



Protocol for the surveillance of ceftriaxone resistant 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%20documentn%20FINAL%202017.pdf>

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.

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 for longer. To date, there have been two reported cases of gonorrhoea demonstrating *in vitro* resistance to ceftriaxone in Ireland. The first was reported to the European Gonococcal Antimicrobial Surveillance Programme (Euro-GASP) in 2012 and the second case was reported in August 2018. Information on the more recent case can be found at:

<http://ndsc.newsweaver.ie/epiinsight/17ai6ftq19q10gkzp9yxn5?a=2&p=53827179&t=17517804>

The national guidelines provide recommendations and a [flowchart](#) for the public health management of cases of Cephalosporin resistant gonorrhoea treatment failure. However enhanced surveillance of cases of ceftriaxone resistant gonococcal infection that do not result in treatment failure is also necessary to detect outbreaks and to inform gonorrhoea management guidelines.

Objectives of Surveillance System

The principal objectives of this system are to:

1. Detect cases of ceftriaxone resistant gonococcal infection.
2. Obtain an understanding of the epidemiology and emerging trends of ceftriaxone resistant gonorrhoea in Ireland by collating information on new Irish cases of ceftriaxone resistant gonococcal infection that are detected on or after October 12th 2018.
3. Through lab techniques (such as whole genome sequencing), to identify linkages and trends internationally.

Case Definition

Ceftriaxone resistant gonorrhoea is defined as isolates which require a minimum inhibitory concentration (MIC) of greater than 0.125 mg/L (MIC >0.125 mg/L) of ceftriaxone to inhibit growth *in vitro*.

Procedures for the Surveillance of Ceftriaxone resistant Gonorrhoea

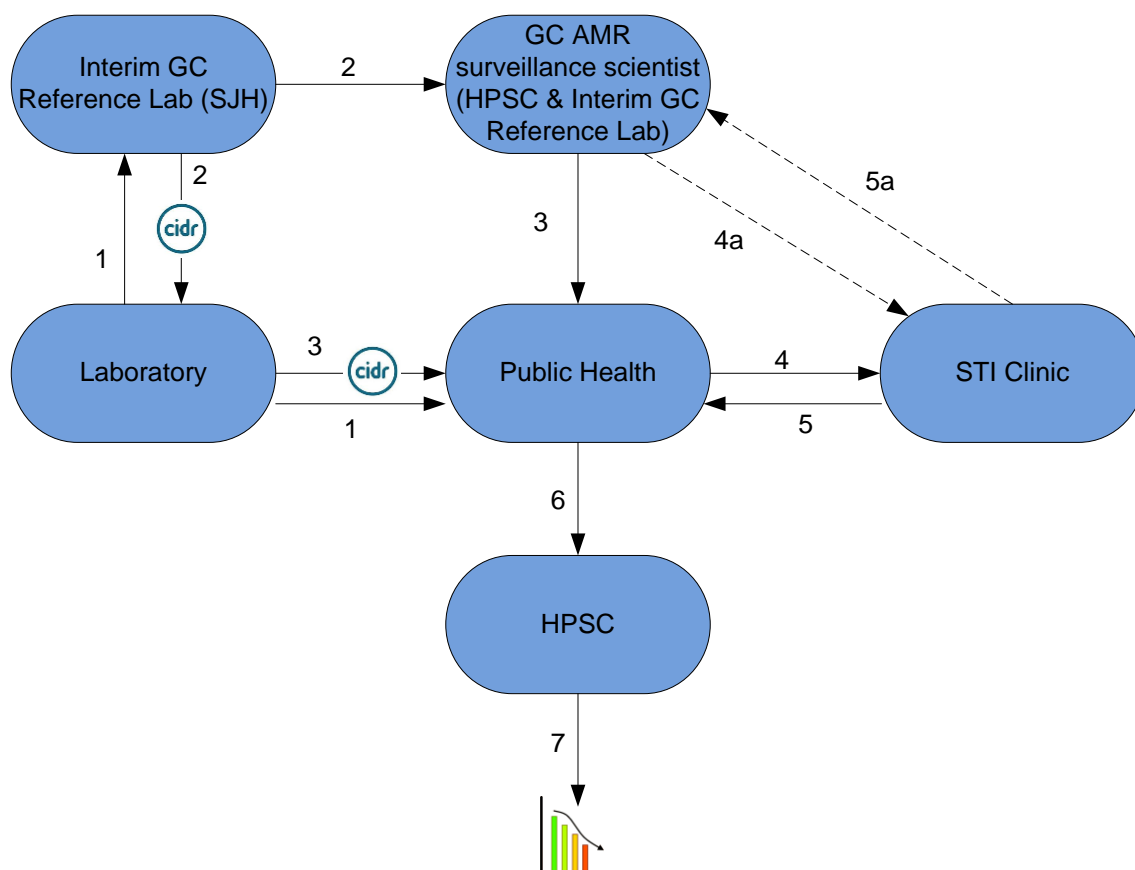


Figure 1. Summary of notification process for Ceftriaxone resistant gonorrhoea

Once a case of ceftriaxone resistant 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/DepartmentsA-Z/N/NationalGonococcalReferenceLaboratory/DepartmentOverview/>
- Note:** Local laboratories should also flag the case/suspected case with the source clinician and with the local Department of Public Health, when sending the isolate to the Interim Gonococcal Reference Laboratory for confirmation
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 ceftriaxone resistant gonorrhoea via CIDR; the GC AMR surveillance scientist and the local Department of Public Health also liaise to discuss the case

4. Once it has been ascertained that the ceftriaxone resistant case was not a case of treatment failure¹, local public health sends the Ceftriaxone 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) 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)
6. Local public health forwards the form to HPSC via email (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
7. Data are collated at HPSC and epidemiological reports prepared

¹ If the case is ascertained to be a case of treatment failure, the following guidelines must followed instead:
<http://www.hpsc.ie/a-z/hivstis/sexuallytransmittedinfections/gonorrhoea/publications/AMR%20Gonorrhoea%20guidelines%20docu metn%20FINAL%202017.pdf#page=39>