

# Risk factors for asymptomatic enteric pathogen detection among men who have sex with men

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## 1. Reemergence of *Shigella* as a Sexually Transmitted Antimicrobial Resistant Infection



Can asymptomatic carriage of enteric pathogens, including *Shigella*, act as a potential reservoir for gastrointestinal outbreaks in men who have sex with men (MSM)?



Are there any association between behavioural risk factors and presence of asymptomatic enteric pathogens?

## 2. Methods

A cross-sectional study of asymptomatic MSM in Melbourne, Australia, was undertaken from 1 November 2018 to 28 February 2019. Anal swabs collected from 519 MSM were tested for the detection of 15 enteric pathogens using the Faecal Pathogen M 16-Well assay.



Data on age, HIV status, use of PrEP, and behavioural risk factors such as group sex, use of party drugs and rimming were collected through questionnaire.

Recruitment focused on three groups:



HIV-negative men on PrEP

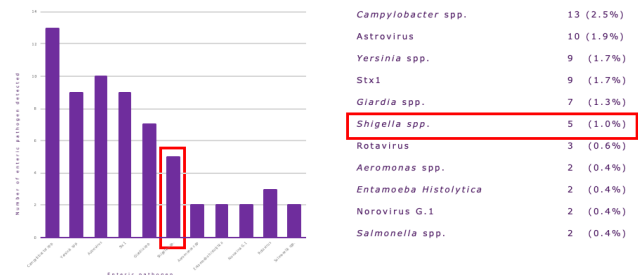


HIV-negative men not on PrEP



HIV-positive men

## 3. Results



Faecal samples from 57/519 (11.0%) asymptomatic MSM tested positive for any enteric pathogen. Of concern, *Shigella* spp. was detected in 5/519 (1.0%) of men. 8 men with two co-occurring enteric pathogens were also detected.

### ASSOCIATIONS BETWEEN MSM AND ENTERIC PATHOGEN DETECTED

CHARACTERISTICS	DETECTION OF AN ENTERIC PATHOGEN, n/N (%)	P VALUE
<b>AGE (YEARS)</b>		
18-24	9/84 (10.7%)	
25-34	29/240 (12.1%)	
at least 35	19/195 (9.7%)	0.737
<b>HIV and PrEP Status</b>		
HIV negative, no PrEP	20/214 (9.3%)	
HIV negative, on PrEP	29/227 (12.8%)	0.254
HIV positive	8/78 (10.3%)	0.815
<b>ORAL-ANAL SEX IN THE LAST 12 MONTHS</b>		
No	6/142 (4.2%)	
Yes	51/363 (14.0%)	0.003
Can't remember	0/14 (0%)	
<b>GROUP SEX IN THE LAST MONTH</b>		
No	35/396 (8.8%)	
Yes	22/123 (17.9%)	0.006
<b>USED PARTY DRUGS IN THE LAST MONTH</b>		
No	47/451 (10.4%)	
Yes	10/68 (14.7%)	0.295
<b>SEX OVERSEAS IN THE LAST 12 MONTHS</b>		
No	15/165 (9.1%)	
Yes	16/105 (15.2%)	0.126
Unknown/ Declined/ Missing	26/249 (10.4%)	0.653

There was no significant difference in the prevalence of enteric pathogen carriage between different age groups, HIV and PrEP statuses.

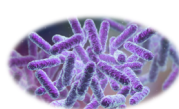
However, when behavioural factors were assessed, the prevalence of enteric pathogen was independently associated with men who reported engaging in oral-anal sex in the last 12 months and men who reported having group sex in the last month.

## 4. Discussion and Conclusion

- From our study, it is likely that...



High rates of oro-anal casual sex



Asymptomatic carriage of highly infectious pathogen



Selection pressure of antibiotics (e.g., azithromycin)



**DRIVERS OF SHIGELLOSIS**

- To our understanding, we are the first to link asymptomatic enteric pathogen carriage in MSM with specific behavioural risk factors.