

NON-MELANOMA SKIN CANCER

Includes basal cell carcinoma, squamous cell carcinoma, Merkel cell carcinoma and carcinoma in situ of the skin. For “Malignant Melanoma” and “Melanoma In Situ,” 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 *non-melanoma* skin cancer (NMSC). For the purposes of this case definition, NMSC includes “other and unspecified malignant neoplasms of the skin,” Merkel cell carcinoma and “carcinoma in situ of skin.” This case definition is specific for NMSC and differs from the standard AFHSD oncology case definition used for surveillance of invasive and in situ cancers.

Clinical Description

Non-melanoma skin cancers are the most common malignancies in the U.S.¹ About 80% of NMSCs are basal cell carcinomas (BCC) and 20% squamous cell carcinomas (SCC). Other NMSCs such as Merkel cell carcinoma, sebaceous carcinoma, and apocrine adenocarcinoma are rare and account for <1%.² Non-melanoma skin cancer most often develops on areas of skin regularly exposed to sun, such as face, ears, hands, shoulders, upper chest and back. Signs of NMSC include skin changes, a sore that does not heal, ulceration, discoloration, and changes in size, shape, and color of existing moles. Risk factors include light skin tone, light-colored eyes and hair and exposure to solar ultraviolet (UV) radiation.³ A biopsy is usually done to confirm the diagnosis along with complete removal of the cancerous lesion.⁴ The risk of a subsequent NMSC has been shown to be as high as 50% within a 10-year period.⁵

Case Definition and Incidence Rules (December 2016-present)

For surveillance purposes, a case of NMSC is defined as:

- *One hospitalization* with a case defining diagnosis of NMSC (see ICD9 and ICD10 code lists below) in *any* diagnostic position; or
- *Two or more outpatient medical encounters*, occurring *within a 90-day period*, with a case defining diagnosis of NMSC (see ICD9 and ICD10 code lists below) in *any* diagnostic position. To be classified as a case:

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¹ Rogers HW, Weinstock MA, Feldman SR, Coldiron BM. Incidence estimate of nonmelanoma skin cancer (keratinocyte carcinomas) in the U.S. population, 2012. *JAMA Dermatol.* 2015;151(10):1081-86.

² Ciążyńska, M., Kamińska-Winciorek, G., Lange, D. *et al.* The incidence and clinical analysis of non-melanoma skin cancer. *Sci Rep* 11, 4337 (2021). <https://doi.org/10.1038/s41598-021-83502-8>. Accessed February 2025.

³ Lee, T., Taubman, S, Williams, V. Armed Forces Health Surveillance Division. Incident Diagnosis of Non-Melanoma Skin Cancer, Active Component, U.S. Armed Forces, 2005-2014. *MSMR.* 2016; 23(12): 2-6.

⁴ Cancer Facts and Figures 2023. American Cancer Society. <https://www.cancer.org/cancer/types/basal-and-squamous-cell-skin-cancer.html>. Accessed February 2025.

⁵ Richmond-Sinclair NM, Pandeya N, Ware RS, et al. Incidence of basal cell carcinoma multiplicity and detailed anatomic distribution: longitudinal study of an Australian population. *J Invest Dermatol.* 2009;129(2):323-328.



Case Definition and Incidence Rules (continued)

- Both diagnostic codes must refer to the same body location (e.g., lip); or
- The two diagnostic codes include one site-specific code (e.g., lip), and one “other” or “unspecified” site code, AND both diagnostic codes are in the same category, (i.e., “other and unspecified malignant neoplasm of skin,” Merkel cell carcinoma or “carcinoma in situ of skin”).

Incidence rules:

For individuals who meet the case definition:

- An individual may be counted as an incident case multiple times during the surveillance period if the case defining diagnoses are coded for different body locations and the diagnosis for each location satisfies the case definition.
- For the same body location, an individual is considered a new incident case if *at least 365 days* have passed since the last medical encounter with a case defining diagnosis of NMSC or carcinoma in situ of the skin (see “gap” rule explanation below).
- The incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes a case defining diagnosis of NMSC.

