MELANOMA IN SITU; SKIN

Includes melanoma in situ only. For invasive "Malignant Melanoma; Skin" and "Non-Melanoma Skin Cancer," see specific case definitions.

Background

This case definition was developed by the Armed Forces Health Surveillance Division (AFHSD) for the purpose of epidemiological surveillance of melanoma in situ. The case definition uses the "standard" AFHSD oncology case definition.

Clinical Description

Melanoma in situ, also known as stage 0 melanoma, refers to malignant tumor cells that are confined to the epidermis (upper layer of skin). The cancer cells have not invaded the dermis (second layer of skin) and there is no evidence of lymph node spread or metastasis. Stage 0 melanoma is not considered an invasive malignant melanoma, defined by stages I- IV. Melanoma in situ typically presents as a flat, asymmetric lesion with irregular boarders on a sun-exposed area of the body. While the lesion is highly curable, (i.e., 5-year survival rates of 98.4 %), it is considered a potential precursor to invasive melanoma and may be associated with the development of certain primary cancers.[1] For most lesions, surgical excision is the treatment of choice. Nonsurgical treatment with radiation therapy or topical imiquimod may be used in select patients with positive margins after surgery, or in whom further resection is not feasible.[2]

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

For surveillance purposes, a case of melanoma in situ is defined as:

- *One hospitalization* with a case defining diagnosis of melanoma in situ (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 melanoma in situ (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 melanoma in situ (see ICD9 and ICD10 code lists below) in the *first or second* diagnostic position.

Incidence rules:

For individuals who meet the case definition:

- For hospitalizations, the incidence date is considered the date of the first medical encounter that includes a case defining diagnosis of melanoma in situ.

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[1] American Cancer Society. Melanoma Skin Cancer. https://www.cancer.org/cancer/types/melanoma-skin-cancer.html. Accessed February 2025.

[2] Dermatology consultants, Defense Health Agency, August 2023.

Case Definition and Incidence Rules *(continued)*

- 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
Melanoma *in situ*	*D03 (melanoma in situ)*	*Translated ICD9 codes not specific to melanoma in situ. Code set applicable after October 1, 2015, only.*
	D03.0 (melanoma in situ of lip)	
	D03.1 (melanoma in situ of eyelid, including canthus)	
	- D03.10 (melanoma in situ of *unspecified* eyelid, including canthus)	
	- D03.11 (melanoma in situ of *right* eyelid, including canthus)	
	- D03.111 (melanoma in situ of right *upper* eyelid, including canthus)	
	- D03.112 (melanoma in situ of right *lower* eyelid, including canthus)	
	- D03.12 (melanoma in situ of *left* eyelid, including canthus)	
	- D03.121 (melanoma in situ of left *upper* eyelid, including canthus)	
	- D03.122 (melanoma in situ of left *lower* eyelid, including canthus)	
	D03.2 (melanoma in situ of ear and external auricular canal)	
	- D03.20 (melanoma in situ of unspecified ear and external auricular canal)	
	- D03.21 (melanoma in situ of *right* ear and external auricular canal)	
	- D03.22 (melanoma in situ of *left* ear and external auricular canal)	

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	D03.3 (melanoma in situ of other and unspecified parts of face)	*Translated ICD9 codes not specific to melanoma in situ. Code set applicable after October 1, 2015, only.*
	- D03.30 (melanoma in situ of unspecified part of face)	
	- D03.39 (melanoma in situ of other parts of face)	
	D03.4 (melanoma in situ of scalp and neck)	
	D03.5 (melanoma in situ of trunk)	
	- D03.51 (melanoma in situ of *anal* skin)	
	- D03.52 (melanoma in situ of *breast*, skin, soft tissue)	
	- D03.59 (melanoma in situ of *other* part of trunk)	
	D03.6 (melanoma in situ of unspecified upper limb, including shoulder)	
	- D03.60 (melanoma in situ of *unspecified* upper limb, including shoulder)	
	- D03.61 (melanoma in situ of *right* upper limb, including shoulder)	
	- D03.62 (melanoma in situ of *left* upper limb, including shoulder)	
	D03.7 (melanoma in situ of lower limb, including hip)	
	- D03.70 (melanoma in situ of *unspecified* lower limb, including hip)	
	- D03.71 (melanoma in situ of *right* lower limb, including hip)	
	- D03.72 (melanoma in situ of *left* lower limb, including hip)	
	D03.8 (melanoma in situ of other sites)	
	D03.9 (melanoma in situ, 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

