ED ID Nuggets: GC/Chlamydia

Why do we care? What Percentage of pts that are asymptomatic? What percentage of sexually active people are positive on screens?

**Background/intro tidbits:**

Per CDC STI Guidelines (2015): Optimal urogenital specimen types using NAAT - first catch urine (men) vaginal swab (women)

First catch meaning- … first void after waking up? Or just not midstream catch?

First catch = first bit of urine aka “dirty catch” → no urination in previous hour, obtain 1st 5-20mL

First void = first of the day (don’t need this for the NAAT)

USPSTF Evidence Summary on GC/C:

* Nucleic Acid Amplification Tests (NAAT) - the new gold standard (same Sp as culture, ease of specimen transport) approved for:
  + Women - vaginal or endocervical swab, first-catch urine
  + Men: urethral swab or first-catch urine

**Q & A:**

* what is sens/spec of **urinary** gc/c ? Is it different for men or women? (data from USPSTF comparison of 7 or 8 different NAATs - [table 2 here](https://www.uspreventiveservicestaskforce.org/Page/SupportingDoc/chlamydia-and-gonorrhea-screening/evidence-summary3#tab2))
  + Men
    - Chlamydia Sn 97.2-100%; Sp 98-100%
    - GC Sn 90-100%; 99.5-100%
  + Women
    - Chlamydia Sn 72-98.2%; Sp 98-100%
    - GC Sn 78.6-100%; Sp 99.5-100%
    - Bottom line: more false negatives compared to swabs (Sn = 90s)
* how is this sens/spec compared to **patient performed swabs**?
  + Self-collected vaginal swabs have same Sp/Sn to clinician-collected
    - Patient-collected Sn/Sp = C 98.3%/96.5%; GC 96.1%/99.3%
    - Clinician-collected Sn/Sp = C 97.2%/95.2%; GC 96.2%/99.3%
  + No data found on self-collected male urethral swabs (hey, if Cologuard sales have taken off! ) but to note that provider collected swabs have C Sn 86.1-98.9%; Sp 97.5-99.8% and GC Sn 100%; Sp 97.1-100%
* findings on **UA / h&p suggestive of “add on” gc/c** (anecdotally, based on no evidence whatsoever, the patients without a clear hx of “it burns when I pee and have frequency” I add it on. Hit rate maybe 5%)
  + So...didn’t find much on this. However, some of the specific NAAT [package inserts](https://www.beaumontlaboratory.com/test-lab-directory/lab-test-details/?testid=1523) from manufacturers explicitly state “add on tests CAN NOT be performed on urine specimens following testing on the UA instrument” (meant that I order a UA in addition to gc/c)
  + Any data on %of gc/c with +wbcs on UA?
  + (1) Normal urinalysis-67% had no infection; (2) Positive nitrites or protein-55% had UTI; (3) Positive leukocytes or blood-62% had STI; and (4) Both nitrites/protein and leukocytes/blood positive-28% had STI and 65% had UTI. (Huppert)
* does **midstream vs first catch** matter? (I didn't know this was a thing!)
  + One study of 100 women with positive first-void positive chlamydia NAAT, 96% (n=96) also had positive midstream. Authors drew conclusion that catch time was not as important as conventionally thought. [NEJM JWatch](https://www.jwatch.org/wh201202020000001/2012/02/02/testing-midstream-urine-chlamydia-trachomatis) did a summary and comment on this, finding flaws in study design, concluding that midstream is not recommended.
* **how long does NAAT stay positive**? Do patients need a **test of cure** / reinfection?
  + CDC does not advise test of cure (3-4 weeks s/p tx) unless therapy adherence is questioned, sxs persis, or reinfection is suspected.
    - But they do recommend re-testing at 3mos
  + Most failed test of cures are not from treatment failure, but from reinfection (partner not treated)
  + Residual nucleic acid from Chlamydia rendered noninfective by antibiotics may still be positive 3 weeks after therapy, for Gonorrhea it is 2 weeks.

treating for partner ---> thoughts? Education given (stay off it for \_\_\_\_ weeks post tx)?

So to recap ….

* Self swabs - consider it!
* Baseline ~7%+
* Do not need test of cure, but test of reinfection….

References:

Meyer T. Diagnostic Procedures to Detect Chlamydia trachomatis Infections. Microorganisms. 2016;4(3):25. Published 2016 Aug 5. doi:10.3390/microorganisms4030025 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5039585/>

Schachter J, Chernesky MA, Willis DE, et al. Vaginal swabs are the specimens of choice when screening for Chlamydia trachomatis and Neisseria gonorrhoeae: results from a multicenter evaluation of the APTIMA assays for both infections. Sex Transm Dis 2005;32:725–8. <https://www.ncbi.nlm.nih.gov/pubmed/16314767>

Mangin D, Murdoch D, Wells JE, et al. Chlamydia trachomatis testing sensitivity in midstream compared with first-void urine specimens. Ann Fam Med. 2012;10(1):50-3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3262462/>

2015 Sexually Transmitted Diseases Treatment Guidelines (2015) <https://www.cdc.gov/std/tg2015/chlamydia.htm>

# Recommendations for the Laboratory-Based Detection of Chlamydia trachomatis and Neisseria gonorrhoeae — 2014. Recommendations and Reports. CDC Morbidity and Mortality Weekly Report. March 14, 2014 / 63(RR02);1-19 <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6302a1.htm>

Evidence Summary on GC/C: <https://www.uspreventiveservicestaskforce.org/Page/SupportingDoc/chlamydia-and-gonorrhea-screening/evidence-summary3>

# Urinary Symptoms in Adolescent Females: STI or UTI? [Jill S.HuppertM.D., M.P.H.aFrankBiroM.D.aDongmeiLanM.S.bJoel E.MortensenPh.D.cJenniferReedM.D.dGail B.SlapM.D., M.S.a](https://www.sciencedirect.com/science/article/pii/S1054139X06006112?via%3Dihub#!) <https://www.sciencedirect.com/science/article/pii/S1054139X06006112?via%3Dihub>