

URINARY TRACT INFECTION

Includes lower urinary tract infections only (cystitis and urethritis); does not include upper urinary tract infections (pyelonephritis).

Background

This case definition was developed by the Armed Forces Health Surveillance Division (AFHSD) for the purpose of epidemiological surveillance of *acute* urinary tract infections among military-associated populations.

Clinical Description

The urinary tract includes the bladder and urethra (lower urinary tract) and the kidneys (upper urinary tract). Infections of the urethra (urethritis) and bladder (cystitis) are most common among young adults, especially women. Anatomical factors, such as urethral length and location, as well as hormonal changes during menstruation and menopause that affect vaginal flora, increase susceptibility to infection. Additional risk factors include tight clothing, sexual activity, use of diaphragms or spermicides, and structural abnormalities of the urinary tract.¹ Most UTIs result from contamination with fecal bacteria, particularly *Escherichia coli*. Symptoms typically include dysuria, urinary frequency, cloudy or foul-smelling urine, and mild abdominal pain. While most infections respond well to antibiotics, untreated infections may ascend to the kidneys leading to acute pyelonephritis.²

Case Definition and Incidence Rules (February 2014 - present)

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

- *One hospitalization or one outpatient medical encounter* with a case defining diagnosis of acute UTI (see ICD9 and ICD10 code lists below) in the *first or second* 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 case defining diagnosis of acute 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 acute UTI (see “Case Definition and Incidence Rule Rationale” below).
- For *first occurrence* incident rate calculations an individual is considered an incident case *once per 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 April 2026.

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



Case Definition and Incidence Rules *(continued)*

- 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.

Exclusions:

- None

Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Cystitis	<i>N30.[0,9] (cystitis)</i>	
	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)		
Urethritis	<i>N34.[1] (urethritis and urethral syndrome)</i>	597.80 (urethritis, unspecified)
	- N34.1 (nonspecific urethritis)	
UTI site not specified	<i>N39.[0] (other disorders of the urinary tract)</i>	599.0 (urinary tract infection, unspecified)
	- N39.0 (urinary tract infection, site not specified)	

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.² The case definition was also used for a June 2015 *MSMR* article on UTIs before and after Pap examination.³ The case definition was

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



developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSD analyses.

Case Definition and Incidence Rule Rationale

- To define a new incident case of UTI, this case definition applies a 30-day “gap in care” rule. Use of this methodology assumes that medical encounters for a UTI that occur within 30 days of a previously diagnosed incident case constitute follow-up care. The approach reduces misclassification of follow-up visits as new incident cases. Unlike an “absolute” 30-day incidence rule—where an individual may be counted as a new case every 30 days—the gap-in-care methodology requires a 30-day period without related care before a new incident case can be counted.

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 non-infectious cystitis (bladder inflammation) or urethritis (urethral inflammation). Cystitis and urethritis, in the absence of an infectious etiology identified on urine culture or PCR/NAAT, are typically due to irritants (soaps, douches, lubricants), certain medications, mechanical or structural abnormalities, autoimmune conditions and hormonal changes.

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Other cystitis	N30.8 (other cystitis)	595.89 (other specified types of cystitis)
	- N30.80 (other cystitis <i>without</i> hematuria)	
	- N30.81 (other cystitis <i>with</i> hematuria)	
Other urethritis	N34.2 (other urethritis)	597.89 (other urethritis)

Reports

The AFHSD reports on acute UTI in the following reports:

- Periodic *MSMR* articles.

Review

Apr 2026	Case definition reviewed and updated by the AFHSD Surveillance Methods and Standards (SMS) working group.
Jul 2016	Case definition reviewed and adopted by the Armed Forces Health Surveillance Branch (AFHSB) SMS working group.
Feb 2014	Case definition developed by Armed Forces Health Surveillance Center (AFHSC) <i>MSMR</i> staff.



Comments

In the 2014 *MSMR* article on UTIs, cases of acute pyelonephritis were analyzed separately using the following code set and the same case definition and incidence rules used for acute UTI.²

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Pyelonephritis	N10 (acute pyelonephritis)	590.1 (acute pyelonephritis)
		- 590.10 (acute pyelonephritis <i>without</i> lesion of renal medullary necrosis)
		- 590.11 ((acute pyelonephritis <i>with</i> lesion of renal medullary necrosis)

