

CERVICAL CANCER

Includes Invasive Cancers Only; Does Not Include Carcinoma In Situ, Cervical Intraepithelial Neoplasia (CIN) or Abnormal Squamous Intraepithelial Lesions (SILs)

Background

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

Clinical Description

Cervical cancer is a malignant neoplasm arising from the cells of the uterine cervix. The most common cause is infection by certain types of “high-risk” human papilloma viruses (HPV). In the United States, where routine screening programs are in place and the HPV vaccine is available, invasive cancer of the cervix is much less common than in the rest of the world, where it is the third most common cancer among women.² The Papanicolaou (Pap) smear is the standard screening method of detecting precancerous lesions of the cervix. Precancerous lesions are usually monitored for possible progression to invasive cancer or are treated with ablation or excision to prevent such progression. Progression may be influenced by persistent HPV infection, immunosuppression, high parity, cigarette smoking, and use of oral contraceptives.³

Case Definition and Incidence Rules

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

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

Incidence rules:

For individuals who meet the case definition:

(continued on next page)

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

² Cervical Cancer. National Cancer Institute. Available at: <http://www.cancer.gov/cancertopics/types/cervical>. Accessed Nov 2022.

³ American Cancer Society. Cancer Facts & Figures 2023. Atlanta: American Cancer Society; 2023. <http://www.cancer.org/research/cancer-facts-statistics.html>. Accessed November 2022.



Case Definition and Incidence Rules *(continued)*

- For hospitalizations, the incidence date is considered the date of the first medical encounter that includes a case defining diagnosis of cervical cancer.
- For outpatient medical encounters, the incidence date is considered the first of the three encounters occurring *within* the 90-day period (*see Case Definition and Incidence Rule Rationale* below) that includes a case defining diagnosis of cervical cancer.
- An individual is considered an incident case *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
Cervical Cancer	<i>C53 (malignant neoplasm of cervix uteri)</i>	<i>180 (malignant neoplasm of cervix uteri)</i>
	- C53.0 (malignant neoplasm of endocervix)	- 180.0 (malignant neoplasm of endocervix)
	- C53.1 (malignant neoplasm of exocervix)	- 180.1 (malignant neoplasm of exocervix)
	- C53.8 (malignant neoplasm of overlapping sites of cervix uteri)	- 180.8 (malignant neoplasm of other specified sites of cervix)
	- C53.9 (malignant neoplasm of cervix uteri, unspecified)	- 180.9 (malignant neoplasm of cervix uteri, unspecified)

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

- Case finding criteria for this definition requires one hospitalization record with a case defining ICD9 or ICD10 code for cervical 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 cervical cancer is allowed in the *second* diagnostic position.
- The case finding criterion of *three or more outpatient medical encounters, within a 90-day period*, 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 woman has four cervical 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 cervical cancer would have second and third encounters within that interval.
- For the purposes of counting new incident cases, AFHSD 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.

Code Set Determination and Rationale

- This case definition is designed to capture cases of *invasive* cervical cancer only. Cervical dysplasia, carcinoma in situ of the cervix-also known as cervical intraepithelial neoplasia (CIN)- and Pap smear results with abnormal squamous epithelial lesions are not included in the case definition. Therefore, Pap smear results of the cervix with the following codes are not part of the code set in this case definition.

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



Condition	ICD-10-CM Codes	ICD-9-CM Codes
Carcinoma <i>in-situ</i> of cervix	D06 (carcinoma in situ of cervix uteri)	233.1 (carcinoma in situ of cervix uteri; includes severe dysplasia of the cervix/CIN III) and cervical intraepithelial glandular neoplasia, grade III)
	- D06.0 (carcinoma in situ of endocervix)	
	- D06.1 (carcinoma in situ of exocervix)	
	- DOC.7 (carcinoma in situ of other parts of cervix)	
	- D06.9 (carcinoma in situ of cervix, unspecified)	
Cervical dysplasia	N87.0 (<i>dysplasia of cervix uteri</i>)	622.1 (dysplasia of cervix)
	- N87.0 (<i>mild</i> cervical dysplasia)	- 622.10 (dysplasia of cervix, <i>unspecified</i>)
	- N87.1 (<i>moderate</i> cervical dysplasia)	- 622.11 (<i>mild</i> dysplasia of cervix/CIN I)
	- N87.9 (dysplasia of cervix uteri, <i>unspecified</i>)	- 622.12 (<i>moderate</i> dysplasia of cervix/CIN II)
Abnormal Pap smear findings	R87.61 (<i>abnormal cytologic findings in specimens from cervix uteri</i>)	-
	- R87.610 (atypical squamous cells of undetermined significance (ASC-US) on cytologic smear of cervix)	- 795.01 (atypical squamous cells of undetermined significance (ASC-US))
	- R87.611 (atypical squamous cells cannot exclude high grade squamous intraepithelial lesion on cytologic smear of cervix)	- 795.02 (atypical squamous cells cannot exclude high grade squamous intraepithelial lesion (ASC-H))
	- R87.612 (low grade squamous intraepithelial lesion (LGSIL) on cytologic smear of cervix)	- 795.03 (low grade squamous intraepithelial lesion (LGSIL))
	- R87.613 (high grade squamous intraepithelial lesion (HGSIL) on cytologic smear of cervix)	- 795.04 (high grade squamous intraepithelial lesion (HGSIL))
	- R87.614 (cytologic evidence of malignancy on smear of cervix)	- 795.06 (cytologic evidence of malignancy without histologic confirmation)
Other Pap smear findings	- R87.615 (unsatisfactory cytologic smear of cervix)	- 794.08 (unsatisfactory cervical cytology smear)
	- R87.616 (satisfactory cervical smear but lacking transformation zone)	- 795.07 (satisfactory cervical smear but lacking transformation zone)
	- R87.618 (other abnormal cytologic findings on specimens from cervix uteri)	- 795.4 (other nonspecific abnormal histological findings)
	- R87.619 (unspecified abnormal cytological findings in specimens from cervix uteri)	



Reports

The AFHSD reports on cervical cancer in the following reports:

- Periodic *Medical Surveillance Monthly Report (MSMR)* articles on cancers and cancer-related deaths.

Review

Nov 2022	Case definition reviewed and updated by the AFHSD Surveillance Methods and Standards (SMS) working group
Jul 2019	Case definition reviewed and updated by the AFHSD SMS working group.
Sep 2015	Case definition reviewed and updated by the Armed Forces Health Surveillance Branch (AFHSB) SMS working group.
Apr 2013	Case definition reviewed and adopted by the AFHSC SMS working group.
Jun 2012	Case definition developed by the Armed Forces Health Surveillance Center (AFHSC), ASDHA, USAPHC and the United States Military Cancer Institute.

Comments

None

