

## Gonorrhoea during COVID-19 in London, UK

It is unclear how the COVID-19 pandemic has affected sexual behaviour and the transmission of STIs. Reports suggest a decline in STIs during the first COVID-19 lockdown attributed variously to fewer sexual encounters<sup>1</sup> and decreased testing or case reporting.<sup>2</sup> However, in some settings, diagnoses of symptomatic STIs appeared to remain unchanged.<sup>3</sup>

*Neisseria gonorrhoeae* (NG) infection of the male urethra causes symptoms in >90% of individuals but is mostly asymptomatic at other sites. As symptoms usually present within 5 days of exposure and unpleasant enough to seek assistance, urethral NG is a potential marker of recent sexual behaviour.<sup>4</sup> First-line NG treatment is a single-dose ceftriaxone injection administered at medical services, whereas other STIs are standardly treated using oral antibiotics which can be sent by post or purchased online.

On 23 March 2020, following instructions to avoid unnecessary travel and non-essential contact with others, the UK government introduced measures to reduce the transmission of SARS-CoV-2 including home isolation and social distancing, although individuals could travel for medical care. From 13 May 2020, England's lockdown gradually eased.

In 2018, 56 Dean Street (56DS), a sexual health clinic part of Chelsea and Westminster Hospital, diagnosed 14% (7689) of England's 56 234 gonorrhoea infections.<sup>5</sup> During lockdown, 56DS limited face-to-face contact using telephone triage while preserving walk-in consultations for STI emergencies. Those seeking asymptomatic STI testing were directed online to obtain a postal testing kit. Where possible, STI treatments were posted. However, in-clinic ceftriaxone treatment was maintained.

In order to facilitate staff redeployment, Chelsea and Westminster, like other hospitals nationally, temporarily closed two of its sexual health services<sup>6</sup>; 56DS remained open with normal opening hours.

We present the decrease in NG at 56DS during lockdown. We hypothesise that this fall was due to a mixture of fewer consultations and a change in the case mix of presentations with fewer asymptomatic (screening) cases. Using routine clinical data, we obtained the weekly number of individuals attending 56DS who tested for NG and the number diagnosed with NG

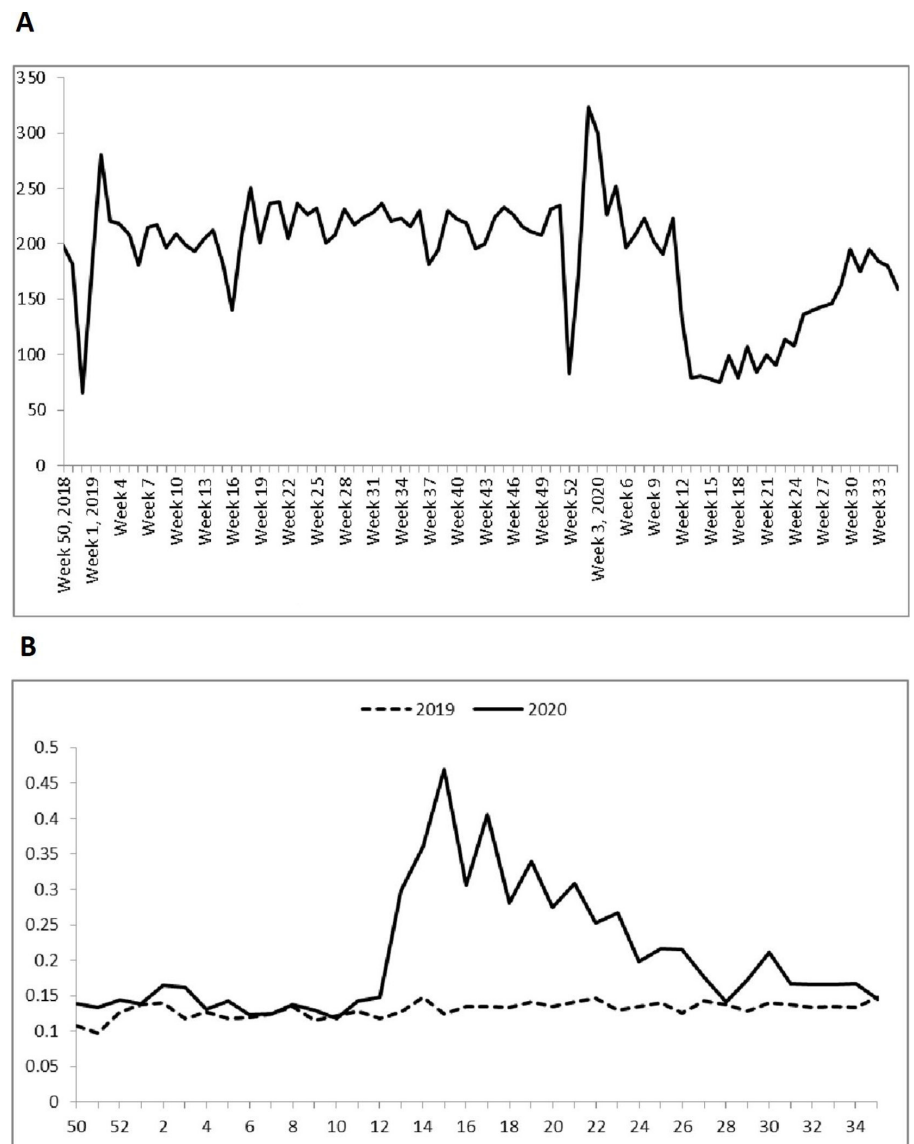
and performed a case note review of NG cases.

