

TESTICULAR CANCER

Includes Invasive and Primary Cancers Only; Does Not Include Carcinoma In Situ or Metastatic Cancer

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of descriptive epidemiological reports on invasive cancers among active duty Service members.¹

Clinical Description

Testicular cancer is a common form of cancer in men between the ages of 15 and 35.² A painless testicular mass is the most common presentation although some patients will have diffuse pain or swelling. Germ cell tumors account for approximately 95% of tumors of the testis with the two main types being seminomas and nonseminomas. Seminoma tumors are generally slow growing, contain one cell type, are confined to the testes, and are extremely radiosensitive. Nonseminoma tumors are more common, faster growing, made up of more than one cell type, and require more aggressive treatment. Risk factors include white race, cryptorchidism, testicular atrophy, and family history. Orchiectomy followed by radiation and chemotherapy constitute the standard treatment. Testicular cancer is considered highly curable with the overall five-year survival rate exceeding 95%.³

Case Definition and Incidence Rules

For surveillance purposes, a case of testicular cancer is defined as:

- *One hospitalization* with a case defining diagnosis of testicular cancer (see ICD9 and ICD10 code lists below) in the *first* diagnostic position; or
- *One hospitalization with a V-code* indicating a radiotherapy, chemotherapy, or immunotherapy treatment procedure (see ICD9 and ICD10 code lists below) in the *first* diagnostic position; AND any case defining diagnosis of testicular cancer (see ICD9 and ICD10 code lists below) in the *second* diagnostic position; or
- *Three or more outpatient medical encounters*, occurring *within a 90-day period*, with any of the case defining diagnoses of testicular cancer (see ICD9 and ICD10 code lists below) in the *first or second* diagnostic position.

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¹ Armed Forces Health Surveillance Center. Incident diagnoses of cancers and cancer-related deaths, active component, U.S. Armed Forces, 2005-2014. *Medical Surveillance Monthly Report (MSMR)*. 2016 July; 23(7): 23-31.

² Kinkade, S. Testicular Cancer. *American Family Physician*. 1999 May; 59(9): 2539-2544.

³ Testicular Cancer. National Cancer Institute. Available at: <http://www.cancer.gov/cancertopics/types/testicular>. Accessed July 2015.



Case Definition and Incidence Rules *(continued)*

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization or the first of the three or more outpatient medical encounters occurring within a 90-day period that includes a case defining diagnosis of testicular cancer (see *Case Definition and Incidence Rule Rationale*).
- An individual is considered an incident case only *once per lifetime*.

Exclusions:

- None

Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Testicular cancer	C62 (malignant neoplasm of testis)	186 (malignant neoplasm of testis)
	C62.0 (malignant neoplasm of <i>undescended</i> testes)	186.0 (malignant neoplasm of undescended testis)
	- C62.00 (malignant neoplasm of <i>unspecified</i> undescended testis)	
	- C62.01 (malignant neoplasm of undescended <i>right</i> testis)	
	- C62.02 (malignant neoplasm of undescended <i>left</i> testis)	
	C62.1 (malignant neoplasm of <i>descended</i> testis)	186.9 (malignant neoplasm of other and unspecified testis)
	- C62.10 (malignant neoplasm of <i>unspecified</i> descended testis)	
	- C62.11 (malignant neoplasm of descended <i>right</i> testis)	
	- C62.12 (malignant neoplasm of descended <i>left</i> testis)	
C62.9 (malignant neoplasm of testis, <i>unspecified</i> whether descended or undescended)		

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	C62.90 (malignant neoplasm of unspecified testis, <i>unspecified</i> whether descended or undescended)	
	C62.91 (malignant neoplasm of <i>right</i> testis, unspecified whether descended or undescended)	
	C62.92 (malignant neoplasm of <i>left</i> testis, unspecified whether descended or undescended)	

