UTERINE CANCER

Includes invasive cancer only. Does not include carcinoma in situ or metastatic cancer. For "Cervical Cancer," see specific case definition.

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] The case definition uses the "standard" AFHSD oncology case definition.

Clinical Description

There are two types of uterine cancer, endometrial cancer and uterine sarcoma. Endometrial cancer develops in the endometrium, typically after menopause, and accounts for approximately 95% of all cases of uterine cancer. Uterine sarcomas develop in the myometrium and are rare. Common symptoms include intermenstrual vaginal bleeding, heavy or prolonged periods and lower abdominal pain. After menopause, any vaginal bleeding or spotting requires evaluation to rule out malignancy. Evaluation includes imaging studies, (e.g., transvaginal ultrasound), endometrial biopsy, dilation and curettage and assessment of tumor markers.[2] If the cancer has not spread beyond the uterus, standard treatment is total hysterectomy; if the cancer has spread, adjuvant treatment may include radiation and chemotherapy. As most uterine malignancies present at an early stage, prognosis is good–5-year survival 95%. Conditions associated with exogenous estrogen increase risk of disease, (e.g., Tamoxifen use, hormone replacement therapy, obesity and polycystic ovarian syndrome with anovulatory cycles).[3]

Case Definition and Incidence Rules *(2024-present)*

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

- *One hospitalization* with a case defining diagnosis of uterine cancer (see ICD9 and ICD10 code lists below) in the *first* diagnostic position; or
- *One hospitalization with a procedure code* indicating radiotherapy, chemotherapy, or immunotherapy treatment (see ICD9 and ICD10 code lists below) in the *first* diagnostic position; AND a case defining diagnosis of uterine 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 a case defining diagnosis of uterine 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. *MSMR* 2016; 23(7): 23-31.

[2] American Cancer Society. Endometrial Cancer. Available at: https://www.cancer.org/cancer/types/endometrial-cancer.html. Accessed March 2025.

[3] Jing Wang Chiang, M. (2024, September 30). *Uterine cancer*. Practice Essentials, Background, Pathophysiology. https://emedicine.medscape.com/article/258148-overview?form=fpf. Accessed March 2025.

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 outpatient medical encounter that includes a case defining diagnosis of uterine cancer.
- An individual is considered an incident case *once per lifetime.*

Exclusions:

- *Optional*: Individuals with hysterectomy (see *Case Definition and Incidence Rule Rationale*)

Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Uterine Cancer	*C54 (malignant neoplasm of corpus uteri…)*	*182 (malignant neoplasm of body of uterus)*
	C54.0 (of isthmus uteri)	182.0 (malignant neoplasm of corpus uteri, except isthmus) 182.1 (malignant neoplasm of isthmus) 182.8 (malignant neoplasm of other specified sites of body of uterus)
	C54.1 (of endometrium)	
	C54.2 (of myometrium)	
	C56.3 (of fundus uteri)	
	C54.8 (of overlapping sites of corpus uteri)	
	C54.9 (of corpus uteri, unspecified)	
	C55 (malignant neoplasm of uterus, part unspecified)	*179 (malignant neoplasm of uterus, part unspecified)*

Procedures	ICD-10-CM Codes	ICD-9-CM Codes
Related treatment procedures *(Radiotherapy, chemotherapy, immunotherapy)*	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)

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	- Z51.12 (encounter for antineoplastic immunotherapy)	- V58.12 (encounter for antineoplastic immunotherapy)

Development and Revisions

- In 2024, the Defense Health Agency (DHA) Health Surveillance & Epidemiology (HSE) cancer surveillance Sub Working Group (SubWG) evaluated and expanded the list of cancers in the AFHSD cancer report to include breast (female), bladder, brain, cervical, colorectal, kidney (renal), leukemia, liver (hepatic), lung/bronchial, non-Hodgkin lymphoma, ovarian, pancreatic, prostate, stomach (gastric) and testicular cancer.

