

** Proposed new case definition; to be confirmed by AFHSB following analyses of data*

GONORRHEA

Includes Acute and Chronic Infection

Background

This case definition was developed in 2014 by the Armed Forces Health Surveillance Center (AFHSC) for the purpose of epidemiological surveillance of a sexually transmitted infection important to military associated populations.

Clinical Description

Gonorrhea refers to the infection caused by *Neisseria gonorrhoeae* (gonococcus). Gonorrhea is the second most commonly reported bacterial sexually transmitted infection (STI), after chlamydia infections.¹ The bacterium infects the mucous membranes of the reproductive tract as well as those of the mouth, throat, eyes, and anus. When symptoms are present, they may include burning with urination and urethral discharge in men, and vaginal discharge and pelvic pain in women. Untreated gonorrhea can lead to pelvic inflammatory disease (PID), epididymitis, infertility, and, rarely, disseminated gonococcal infection (DGI), a life threatening infection of the blood. Widespread screening for gonorrhea is not recommended by the Centers for Disease Control and Prevention (CDC); however, targeted screening of sexually active men and women at increased risk of STIs (e.g., previous infection, multiple sex partners, and inconsistent condom use) is recommended. Individuals infected with *N. gonorrhoeae* are frequently coinfecting with *Chlamydia trachomatis*, so dual antibiotic therapy effective against both organisms is the treatment of choice.²

Case Definition and Incidence Rules

For surveillance purposes, a case of gonorrhea is defined as:

- *One hospitalization* with any of the defining diagnoses of gonorrhea (see ICD9 and ICD10 code lists below) in the *primary or secondary* diagnostic position.
- *One outpatient medical encounter* with any of the defining diagnoses of gonorrhea (see ICD9 and ICD10 code lists below) in the *primary or secondary* diagnostic position; or
- *One record of a reportable medical event* of gonorrhea.

Incidence rules:

For individuals who meet the case definition:

- An individual is considered a new incident case if *at least 30 days* have passed since the last medical encounter with a case defining diagnosis of gonorrhea infection (*see explanation of “gap” rule below*).

(continued on next page)

¹ <http://www.cdc.gov/std/gonorrhea/STDFact-gonorrhea-detailed.htm>; accessed June 2016.

² <http://www.cdc.gov/std/treatment/2010/gonococcal-infections.htm>; accessed June 2016.



Case Definition and Incidence Rules *(continued)*

- The incidence date is considered the date of onset documented in a reportable medical event, or the first hospitalization or outpatient medical encounter with a defining diagnosis of gonorrhea.

Exclusions:

- None

Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Gonorrhea, Acute	A54 (gonococcal infections)	098 (gonococcal infections)
	A54.0 (gonococcal infection of lower genitourinary tract without periurethral or accessory gland abscess)	--
	- A54.00 (gonococcal infection of lower genitourinary tract, unspecified)	098.0 (gonococcal infection, acute, of lower genitourinary tract) 098.2 (gonococcal infection, chronic, of lower genitourinary tract)
	- A54.01 (gonococcal cystitis and urethritis, unspecified)	098.1 (gonococcal infection acute, of upper genitourinary tract) - 098.11 (gonococcal cystitis, acute) 098.3 (gonococcal infection, chronic of upper genitourinary tract) - 098.31 (gonococcal cystitis, chronic)
	- A54.02 (gonococcal vulvovaginitis, unspecified)	098.0 (above)
	- A54.03 (gonococcal cervicitis, unspecified)	098.15 (gonococcal cervicitis, acute) 098.35 (gonococcal cervicitis, chronic)
	- A54.09 (other gonococcal infection of lower genitourinary tract)	098.0 (above)
	A54.1 (gonococcal infection of lower genitourinary tract with periurethral or accessory gland abscess)	098.0 (above)
	A54.2 (gonococcal pelviperitonitis and other gonococcal genitourinary infection)	--