Procedures	ICD-10-CM Codes	ICD-9-CM Codes
Related treatment procedures	Z51.0 (encounter for antineoplastic radiation therapy)	V58.0 (radiotherapy)
<i>(Radiotherapy, chemotherapy, immunotherapy)</i>	Z51.1 (encounter for antineoplastic chemotherapy and immunotherapy)	V58.1 (encounter for chemotherapy and immunotherapy for neoplastic conditions)
	- Z51.11 (encounter for antineoplastic chemotherapy)	V58.11 (encounter for antineoplastic chemotherapy)
	- Z51.12 (encounter for antineoplastic immunotherapy)	V58.12 (encounter for antineoplastic immunotherapy)

Development and Revisions

- In September of 2015 the case definition was updated to include ICD10 codes.
- This case definition was developed in 2010 by the Armed Forces Health Surveillance Center (AFHSC) in collaboration with a working group of subject matter experts from the Office of the Assistant Secretary of Defense for Health Affairs (ASDHA), the United States Army Public Health Command (USAPHC) and the United States Military Cancer Institute. The case definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.
- This case definition was developed for a report on ten different invasive cancers. As such, the same case finding criteria are used for all types of cancer in the report. This broad application of a single case definition may affect the sensitivity and specificity in varying ways for the individual cancers. Furthermore, surgical treatment procedures such as hysterectomy, mastectomy, prostatectomy, and other procedures unique to certain types of cancer are not included in the code sets for individual cancers.

Case Definition and Incidence Rule Rationale

- This case definition is designed to capture cases of *invasive* testicular cancer only. Carcinoma in situ of the testis, also known as Intratubular Germ Cell Neoplasia (IGCN) or Testicular Intraepithelial Neoplasia (TIN), ICD9 code 239.5 (neoplasm of unspecified nature; other genitourinary organs) / ICD10 D49.5 (neoplasm of unspecified behavior of other genitourinary organs), is not included in the code set.
- This case definition is designed to capture cases of *primary* cancers only. Metastatic cancer to the testicles is rare and is not included in this case definition.



- Case finding criteria for this definition requires one hospitalization record with a case-defining ICD9 or ICD10 code for testicular cancer in the *first* diagnostic position *unless* a code for a related treatment procedure is in the *first* diagnostic position; then the case-defining ICD9 or ICD10 code for testicular cancer is allowed in the *second* diagnostic position.
- The case finding criterion of *three or more outpatient medical encounters, within a 90-day period*, with a case defining diagnosis of testicular cancer is used to identify cases that do not meet the other criteria in the definition. For outpatient encounters, the incident date is considered the first of the three encounters occurring within the 90-day period (e.g., if a man has four testicular cancer codes on 1 Jan 12, 1 Dec 15, 8 Dec 15, and 15 Dec 15, the incident date would be 1 Dec 15. 1 Jan 12 would be considered a screening encounter and dropped). Exploratory analysis of the Defense Medical Surveillance System (DMSS) data revealed that this criterion yielded optimal specificity.⁴ The period of 90 days was established to allow for the likelihood that “true” cases of testicular cancer would have second and third encounters within that interval.
- For the purposes of counting new incident cases, AFHSB uses a once per lifetime incidence rule unless a specific timeframe is more appropriate and is specified (e.g., individuals may be counted as an incident case once every 365 days). Historically, a "once per surveillance period" incidence rule was used due to limited data in the Defense Medical Surveillance System (DMSS), but that is no longer necessary.

Reports

AFHSB reports on testicular cancer in the following reports:

- Periodic *MSMR* articles on cancers and cancer-related deaths.

Review

Jun 2019	Case definition reviewed and updated by the AFHSB Surveillance Methods and Standards (SMS) working group.
Sep 2015	Case definition reviewed and updated by the AFHSC Surveillance Methods and Standards (SMS) working group.
Jun 2012	Case definition reviewed and adopted by the AFHSC <i>MSMR</i> staff.

Comments

None

⁴ Detailed information on this analysis is available through AFHSB *MSMR* staff; reference DMSS Requests #R080127, #R080159, #R090184, #R090302, #R090341, #R100181, and #R100303 (DoD Cancer Incidence), 2008-2009.