- In a 2019 *Monthly Surveillance Medical Report (MSMR)* article, analysis of the AFHSD standard oncology case revealed the definition had a high positive predictive value (PPV) for capturing cases of common cancers, (e.g., breast, prostate, testicular), and a low-to-moderate PPV for rarer cancers, (e.g., gallbladder, intestinal, laryngeal). Analyses also revealed the case definition was less sensitive for identifying cancers of the brain and nervous system, lung and bronchus, bones and joints, and liver (PPV$\leq$ 50 percent); these cases often represented metastases rather than true incident cases. While the broad application of a single case definition may affect the sensitivity and specificity in varying ways for the individual cancers, the PPV for all the cancers included in the report are >70 percent, and most have a PPV $\geq$ 90 percent.[4]

- The standard AFHSD oncology case definition was originally developed in 2011 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 for a report on 10 different *invasive* cancers. The case definition was developed based on reviews of the ICD9 codes, the scientific literature and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- In the 2019 *MSMR* article, cases of uterine cancer identified using the standard AFHSD oncology case definition had a PPV of 80.0 percent [CI 51.9-95.7] among a subset of active component and retired officers.[4]

- The case finding criteria 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. Exploratory analysis of Defense Medical Surveillance System (DMSS) data revealed this criterion yielded optimal specificity.[5]

    - A period of 90 days allows for the likelihood that "true" cases of uterine cancer will have second and third encounters within that timeframe. The timeframe is based on the following standards of care: (1) following a biopsy of a clinically suspicious uterine lesion, the average time to obtain a pathology report and definitive diagnosis is 1-3 weeks; (2) individuals whose biopsy results are positive for uterine cancer are likely to have a follow-up visit for treatment within 4 weeks of a definitive diagnosis; and (3) individuals are likely to have follow-up visits to monitor clinical indicators of disease within the 90-day timeframe.[6]

[4] Webber, B, Rogers, A, Pathak, S, Robbins, A. Positive Predictive Value of an Algorithm Used for Cancer Surveillance in the U.S. Armed Forces. *MSMR* 2019; 26(12):18-23

[5] Detailed information on these analyses is available through AFHSD; reference DMSS Requests #R230308, #R230378 and #R240009.

[6] Breast cancer. National Comprehensive Cancer Network (NCCN) Guidelines Version 2.2023. https://www.nccn.org/guidelines/recently-published-guidelines; Accessed March 2025.

- For outpatient encounters, the incident date is considered the first of the three encounters occurring within the 90-day period, (e.g., if an individual has four uterine 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).

- To maintain consistency with the standard AFHSD methodology for surveillance of invasive cancers, AFHSD uses a *once per lifetime* incidence rule. The workgroup recognizes individuals, may be considered disease free after treatment or after an extended period of time, (e.g., 5 years), with no clinical evidence of disease. Individuals who develop a second primary tumor after being disease free could, theoretically, be counted as a new incident case. However, for surveillance of cancer using administrative, (i.e., billing), data, it is difficult to identify individuals who are disease free after treatment.

- The AFHSD does not exclude individuals who have had a hysterectomy; however, there may some benefit to incorporating this exclusion into the methodology. These individuals would contribute to the denominator of the rate, particularly among older age groups. Quantifying the number and percentage of women by age group that have a history of hysterectomy and comparing that group with the population of women with no history could help clarify the accuracy of the rate.

Code Set Determination and Rationale

- Procedure codes (ICD10 and CPT) indicating surgical treatment of individual cancers such as hysterectomy, mastectomy, prostatectomy, and other procedures unique to certain types of cancers are not included in the code set. While procedure codes may increase the specificity of case finding criteria in select circumstances, analyses can be labor intensive and the effort does not necessarily guarantee a better case definition, (i.e., the definition may still identify false positive cases).

- *Screening for disease* codes ICD10 Z12.xx / ICD9 V76.xx (encounter for screening for malignant neoplasms) are not included in the code set. Screening codes are used for "testing for disease or disease precursors in seemingly well individuals so that early detection and treatment can be provided for those who test positive for the disease, (e.g., screening mammogram)."[7] They would not be used for follow-up medical encounters of a specific disease.

