Increased testing for *Neisseria gonorrhoeae* with duplex nucleic acid amplification tests in Australia: implications for surveillance

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Abstract. **Background:** Gonorrhoea notifications have been increasing in Australia’s cities, in both men and women. We investigated if this could be, at least in part, a result of a testing artefact. **Methods:** We surveyed 28 laboratories that were known to test for both *Neisseria gonorrhoeae* (NG) and *Chlamydia trachomatis* (CT) to determine their testing and reporting practices, and when these practices were instituted. **Results:** By 2012, 23 (82%) of the laboratories were routinely performing duplex nucleic acid amplification tests for both CT and NG even if a test for only one organism was requested, up from 9 (32%) laboratories before 2007. Although written reports of negative NG tests were not provided if the test was not requested, positive NG tests were always communicated to the attending clinician. **Conclusions:** The move towards routine duplex testing for CT and NG has probably resulted in more Australians being tested for NG than ever before. While this change has advantages for case-finding and improved public health outcomes, it also brings an increasing potential for false-positive NG tests. Recent trends in NG notifications should be interpreted with caution.

Received 5 September 2014, accepted 5 December 2014, published online 9 February 2015

Introduction

Australian gonorrhoea annual notifications have been rising substantially among men (from 5041 in 2007 to 9526 in 2012) and women (from 2594 in 2007 to 4116 in 2012), mainly in non-Indigenous people. Much of the increase in diagnoses in men can be attributed to same-sex transmission, but no explanation has been provided for the increase in women that has been focussed in urban areas. Since the mid-2000s duplex nucleic acid amplification tests (NAAT) for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) have become available such that both organisms can be tested for on the same specimen at the same time. Under clinical guidelines and from a low base, testing for CT has risen sharply over recent years. We had received anecdotal reports that some laboratories were routinely performing the duplex CT/NG NAAT tests even when a test for CT alone was requested. As most, but not all, of the increase in CT notifications can be explained by increased testing, we investigated if the same could be happening for NG.

Methods

We surveyed by email the managers or delegates of the laboratories who participated in an Australian Society for Microbiology Special Interest Group, and those participating in the Australian Collaboration for Coordinated Sentinel Surveillance for Sexually Transmissible Infections and Blood Borne Viruses (ACCESS) project. We asked each laboratory if they routinely performed a duplex CT/NG test if only a CT test was requested. If so, we asked them when they started routinely performing duplex tests, how they report the result, and who they informed if the NG test was positive.

Results

Of an estimated 35–40 laboratories likely to be testing for NG or CT in Australia, 28 of the larger laboratories responded. These laboratories, 10 private and 18 public, were based in every state and territory of mainland Australia. By the end of 2012, 23 (82%) of the 28 laboratories reported that they routinely used the duplex CT/NG NAAT test, up from 9 (32%) before 2007 (Fig. 1) even if a test for only one organism was requested. Eight different test platforms were reported, and two laboratories used in-house polymerase chain reaction tests. One laboratory only tested for NG by culture, which it only conducted on clinician request. All of the 23 laboratories that performed routine duplex testing reported that they only provided a negative NG test
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Conflict of interest
None declared.
References