In 2019, weekly NG cases were stable around 220 apart from decreases with sharp rebounds over Easter and Christmas reflecting reduced capacity due to holiday closures. During lockdown, weekly cases dropped from 223 (week 11) to 75 (week 16) (figure 1A). The proportion tested who had NG remained stable at 0.13 throughout 2019 and early 2020, including holiday periods (figure 1B). During lockdown, this proportion rose to 0.49 (week 15) before returning to baseline.

We performed a case note review of individuals with NG in order to see if we could observe any changes in their characteristics and sexual behaviour over

lockdown. We chose week 18 of 2019 (n=250) and 2020 (n=79) as it included COVID-19 lockdown and excluded Easter or May bank holiday in either year. Baseline characteristics such as age, gender and HIV status were similar in both groups (online supplemental appendix). In lockdown compared with 2019, there were fewer NG diagnosed as contacts, 6 vs 44, fewer asymptomatic NG, 14 vs 144, and similar weekly number of symptomatic NG, 42 vs 46, and NG treatments, 17 vs 16.

For symptomatic NG, there was no change in self-reported number of sexual partners in the last 3 months during lockdown compared with 2019: 3 (IQR 2–6) vs 4 (IQR 3–7) (p=0.44) and median time to last sexual intercourse: 7



**Figure 1** (A) Weekly number of individuals diagnosed with *Neisseria gonorrhoeae* at 56 Dean Street, London, UK from week 50 (2018) to week 35 (2020). (B) Proportion of individuals that underwent testing and were positive for *Neisseria gonorrhoeae* at 56 Dean Street, London, UK from week 50 of the preceding year to week 35 for 2019 (broken line) and 2020 (solid line).

days (IQR 3–14) vs 7 days (IQR 6–11) ( $p=0.55$ ).

The drop in NG over lockdown occurred with an increase in the proportion of clinic attendees testing positive for NG. This differs from the drop in NG over Christmas and Easter when the positive proportion remained stable. Over lockdown, we observed a small drop in the absolute number of symptomatic NG compared with 2019. This suggests sexual activity has changed little. Alternatively, sexual activity may have reduced and numbers of symptomatic individuals attending 56DS increased because many sexual health services closed over lockdown.<sup>5</sup>

In Rome, there was a drop in STIs during lockdown including early (symptomatic) syphilis although it is unclear to what extent this reflects a decrease in STI testing and/or change in sexual behaviour.<sup>1</sup> In Milan, asymptomatic STIs fell during lockdown although symptomatic STIs changed very little suggesting no change in sexual behaviour in men who have sex with men (MSM): consistent with our findings.<sup>3</sup>

Our data suggest that we were successful in triaging out asymptomatic infections during lockdown and, with fewer consultations, this led to a fall in NG diagnoses. It is unclear if the individuals triaged out did screen elsewhere and for this, comprehensive national data are required including postal testing services.

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Characteristics of individuals tested positive for *Neisseria gonorrhoeae* (NG) at 56 Dean Street in week 18 of 2019 and 2020

	Week 18, 2019	Week 18, 2020	P- value
n	250	79	-
Gender, male (n, %)	243 (97%)	77 (97%)	0.90
Age (median, IQR) y	32 (27 – 39)	30 (26-39)	0.19
Consultation type (n, %)			<0.00001
Asymptomatic screen	144 (58%)	14 (18%)	
Symptomatic screen	46 (18%)	42 (53%)	
Contact of an STI	44 (18%)	6 (8%)	
Treatment	16 (6%)	17 (22%)	
Sites positive for NG*			0.21
One	153 (61%)	40 (51%)	
Two	81 (32%)	34 (43%)	
Three	16 (6%)	5 (6%)	
HIV status (n,%)			0.64
HIV-negative	194 (78%)	59 (75%)	
HIV-positive	50 (20%)	19 (24%)	
Unknown	6 (2%)	1 (1%)	

IQR, interquartile range; STI, Sexually transmitted infection

\*Individuals may test positive at more than one site e.g. urethral, throat and rectum