



Infection report

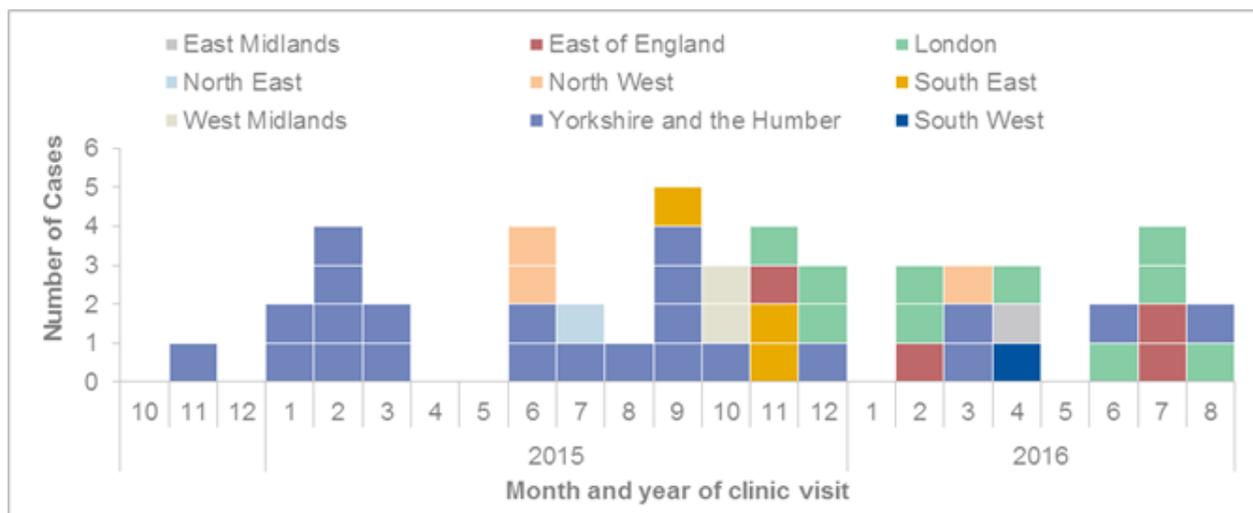
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Outbreak of high level azithromycin resistant gonorrhoea in England: an update

The outbreak of HL-AziR gonorrhoea in England, described in [HPR in April](#), persists. There have been 17 cases of HL-AziR gonorrhoea reported to date in 2016 compared to 15 cases for the same time period in 2015. Between November 2014 and August 2016 there have been a total of 48 confirmed and two probable cases (figure 1).

The initial outbreak cases reported in Leeds were all heterosexual with the majority under 20 years of age. Between November 2015 and February 2016, cases were predominantly men who have sex with men (MSM), from a slightly older age range (18-31), with the majority resident in London or the South East. Since March 2016, cases have been mixed in terms of sexual orientation and geographically dispersed (figure 1).

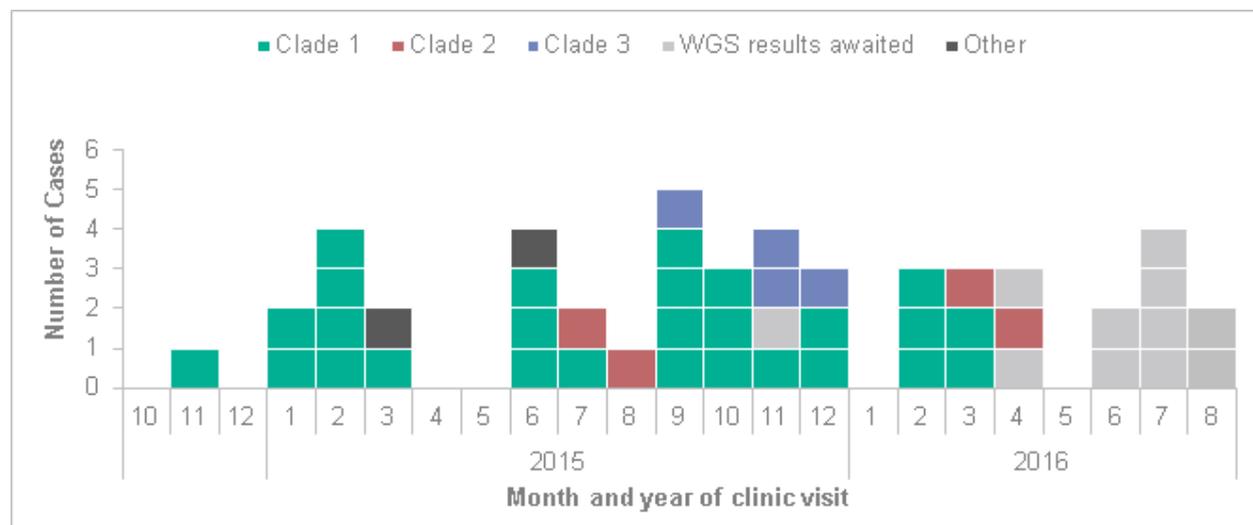
Figure 1. Confirmed cases of HL-AziR gonorrhoea by month and area (PHE Centre) of residence



