



# Surveillance of High Level Azithromycin Resistant (HL-AziR) Gonorrhoea in Ireland

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**Addendum to:** The National Guidelines for the Prevention and Control of Gonorrhoea and for Minimising the Impact of Antimicrobial Resistance in *Neisseria gonorrhoeae*

(Published by the Antimicrobial Resistance in *Neisseria gonorrhoeae* sub-committee of the HPSC Scientific Advisory Committee in 2017)

## Background

This protocol is an addendum to the National Guidelines for the Prevention and Control of Gonorrhoea and for Minimising the Impact of Antimicrobial Resistance in *Neisseria gonorrhoeae*, which were developed by a sub-group of the Scientific Advisory Committee of the Health Protection Surveillance Centre (HPSC). The main document is available at:

<http://www.hpsc.ie/a-z/hivstis/sexuallytransmittedinfections/gonorrhoea/amrgonorrhoea/AMR%20Gonorrhoea%20guidelines%20document%20FINAL%202017.pdf>

Between November 2014 and August 2016 there were 50 (48 confirmed and 2 probable) cases of high level azithromycin resistant gonorrhoea (HL-AziR) (MIC >256mg/L) diagnosed amongst residents of England. HL-AziR has previously been observed only sporadically in the UK and elsewhere. For further details see

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/552058/hpr3016\\_hlzrg.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/552058/hpr3016_hlzrg.pdf).

The first two cases of HL-AziR gonorrhoea in Ireland were reported by Lynagh et al in 2015<sup>[1]</sup>. There have been 18 confirmed cases of HL-AziR gonorrhoea in Ireland from 2011 to July 2017 and these cases have mainly been reported among heterosexual males<sup>[2]</sup>. Few antimicrobials remain effective in the treatment of gonorrhoea. Current recommended therapy involves intramuscular ceftriaxone 500mg in combination with azithromycin 1g orally. Gonorrhoea can develop resistance rapidly. Therefore dual therapy is recommended because simultaneous development of resistance to both drug types is unlikely, and first-line treatment will remain effective. 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.

In 2017 the Central Pathology Laboratory in the Clinical Microbiology Department of St. James's Hospital was designated the Interim National Gonococcal (GC) Reference Laboratory. As part of this designation a surveillance scientist (GC AMR surveillance scientist) was appointed to work between the HPSC and the Interim GC Reference Laboratory in order to establish, manage and maintain a national database for the surveillance of antimicrobial resistant gonorrhoea and HL-AziR gonococcal infections. When a case of HL-AziR gonorrhoea is detected or confirmed by the Interim GC Reference Laboratory epidemiological data on those cases is collated to monitor the transmission of HL-AziR gonorrhoea strains, to detect outbreaks and to inform gonorrhoea management guidelines.

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<sup>[1]</sup> Lynagh Y, Mac Aogáin M, Walsh A, Rogers TR, *et al*. Detailed characterization of the first high-level azithromycin-resistant *Neisseria gonorrhoeae* cases in Ireland J. Antimicrob. Chemother. first published online April 22, 2015 doi:10.1093/jac/dkv106

<sup>[2]</sup> HPSC. High level azithromycin resistant (HL-AziR) gonorrhoea in Ireland 2011 - 2017. Health Protection Surveillance Centre 2017