Exclusions:

- None

Codes

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

Other and Unspecified Malignant Neoplasms; Includes Basal Cell and Squamous Cell Carcinoma

Condition	ICD-10-CM Codes	ICD-9-CM Codes
<i>C44 (other and unspecified malignant neoplasm of skin)</i>		<i>173 (other and unspecified malignant neoplasm of skin)</i>
Skin of lip	<i>C44.0 (other and unspecified malignant neoplasm of skin of lip)</i>	<i>173.0 (other and unspecified malignant neoplasm of skin of lip)</i>
	<i>C44.00 (unspecified malignant neoplasm of skin of lip)</i>	<i>173.00 (unspecified malignant neoplasm of skin of lip)</i>
	<i>C44.01 (basal cell carcinoma of skin of lip)</i>	<i>173.01 (basal cell carcinoma of skin of lip)</i>
	<i>C44.02 (squamous cell carcinoma of skin of lip)</i>	<i>173.02 (squamous cell carcinoma of skin of lip)</i>



	C44.09 (other specified malignant neoplasm of skin of lip)	173.09 (other specified malignant neoplasm of skin of lip)
Eyelid, including canthus	<p><i>C44.1 (other and unspecified malignant neoplasm of skin of eyelid, including canthus)</i></p> <p>C44.10 (unspecified malignant neoplasm of eyelid, including canthus...)</p> <ul style="list-style-type: none"> - C44.101 (<i>unspecified</i> eyelid, including canthus) - C44.102 (<i>right</i> eyelid, including canthus...) - C44.1021 (<i>right upper</i> eyelid, including canthus); <i>new 2019</i> - C44.1022 (<i>right lower</i> eyelid, including canthus); <i>new 2019</i> - C44.109 (<i>left</i> eyelid, including canthus...) - C44.1091 (<i>left upper</i> eyelid, including canthus); <i>new 2019</i> - C44.1092 (<i>left lower</i> eyelid, including canthus); <i>new 2019</i> 	<p><i>173.1 (other and unspecified malignant neoplasm of skin of eyelid, including canthus)</i></p> <p>- 173.10 (unspecified malignant neoplasm of skin of eyelid, including canthus)</p>
	<p>C44.11 (basal cell carcinoma of skin of eyelid, including canthus...)</p> <ul style="list-style-type: none"> - C44.111 (<i>unspecified</i> eyelid, including canthus) - C44.112 (<i>right</i> eyelid, including canthus...) - C44.1121 (<i>right upper</i> eyelid, including canthus); <i>new 2019</i> - C44.1122 (<i>right lower</i> eyelid, including canthus); <i>new 2019</i> - C44.119 (<i>left</i> eyelid, including canthus...) - C44.1191 (<i>left upper</i> eyelid, including canthus); <i>new 2019</i> - C44.1192 (<i>left lower</i> eyelid, including canthus); <i>new 2019</i> 	<p>- 173.11 (basal cell carcinoma of skin of eyelid, including canthus)</p>
	<p>C44.12 (squamous cell carcinoma of eyelid, including canthus...)</p> <ul style="list-style-type: none"> - C44.121 (<i>unspecified</i> eyelid, including canthus) - C44.122 (<i>right</i> eyelid, including canthus...) - C44.1221 (<i>right upper</i> eyelid, including canthus); <i>new 2019</i> 	<p>- 173.12 (squamous cell carcinoma of eyelid, including canthus)</p>