The potential for rapid spread of HL-AziR *N. gonorrhoeae* among high risk sexual networks including MSM is of particular concern. Whole Genome Sequencing (WGS) analysis suggests transmission between heterosexual and MSM sexual networks has occurred at least twice.

The majority of cases linked to the Leeds outbreak (clade 1) share a recent common ancestor, but there are two other linked clades that share a more distant common ancestor (i.e. outside the timeframe of the outbreak investigation) with the clade 1 samples. Two of the three clades include heterosexuals and MSM. Further results from WGS analysis are awaited on recent cases.

Figure 2. Cases of HL-AziR gonorrhoea by whole genome sequence clade



Few antimicrobials remain effective in the treatment of gonorrhoea. Current recommended therapy involves intramuscular ceftriaxone 500mg in combination with azithromycin 1g orally [1]. Gonorrhoea can develop resistance rapidly, therefore dual therapy is recommended because simultaneous development of resistance to both drug classes is unlikely, and first-line treatment will remain effective [2,3]. If azithromycin becomes ineffective against gonorrhoea, there is no “second lock” to prevent or delay the emergence of ceftriaxone resistance, and gonorrhoea may become untreatable. The first documented case in the world of gonorrhoea treatment failure to both ceftriaxone and azithromycin was reported in the UK in July this year [4].

PHE has convened a Level 2 Incident Control Team to monitor and respond to the HL-AziR gonorrhoea outbreak. PHE has alerted clinicians in order to raise awareness of HL-AziR gonorrhoea via the British Association for Sexual Health and HIV network [5]. A National Resistance Alert was issued to all microbiologists in October 2015 to ensure that all gonococcal isolates are tested for azithromycin and ceftriaxone susceptibility, and that all resistant isolates (MIC >0.5 mg/L for azithromycin, and >0.125 mg/L for ceftriaxone) are referred to PHE Colindale for confirmation and follow-up.

To help reduce dissemination of azithromycin resistant gonorrhoea, microbiology laboratories should:

- screen all isolates of *N. gonorrhoeae* for azithromycin resistance
- refer all isolates categorised as azithromycin resistant (MIC >0.5 mg/L) to PHE Colindale for confirmation (PHE does not charge for these tests)
- promptly notify clinicians of any isolates with high-level resistance (MIC ≥256 mg/L)

In addition, clinicians should:

- ensure all patients with azithromycin resistant gonorrhoea, and especially those with high-level resistance (MIC ≥256 mg/L), are followed up and receive a test-of-cure, and that their partners are contacted and tested
- be especially vigilant to potential treatment failure in their patients and report any cases where this is suspected through the treatment failure reporting form available on the [HIV & STI web portal](#) or the [PHE gonorrhoea treatment failure webpage](#).

References

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2. Fifer H, Hughes G, Radcliffe K (2015). Gonorrhoea treatment position statement. *Sex Transm Infect* (Aug) **91**(5): 307.
3. PHE (2015). Surveillance of Antimicrobial Resistance in *Neisseria gonorrhoeae*. Key findings from the Gonococcal Resistance to Antimicrobial Surveillance Programme (GRASP) and related surveillance data: 2014.
4. Fifer H, Natarajan U, Jones L, Alexander S, Hughes G, Golparian D, Unemo M (2016). Failure of Dual Antimicrobial Therapy in Treatment of Gonorrhea. *N Engl J Med* (23 June); **374**(25): 2504-6.
5. BASHH (April 2016). [BASHH calls for coordinated response to restrain further spread of azithromycin resistant gonorrhoea](#).