Screening for chlamydia and gonorrhea in primary care in populations with low prevalence

I read the new recommendations on primary care screening for chlamydia and gonorrhea with interest, but I wanted to highlight an issue not addressed in the article.[1]

Although most nucleic acid amplification tests used for diagnosis of chlamydia and gonorrhea in Canada have excellent clinical sensitivity and specificity (> 95%),[2] they may still generate false-positive results when used in a population with low prevalence of these diseases. Consider the example of female vaginal swabs taken for chlamydia testing in a population with a 1.5% prevalence of chlamydia (within the estimate indicated in the screening recommendations). Using a test with 97.2% sensitivity and 98.5% specificity,[3] the positive and negative predictive values are 49.7% and 99.9%, respectively. That means the chance that a positive result is a false positive is greater than 50%.

The concern with false positives drops as prevalence increases; the same test in a population with 10% prevalence of chlamydia has a positive predictive value of 87.8%, so only roughly 1 in 10 positive results would be a false positive. In other words, test performance is better in higher-risk populations.

Widespread testing for chlamydia and gonorrhea can help to reduce disease transmission and complications. However, health care providers should be aware that with expanded screening in a low-prevalence population, they will see false-positive results, which may cause anxiety for patients and their partners and could lead to unnecessary interventions. Repeat testing should be considered if a false-positive result is suspected based on a patient's individual history; a subsequent negative result is reassuring, given the high negative predictive value of nucleic acid amplification tests in this context.

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