- A54.21 (gonococcal infection of kidney and ureter)	098.19 (other gonococcal infection acute, of upper genitourinary tract)
- A54.22 (other gonococcal prostatitis)	098.12 (gonococcal prostatitis, acute) 098.32 (gonococcal prostatitis, chronic)
- A54.23 (other gonococcal infection of other male genital organs)	098.13 (gonococcal epididymo-orchitis, acute) 098.14 (gonococcal seminal vesiculitis, acute) 098.33 (gonococcal epididymo-orchitis, chronic) 098.34 (gonococcal seminal vesiculitis, chronic)
- A54.24 (gonococcal female pelvic inflammatory disease)	098.16 (gonococcal endometritis, acute) 098.36 (gonococcal endometritis, chronic)
- A54.29 (other gonococcal genitourinary infections)	098.10 (gonococcal infection, acute, of upper genitourinary tract, site unspecified) 098.17 (gonococcal salpingitis, specified as acute) 098.30 (chronic gonococcal infection of the upper genitourinary tract, site unspecified) 098.37 (gonococcal salpingitis, chronic) 098.39 (other chronic gonococcal infection of upper genitourinary tract)
A54.3 (gonococcal infection of eye)	098.4 (gonococcal infection of eye)
- A54.30 (gonococcal infection of the eye, unspecified)	098.49 (below)
- A54.31 (gonococcal conjunctivitis)	098.40 (gonococcal infection, neonatorum)
- A54.32 (gonococcal iridocyclitis)	098.41 (gonococcal iridocyclitis)
- A54.33 (gonococcal keratitis)	098.43 (gonococcal keratitis)
- A54.39 (other gonococcal eye infection)	098.42 (gonococcal endophthalmitis) 098.49 (other gonococcal infection of the eye)
A54.4 (gonococcal infection of musculoskeletal system)	098.5 (gonococcal infection of the joint)
- A54.40 (gonococcal infection of musculoskeletal system, unspecified)	098.59 (other gonococcal infection of joint)
- A54.41 (gonococcal spondylopathy)	098.53 (gonococcal spondylitis)
- A54.42 (gonococcal arthritis)	098.50 (gonococcal arthritis)
- A54.43 (gonococcal osteomyelitis)	098.59 (above)

- A54.49 (gonococcal infection of other musculoskeletal tissue)	098.51 (gonococcal synovitis and tenosynovitis) 098.52 (gonococcal bursitis)
A54.5 (gonococcal pharyngitis)	098.6 (gonococcal infection of pharynx)
A54.6 (gonococcal infection of anus and rectum)	098.7 (gonococcal infection of anus and rectum)
A54.8 (other gonococcal infections)	098.8 (gonococcal infection of other specified sites)
- A54.81 (gonococcal meningitis)	098.82 (gonococcal meningitis)
- A54.82 (gonococcal brain abscess)	098.89 (below)
- A54.83 (gonococcal heart infection)	098.83 (gonococcal pericarditis) 098.84 (gonococcal endocarditis) 098.85 (other gonococcal heart disease)
- A54.84 (gonococcal pneumonia)	098.89 (below)
- A54.85 (gonococcal peritonitis)	098.86 (gonococcal peritonitis)
- A54.86 (gonococcal sepsis) - A54.89 (below)	098.89 (gonococcal infection of other specified sites)
- A54.89 (other gonococcal infections)	098.81 (gonococcal keratosis, blennorrhagica)
A54.9 (gonococcal infection, unspecified)	098.89 (above)

Development and Revisions

- In May of 2014 the case definition was updated to include ICD10 codes.
- In 2013, AFHSC updated the case definitions for sexually transmitted infections (STIs) to be more specific for each of the individual STIs. For gonorrhea the case defining criteria were updated to include outpatient medical encounters only, ICD9 codes in the primary and secondary diagnostic positions, and a code set specific for acute gonorrhea. ICD9 codes for chronic gonorrhea were eliminated. Reports using this case definition were featured in a March 2013 Webinar on “STDs in Military Populations.”³
- In September 2009, a case definition for sexually transmitted infections (STIs) was developed by AFHSC and a Department of Defense (DoD) HIV/STI Prevention working group. The definition was used for a descriptive epidemiology report on the most frequent sexually transmitted infections among active component members of the U.S. Armed Forces.⁴ The case defining criteria in this definition included hospitalizations, used ICD9 codes in *any* diagnostic position, and were the same for all STIs in the report.

