

URINARY TRACT INFECTION

Lower Urinary Tract Infection Only; Does Not Include Pyelonephritis

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of a condition important to military-associated populations.

Clinical Description

Urinary tract infections (UTIs) are defined as infections of the lower urinary tract (i.e., the urethra (urethritis) or the bladder (cystitis)). They are most common among young adults, especially women. In addition to female gender, risk factors include sexual activity, use of diaphragms or spermicidal agents, changes in vaginal flora, menopause, and structural abnormalities of the urinary tract.¹ The most common cause of UTIs is urinary tract contamination with fecal bacteria such as *Escherichia coli*. Symptoms include painful, frequent urination; cloudy, foul-smelling urine; and mild abdominal pain. Most infections are easily treated with antibiotics. If left untreated infections may ascend up the urinary tract to involve the kidneys leading to acute pyelonephritis.²

Case Definition and Incidence Rules

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

- *One hospitalization or one outpatient medical encounter* with a case defining diagnosis of UTI (see ICD9 and ICD10 code lists below) in the *primary* or *secondary* diagnostic position.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes a defining diagnosis of UTI.
- An individual may be considered a new incident case if *at least 30 days* have passed since the last medical encounter with a case defining diagnosis of UTI (*see explanation of “gap” rule below*).
- For “first occurrence” incident rate calculations an individual may be considered an incident case *only once per surveillance period*.
- *For recurrent case calculations*, an individual is considered a recurrent case if they meet the case defining criteria more than once during the surveillance period.

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¹ Mayo Clinic. Urinary tract infection (UTI). See <http://www.mayoclinic.org/diseases-conditions/urinary-tract-infection/basics/definition/con-20037892>. Accessed on July 2016.

² Armed Forces Health Surveillance Center. Urinary Tract Infections, Active Component, U.S. Armed Forces, 2000-2013. *Medical Surveillance Monthly Report (MSMR)*; 2014 Feb; Vol 21(2): 7-12.



Case Definition and Incidence Rules *(continued)*

Exclusions:

- None

Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Urinary tract infection	N30.0 (cystitis)	595.0 (acute cystitis)
	- N30.00 (acute cystitis <i>without</i> hematuria)	
	- N30.01 (acute cystitis <i>with</i> hematuria)	
	N30.9 (cystitis, unspecified)	595.9 (cystitis, unspecified)
	- N30.90 (cystitis, unspecified <i>without</i> hematuria)	
	- N30.91 (cystitis, unspecified <i>with</i> hematuria)	
	N34.1 (nonspecific urethritis)	597.80 (urethritis, unspecified)
	N34.2 (other urethritis)	
N39.0 (urinary tract infection, site not specified)	599.0 (urinary tract infection, unspecified)	

Development and Revisions

- In July of 2016 the case definition was updated to include ICD10 codes.
- This case definition was developed in February of 2014 by the *Medical Surveillance Monthly Report (MSMR)* staff for use in a MSMR article on UTIs.¹ The case definition was also used for a June 2015 *MSMR* article on UTIs before and after Pap examination.³ The case definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.

³ Armed Forces Health Surveillance Center. Urinary tract infections in active component, U.S. Armed Forces women before and after routine screening Pap examination. *Medical Surveillance Monthly Report (MSMR)*; 2015 Jun; Vol 22(6): 13-19.



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 UTI. Use of this methodology presumes that medical encounters for UTI 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 – used for other case definitions - in which an individual may be considered an incident case once every 30 days.

Code Set Determination and Rationale

- The intent of this case definition is to capture cases of acute UTI with an infectious etiology. The codes below are not included in the code set because they may indicate cystitis (i.e., inflammation of the bladder) with a non-infectious etiology.

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Cystitis	N30.0 (cystitis)	595.0 (acute cystitis)
	- N30.00 (acute cystitis <i>without</i> hematuria)	
	- N30.01 (acute cystitis <i>with</i> hematuria)	
	N30.8 (other cystitis)	595.89 (other specified types of cystitis)

Reports

AFHSB reports on UTI the following reports:

- None

Review

Jul 2016 Case definition reviewed and adopted by the AFHSB Surveillance Methods and Standards (SMS) working group.

Feb 2014 Case definition developed by AFHSC MSMR staff.

Comments

None