## **Objectives of Surveillance System**

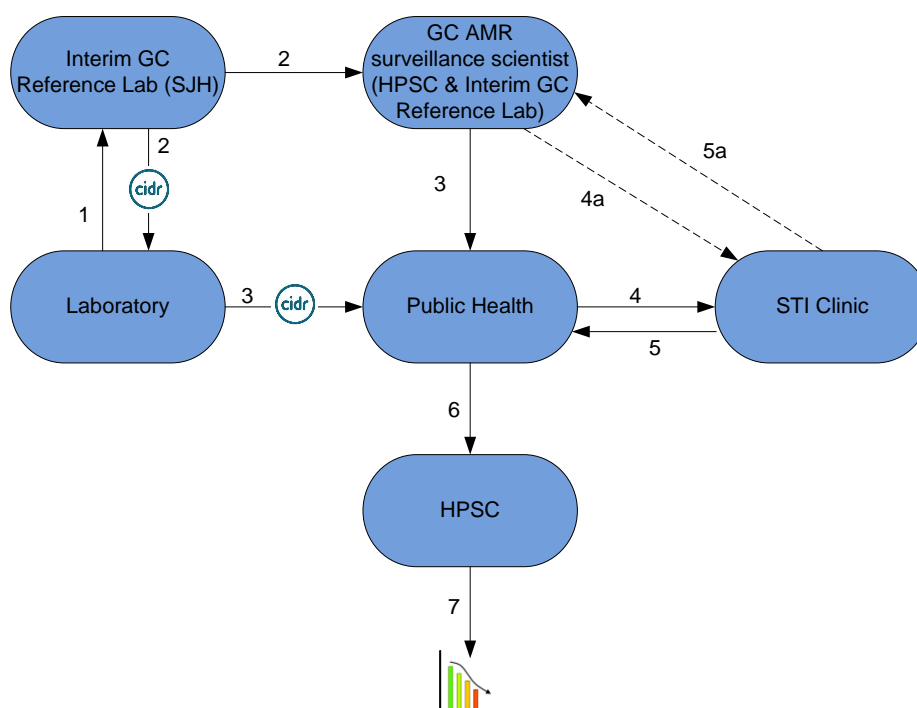
The principal objectives of this system are to:

- Detect outbreaks of HL-AziR gonococcal infection.
- Collate information on any Irish cases of HL-AziR gonococcal infection that arise, or have arisen in since 2015.
- Obtain an understanding of the epidemiology and emerging trends of HL-AziR gonorrhoea in Ireland.
- Through lab techniques (such as whole genome sequencing) to collaborate with colleagues in the UK to identify linkages and trends internationally.

## **Case Definition**

High level Azithromycin resistant (HL-AziR) gonorrhoea is defined as isolates which require a minimum inhibitory concentration (MIC) of greater than 256mg/L (MIC >256mg/L) to inhibit growth *in vitro*.

## Procedures for the Surveillance of HL-AziR Gonorrhoea



**Figure 1. Summary of notification process for HL-AziR gonorrhoea**

Once a case of high level resistant azithromycin gonorrhoea is identified/suspected in a laboratory ...

1. Local laboratories send isolates to the Interim Gonococcal Reference Laboratory at St. James's Hospital for confirmation (culture and susceptibility testing and molecular typing). The contact person there is Brendan Crowley, Consultant Microbiologist <http://www.stjames.ie/Departments/DepartmentsAZ/N/NationalGonococcalReferenceLaboratory/DepartmentOverview/>
2. Positive results are uploaded by the Interim GC Reference Laboratory to CIDR and authorised to the local (source) laboratory; in addition to informal reporting to the GC AMR surveillance scientist
3. Local (source) laboratory notify local medical officer of health of the case of HL-AziR resistant gonorrhoea via CIDR; the GC AMR surveillance scientist and the local Department of Public Health also liaise to discuss the case
4. Local public health sends the HL-AziR resistant gonorrhoea enhanced surveillance form to the nominated person in the relevant clinic. If possible, local public health should agree a nominated contact person with each local clinic in advance of cases arising
  - a. If cases are identified within HSE East (Dublin, Kildare & Wicklow) the GC AMR surveillance scientist within the HPSC will send the form to the nominated contact/clinician
5. Nominated contact/clinician completes and returns the form to local public health
  - a. If cases are identified within HSE East (Dublin, Kildare & Wicklow) then the completed should be returned to HPSC via email ([hpsc-data@hpsc.ie](mailto:hpsc-data@hpsc.ie)) and marked for the attention of the GC AMR surveillance scientist (Aoife Colgan). An alert email

to indicate that data have been sent to the HPSC data email address should be sent to ([aoife.colgan@hpsc.ie](mailto:aoife.colgan@hpsc.ie))

6. Local public health forwards the form to HPSC via email ([hpsc-data@hpsc.ie](mailto:hpsc-data@hpsc.ie)) and marked for the attention of the GC AMR surveillance scientist (Aoife Colgan). An alert email to indicate that data have been sent to the HPSC data email address should be sent to [aoife.colgan@hpsc.ie](mailto:aoife.colgan@hpsc.ie)
7. Data are collated at HPSC and epidemiological reports prepared