³ Focus on the Treatment of STDs in Military Populations – 2010 STD Treatment Guidelines Webinar. See <http://www.cdc.gov/std/training/webinars.htm>.

⁴ Armed Forces Health Surveillance Center. Sexually Transmitted Infections, U.S. Armed Forces, 2004-2009. *Medical Surveillance Monthly Report (MSMR)*; 2010 August; Vol.17(8): 2-10.



- The definition was developed by the AFHSC Medical Surveillance Monthly Report (MSMR) staff for a February 2013 article on gonorrhea and other STIs.⁵ This case definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- This case definition uses a 30-day “gap in care” incidence rule for medical encounters to define a new incident case of gonorrhea infection. Use of this methodology presumes that medical encounters for gonorrhea infection that occur within 30 days of a previous such encounter constitute follow-up care of the previously diagnosed case. The goal of the “gap in care” rule is to lessen the frequency with which encounters for follow-up care are treated as new incident cases of infection.

The “gap in care” rule differs slightly from an absolute 30-day incidence rule in which an individual may be considered an incident case once every 30 days. Analyses comparing the two incidence rules show an approximate 2% difference between the methodologies, with the gap in care rule being slightly more specific. Use of the “gap in care rule” for this case definition is consistent with the methodology used by other investigators doing gonorrhea surveillance.

- A period of 30 days between encounters is used to allow for adequate resolution of infection after treatment and to avoid confusing medical encounters for follow-up care with medical encounters for a new infection.

Code Set Determination and Rationale

- The ICD10 coding system does not distinguish between acute and chronic gonorrhea. In response, in May of 2014, the ICD9 code set was updated to include codes for chronic gonorrhea. The case finding criteria was also updated to include hospitalizations as individuals with chronic disease are more likely to have inpatient medical encounters. The intent of the updated case definition is to capture all incident cases of gonococcal infection

Prior to October 2015, the following codes for chronic gonococcal infection were not included in the code set: ICD9 code 098.2 (chronic, of lower genitourinary tract) / ICD10 code A54.00 (gonococcal infection of the lower genitourinary tract, unspecified) and 098.3x (chronic, of upper genitourinary tract) / ICD10 A54.29 (other gonococcal genitourinary infections). Previous case definitions were focused on acute gonorrhea incidence.

- The code set used in the February 2013 MSMR article on STIs did not include ICD9 code 098.5x (gonococcal infection of the joint), 098.6 (gonococcal infection of pharynx), and 098.7 (gonococcal infection of anus and rectum). ICD9 code 098.5 is included in this document and will be included in the code set for future analyses because joint infections may be the first overt manifestation of recently acquired (acute) gonococcal infection. ICD9 codes 098.6 and 098.7 are also included in this document and will be included in the code set for future analyses

Reports

AFHSC reports on gonorrhea in the following reports:

- Monthly: AFHSB Reportable Events Monthly Report. Available on the DHA website at: <http://www.health.mil/Military-Health-Topics/Health-Readiness/Armed-Forces-Health-Surveillance-Branch/Reports-and-Publications>.

⁵ Armed Forces Health Surveillance Center. Sexually Transmitted Infections, Active Component, U.S. Armed Forces, 2000-2012. *Medical Surveillance Monthly Report (MSMR)*; 2013 February; Vol 20(2): 5-10.



Review

May 2014	AFHSC Surveillance Methods and Standards (SMS) working group proposed new case definition based on ICD10 coding system.
Oct 2013	Case definition reviewed and adopted by the AFHSC Surveillance Methods and Standards (SMS) working group.
Feb 2013	Case definition reviewed and adopted by the AFHSC MSMR staff.

Comments

None