- This case definition was developed in May 2024 by the Defense Health Agency (DHA) Health Surveillance & Epidemiology (HSE) cancer surveillance Sub Working Group (SubWG). The case definition and was developed based on reviews of the ICD10 codes, the scientific literature and previous AFHSD analyses.

Standard Oncology Definition

- In 2024, the DHA HSE cancer surveillance 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 *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 were >70 percent, and most had a PPV $\geq$ 90 percent.[3]

- In September of 2015 the standard oncology case definition was updated to include ICD10 codes.

- 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.

Case Definition and Incidence Rule Rationale

- In May 2024, the DHA HSE cancer surveillance SubWG, in consultation with oncology experts at the DHA, adopted the standard AFHSD oncology case definition for surveillance of all in situ cancers. The determination was based on the following exploratory analyses and chart reviews of melanoma in situ and ductal carcinoma in situ:

    - The workgroup explored using a *single inpatient or outpatient medical encounter* to define a case. The proposed criteria was based on the following assumptions: (1) in situ cancers are a histologic diagnosis based on a core needle biopsy or an excisional biopsy and specific pathological criteria; (2) most clinicians would not enter a specific in situ diagnosis in the electronic health record (EHR) without pathologic confirmation of a tissue sample; and (3) when a definitive diagnosis is pending or unknown, clinicians document suspicious lesions with ICD10 codes D48.5 (neoplasm, uncertain behavior of skin) and D49.2 (neoplasm of unspecified behavior of bone, soft tissue and skin) (see *Comments* below).

[3] 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

- Analyses demonstrated the criteria did identify in situ cases; however, examination of a random sample of 20 cases of intraductal carcinoma situ (ICD10 D05.1) via chart review revealed 8 (40%) cases were actually invasive cancer, 10 50%) cases had pathologic evidence of both invasive and in situ disease, equating to a total of 18 (90%) of the cases included a diagnosis of invasive cancer. Given in situ cancers are commonly miscategorized using ICD code-based administrative data and to avoid inadvertently capturing invasive cancers, the workgroup adopted the standard oncology case finding criteria of *one hospitalization or three outpatient* encounters to define a case.[4]

- Analysis of melanoma in situ and ductal carcinoma in situ using the standard AFHSD oncology definition showed most cases met the case finding criteria in the first diagnostic position. There were no cases that met the case finding criteria requiring a procedure code in the first diagnostic position and a case defining diagnostic code in the second position. This finding is unlikely to impact case counts and likely indicates the procedures used to identify cases in the standard oncology case definition are not commonly used to treat ductal carcinoma in situ.

- The workgroup considered adopting the case finding criteria used for non-melanoma skin cancer, (i.e*., one hospitalization in any diagnostic position or two or more outpatient encounters occurring within 90 days*), for in situ cancers. Given chart reviews of in situ cancer frequently showed invasive cancer, the workgroup determined the standard oncology definition would be best suited to identify true cases of disease.

- 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 melanoma in situ 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 skin lesion, the average time to obtain a pathology report and definitive diagnosis is 1-4 weeks; (2) individuals whose biopsy results are positive for melanoma in situ are likely to have a follow-up visit for wide excision within two 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. A typical follow-up schedule for most melanoma in situ lesions is every 3-6 months for 2 years, and annually, thereafter.[6]

  - The diagnoses and associated ICD10 codes for the three or more outpatient medical encounters *are not required to reference the same body region*. Analyses of the data revealed the requirement was complicated by the frequent use of the nonspecific codes ICD10 D03.8 (melanoma in situ of other sites) and D03.9 (melanoma in situ, unspecified), making it difficult to assign a tumor to a particular body region.