- *Personal history of malignant neoplasms* (ICD10 Z85.xx) codes are not included in the code set. While these codes may be beneficial for identifying individuals with a history of cancer, analysis of administrative data reveal these codes lack the specificity to count incident cancer cases and are inconsistently used by providers. [8] Given these findings, the AFHSD does not use personal history codes to exclude prevalent cases, (i.e., individuals with a history of cancer), nor to identify individuals who are disease free after treatment.

  Personal history codes are intended to be used by providers for individuals who have a history of cancer *and* documented evidence in the medical record that the malignancy has been "excised or eradicated and all treatment is complete." They are not used for a "self-reported" history of

[7] ICD-10-CM Official Guidelines for Coding and Reporting. FY 2022–Updated April 1, 2022. (October 1, 2021-September 30, 2022. https://stacks.cdc.gov/view/cdc/126426. Accessed March 2025.

[8] Analysis performed by the Defense Centers of Public Health-Dayton. Encounters with at least one Z85.x code in any diagnostic position (dx1- dx20) were pulled from Comprehensive Ambulatory Professional Encounter Records (CAPER) and Standard Inpatient Data Records (SIDR) for all Tri-Service beneficiaries between October 2016 and March 2024. A total of 546,962 encounters were identified. Of these, 68,395 (13%) had at least one neoplasm diagnosis (ICD10 C00-D49). With administrative data, there is no way to determine if the neoplasm codes refer to a resolved malignancy or a new cancer diagnosis. Records with conjunction codes for follow-up (Z08), aftercare (Z51.[0.1] and screening (Z12) were queried: 420,236 (77%) had no conjunction codes in any diagnostic position suggesting providers use personal history codes independent of the purpose of the visit and potentially inconsistently.

malignancy, and they should be used in conjunction with ICD10 codes for follow-up visits (Z08- encounter for follow-up examination after completed treatment for a malignant neoplasm), aftercare visits (Z51.0 - encounter for antineoplastic radiation therapy; Z51.1- encounter for antineoplastic chemotherapy and immunotherapy), and screening visits (Z12 - encounter for screening for malignant neoplasms).[9]

Reports

The AFHSD reports on uterine cancer in the following reports:

- Periodic *MSMR* articles.

Review

Mar 2025	Case definition reviewed and adopted by the AFHSD Surveillance Methods and Standards (SMS) working group.
Nov 2024	Case definition developed by the DHA HSE cancer surveillance SubWG.

Comments

- *Invasive cancer*: The complete ICD10 code for all "malignant neoplasms of female genital organs" includes the following codes (C51-C58). The AFHSD has developed case definitions* for cervical cancer, uterine cancer and ovarian cancer.
  - C51.x Malignant neoplasm of vulva
  - C52.x Malignant neoplasm of vagina
  - C53.x Malignant neoplasm of cervix uteri*
  - C54.x Malignant neoplasm of corpus uteri*
  - C55.x Malignant neoplasm of uterus, part unspecified*
  - C56.x Malignant neoplasm of ovary*
  - C57.x Malignant neoplasm of other and unspecified female genital organs
  - C58 Malignant neoplasm of placenta

- *In situ cancer*: The complete code set for "carcinoma in situ of other and unspecified female genital organs" includes the following codes (D07.0-D07.39). The AFHSD uses the standard oncology case definition for surveillance of in situ cancers and is in the process of developing definitions for select in situ cancers.

  D07 Carcinoma in situ of other and unspecified genital organs
  - D07.0 Carcinoma in situ of endometrium
  - D07.1 Carcinoma in situ of vulva
  - D07.2 Carcinoma in situ of vagina
  - D07.3 Carcinoma in situ of other and unspecified female genital organs

[9] Bredehoeft, Emily. Clear Up Confusion as to When Cancer Becomes "History Of." American Academy of Professional Coders (AAPC). https://www.aapc.com/blog/40016-clear-up-confusion-as-to-when-cancer-becomes-history-of/. Accessed March 2025.

- D07.30 Carcinoma in situ of unspecified female genital organs
- D07.39 Carcinoma in situ of other female genital organs