Developing a national sentinel surveillance system for antimicrobial resistant *Neisseria gonorrhoeae* in Ireland

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Background

3 national surveillance systems for gonorrhoea antimicrobial resistance (GC AMR) surveillance in Ireland:

- Euro-GASP
- HL-AziR
- Treatment failure

Participation in Euro-GASP is via decentralised testing in the Central Pathology Laboratory in St. James’s Hospital (SJH). SJH was designated the Interim National Gonococcal Reference Laboratory (INGCRL) in 2017 to improve national GC AMR surveillance.

Methods

From 2010 – 2016, isolates originated from two main STI clinics. In 2017, isolates could be submitted from external laboratories with other clinical sources. However, only a small numbers of isolates (n=11) submitted to Euro-GASP in 2017 came from external laboratories.

All isolates were tested for susceptibility to:

- Cefixime
 - Ceftriaxone
 - Azithromycin
 - Ciprofloxacin
- MIC strip

And for production of β -lactamase – Nitrocefin

Epidemiological data were collected on all patients using a combination of electronic patient records, enhanced surveillance forms and the Computerised Infectious Diseases Reporting (CIDR) tool.

Patient Demographics

775 isolates were reported to Euro-GASP, 2010 – 2017 (7% of total national notifications reported during that time):

Variable	Data available	Percent (where known)
Sex	100%	92% males 8% females
Age	100%	Range: 15 – 65 years Median (male): 28 Median (female): 23
Region of birth	75%	Ireland: 60% Latin America: 18% Western Europe: 10% Central/Eastern Europe: 8% Other regions: 4%
Mode of transmission	92%	MSM: 78% Heterosexual male: 14% Heterosexual female: 9%
HIV status	84%	12% HIV positive 88% HIV negative
Previous gonorrhoea	88%	21% had previous gonorrhoea infection
Concurrent chlamydia	94%	15% had concurrent chlamydia infection
Compliance with dual therapy	37%	89% received recommended dual therapy

Antimicrobial Resistance, 2010 – 2017

- 99% of isolates were susceptible to cefixime.
- There has been drift towards lower MICs since ceftriaxone was introduced as treatment for GC.

- Only 1 reported isolate was resistant to ceftriaxone.
- There has been drift towards higher MICs in recent years.

- 13% of isolates were resistant to azithromycin.
- The proportion resistant has been >10% since 2014.

- No isolates with reduced susceptibility to ceftriaxone were also resistant to azithromycin

- 37% of isolates were resistant to ciprofloxacin.
- 9% of isolates produced β -lactamase.

Ciprofloxacin:

β -lactamase:

National sentinel surveillance: Conclusions

Designation of the INGCRL in 2017 provides an opportunity for the Irish Euro-GASP dataset to become more nationally representative.

Laboratory and surveillance mechanisms have been established that will aid in a move towards a more nationally representative dataset in 2018, and a national sentinel surveillance system for GC AMR.

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