>
<td>19.1</td>
<td>4.5</td>
<td>12.8</td>
<td>4.1</td>
<td>3.9</td>
<td>15.2</td>
<td>7.1</td>
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What is the overlap between HIV and shigellosis epidemics in England?
Time between Shigella and HIV diagnoses:
Shigella diagnoses in men known to be HIV+

What is the overlap between HIV and shigellosis epidemics in England?
Limitations

- Incomplete case ascertainment of Shigella
- Self-reported sexual behaviours
- Data linking may lead to false positive or false negative matching
- Lack of detailed clinical information about Shigella episodes
- Further research needed on burden of Shigella on both individuals and health services
Conclusions

• Approximately 30% of men diagnosed with non-travel associated Shigella were diagnosed with HIV and these were primarily MSM

• Shigella should be considered in HIV positive men presenting with lower GI symptoms.

• In most cases, HIV diagnosis preceded Shigella

• These data are consistent with our understanding about MSM engaging in high risk sexual behaviour, and parallels increases in GC, LGV, and syphilis
Acknowledgements

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