Prevalence of *por A* pseudogene deletion amongst *N. gonorrhoeae* isolates referred to GRASP

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PHE recommends confirmatory testing - GC NAAT Positives >90%

Can be problematic to confirm using commercial platforms

Several In-house assays available: *opa* gene, 16s rRNA, *porA* pseudogene

*porA* pseudogene – conserved in NG & significant different in NM – ideal sensitivity & specificity

*porA* negative GC have been reported – Australia, Sweden, Scotland & England

**Aim:** Determine the prevalence of *porA* negative GC isolates in England & Wales using isolates referred to GRASP
Methods

- GRASP – sentinel surveillance study
- Regional representation of GUM clinic patients
- DNA lysates were prepared from 533 *N. gonorrhoeae* isolates 2011
  - 20 centres around England & Wales
- Tested using an in house RT-PCR for the *porA* and *opa* gene
- DNA sequencing of discrepant strains
### PCR Results

<table>
<thead>
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<th>No Isolates</th>
<th>PorA PCR results</th>
<th>opa PCR Results</th>
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<tbody>
<tr>
<td></td>
<td>+</td>
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<tr>
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99.6% - GC isolates *porA* positive

0.4% - GC isolates *porA* negative
DNA Sequencing Results

• Primers and probes – target gonococcal specific regions

• 2 porA PCR negative GC Isolates – *N. meningitides* porA gene

• False negative GC porA PCR results
Conclusions

• *porA* pseudogene is a popular target for confirmatory assays

• 0.4% (2) gonococcal isolates were identified as *porA* negative in England

• Both GC Isolates have incorporated MC *porA* gene into their genome

• Front line and confirmatory strategies remain a challenge for GC NAATs

• Neisseria are genetically fluid and competent – all stages of their life cycle

• *porA* pseudogene is a nationally accepted target for a supplementary test

• Microbiologists must be vigilant to decreases in numbers of confirmatory tests
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