

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 Branch (AFHSB) 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 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-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 cervical 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 cervical 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 Cervical Cancer. National Cancer Institute. Available at: <http://www.cancer.gov/cancertopics/types/cervical>. Accessed July 2019.

³ American Cancer Society. Cancer Facts & Figures 2019. Atlanta: American Cancer Society; 2019. <https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2019.html>. Accessed July 2019.



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 cervical 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
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. 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

- 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*, with a case defining diagnosis of cervical 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 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, 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.

Code Set Determination and Rationale

- This case definition is designed to capture cases of *invasive* cervical cancer only. Carcinoma in situ of the cervix, cervical dysplasia, also known as cervical intraepithelial neoplasia (CIN) and Pap smear results with abnormal squamous epithelial lesions are not included in the case definition. Thus, the following codes are not part of the code set.
 - ICD9 code 233.1 (carcinoma in situ of cervix uteri; includes severe dysplasia of the cervix/CIN III) and cervical intraepithelial glandular neoplasia, grade III) / ICD10 code D06.9 (carcinoma in situ of cervix, unspecified)

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.



- Codes ICD9 622.1 (dysplasia of cervix), ICD9 622.10 (dysplasia of cervix, unspecified) / ICD10 N87.9 (dysplasia of cervix uteri, unspecified), ICD9 622.11 (mild dysplasia of cervix/CIN I) / ICD10 N87.0 (mild cervical dysplasia) and 622.12 (moderate dysplasia of cervix/CIN II) / N87.1 (moderate cervical dysplasia).
- Papanicolaou smear of the cervix with codes ICD9 795.01 (atypical squamous cells of undetermined significance (ASC-US) / ICD10 R87.610 (atypical squamous cells of undetermined significance on cytologic smear of cervix (ASC-US), ICD9 795.02 (atypical squamous cells cannot exclude high grade squamous intraepithelial lesion (ASC-H) / ICD10 R87.611 (atypical squamous cells cannot exclude high grade squamous intraepithelial lesion on cytologic smear of cervix, ICD9 795.03 (low grade squamous intraepithelial lesion (LGSIL) / ICD10 R87.612 (low grade squamous intraepithelial lesion on cytologic smear of cervix (LGSIL), ICD9 795.04 (high grade squamous intraepithelial lesion (HGSIL) / ICD10 R87.613 (high grade squamous intraepithelial lesion on cytologic smear of cervix (HGSIL), and ICD9 795.06 (cytologic evidence of malignancy without histologic confirmation) / ICD10 (cytologic evidence of malignancy on smear of cervix).

Reports

AFHSB reports on cervical cancer in the following reports:

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

Review

Jul 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.
Apr 2013	Case definition reviewed and adopted 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