  - 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 melanoma in situ codes on

[4] Detailed information on these analyses is available through AFHSD; reference DMSS Request #R240023. In brief, data was pulled for the active component between October 2015 and December 2022. A case was defined as a single inpatient or outpatient medical encounter, with a diagnosis of intraductal carcinoma (D05.1*), in any diagnostic position. There were 3,492 encounters among 399 individuals. Of these, only 128 had a single encounter and most were outpatient encounters.

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

[6] Melanoma, Cutaneous. National Comprehensive Cancer Network (NCCN) Guidelines Version 2.2023. https://www.nccn.org/guidelines/recently-published-guidelines; Accessed February 2025.

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, AFHSC 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.

- Individuals who have, or develop over time, a second primary melanoma in situ in the same, or a different, anatomical region of the body are only counted once using this definition. While both lesions are considered primary tumors, for surveillance of in situ cancer, AFHSD counts cases (unique individuals), not individual tumors. Investigators interested in capturing the incidence of distinct primary tumors may want to modify the case finding criteria and consider utilizing different data sources such as pathology data or cancer registry data.

- Individuals with a prior, case-defining, incident diagnosis of malignant melanoma are *not* excluded from this definition. The AFHSD counts the "first-ever" occurrence of each cancer type separately. This methodology ensures rates and trends over time accurately reflect the condition of interest by eliminating the potentially confounding effect of disease trends of excluded conditions, (i.e., ensures melanoma in situ rates are not dependent upon malignant melanoma rates and vice versa).

Code Set Determination and Rationale

- *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 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),

[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 February 25.

[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.

aftercare visits (Z51.0 - encounter for antineoplastic radiation therapy; Z51.1- encounter for antineoplastic chemotherapy and immunotherapy

Reports

The AFHSD reports on melanoma in situ in the following reports:

- Periodic *MSMR* articles.

Review

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

Comments

Coding Skin Lesions When Definitive Diagnosis is Pending or Unknown

For procedures like biopsies or shave removals that require medical attention, ICD10 codes D48.5 and D49.2 are often used incorrectly and are often confused. For example:

- When a provider performs a small punch biopsy and sends it off to pathology, the biller submits the claim with a working diagnosis of D49.2 (neoplasm of unspecified behavior of bone, soft tissue, and skin). In this case, based on all known clinical knowledge, the provider is *unable to specify* the type of lesion. Therefore, it's *unspecified*, not *uncertain*. While it is generally considered *inappropriate* to use "unspecified" codes when more appropriate choices are available, this is an *exception*. Based on all clinical knowledge at the time of the encounter, the provider is unable to specify the type of lesion; therefore, D49.2 is acceptable. *"When a diagnosis of malignancy has not yet been established at the time the biopsy procedure was performed, the correct diagnosis code to list would most likely be D49.2 (neoplasm of unspecified behavior, bone soft tissue, and skin).*

- When a provider excises a suspicious lesion and sends it off to pathology. Suspecting it might be malignant and knowing that benign vs. malignant affects the CPT code billed, the practice holds the claim and waits for pathology. However, the pathologist is unable to determine the nature of the type of lesion. The returned diagnosis from pathology is D48.5 (neoplasm, uncertain behavior of skin). In this case neither the dermatologist or the pathologist can determine the type or nature of the lesion. They aren't certain what it is. In this case the use of an uncertain code is acceptable.[9]

[9] Elizey Coding Solutions, Inc. Dermatology News and Articles. D48.5 versus D49.2. https://www.ellzeycodingsolutions.com/kb_results.asp?ID=7. Accessed February 2025.