	<ul style="list-style-type: none"> - C44.1222 (right <i>lower</i> eyelid, including canthus); <i>new 2019</i> - C44.129 (<i>left</i> eyelid, including canthus...) - C44.1291 (<i>left upper</i> eyelid, including canthus); <i>new 2019</i> - C44.1292 (<i>left lower</i> eyelid, including canthus); <i>new 2019</i> 	
	<p>C44.13 (sebaceous cell carcinoma of eyelid, including canthus...); <i>new 2019</i></p> <ul style="list-style-type: none"> - C44.131 (<i>unspecified</i> eyelid, including canthus) - C44.132 (<i>right</i> eyelid, including canthus...) - C44.1321 (<i>right upper</i> eyelid, including canthus) - C44.1322 (<i>right lower</i> eyelid, including canthus) - C44.139 (<i>left</i> eyelid, including canthus...) - C44.1391 (<i>left upper</i> eyelid, including canthus) - C44.1392 (<i>left lower</i> eyelid, including canthus) 	<p><i>No data available to convert ICD10 codes added after 2018.</i></p>
	<p>C44.19 (other specified malignant neoplasm of eyelid, including canthus...)</p> <ul style="list-style-type: none"> - C44.191 (<i>unspecified</i> eyelid, including canthus) - C44.192 (<i>right</i> eyelid, including canthus) - C44.1921 (<i>right upper</i> eyelid, including canthus); <i>new 2019</i> - C44.1922 (<i>right lower</i> eyelid, including canthus); <i>new 2019</i> - C44.199 (<i>left</i> eyelid, including canthus...) - C44.1991 (<i>left upper</i> eyelid, including canthus); <i>new 2019</i> - C44.1992 (<i>left lower</i> eyelid, including canthus); <i>new 2019</i> 	<ul style="list-style-type: none"> - 173.19 (other specified malignant neoplasm of eyelid, including canthus)
Ear and external auricular canal	<p>C44.2 (<i>other and unspecified malignant neoplasm of skin of ear and external auricular canal</i>)</p> <p>C44.20 (<i>unspecified malignant neoplasm of skin of ear and external auricular canal...</i>)</p>	<p>173.2 (<i>other and unspecified malignant neoplasm of skin of ear and external auditory canal</i>)</p>

	<ul style="list-style-type: none"> - C44.201 (<i>unspecified</i> ear and external auricular canal) - C44.202 (<i>right</i> ear and external auricular canal) - C44.209 (<i>left</i> ear and external auricular canal) 	<ul style="list-style-type: none"> - 173.20 (unspecified malignant neoplasm of skin of ear and external auditory canal)
	<p>C44.21 (basal cell carcinoma of skin of ear and external auricular canal...)</p> <ul style="list-style-type: none"> - C44.211 (<i>unspecified</i> ear and external auricular canal) - C44.212 (<i>right</i> ear and external auricular canal) - C44.219 (<i>left</i> ear and external auricular canal) 	<ul style="list-style-type: none"> - 173.21 (basal cell carcinoma of skin of ear and external auditory canal)
	<p>C44.22 (squamous cell carcinoma of skin of ear and external auricular canal...)</p> <ul style="list-style-type: none"> - C44.221 (<i>unspecified</i> ear and external auricular canal) - C44.222 (<i>right</i> ear and external auricular canal) - C44.229 (<i>left</i> ear and external auricular canal) 	<ul style="list-style-type: none"> - 173.22 (squamous cell carcinoma of skin of ear and external auditory canal)
	<p>C44.29 (other specified malignant neoplasm of skin of ear and external auricular canal...)</p> <ul style="list-style-type: none"> - C44.291 (<i>unspecified</i> ear and external auricular canal) - C44.292 (<i>right</i> ear and external auricular canal) - C44.299 (<i>left</i> ear and external auricular canal) 	<ul style="list-style-type: none"> - 173.29 (other specified malignant neoplasm of skin of ear and external auditory canal)
Skin of other and unspecified parts of face	<p><i>C44.3 (other and unspecified malignant neoplasm of skin and unspecified parts of face)</i></p>	<p><i>173.3 (other and unspecified malignant neoplasm of skin of other and unspecified parts of face)</i></p>
	<p>C44.30 (unspecified malignant neoplasm of skin of other and unspecified parts of face...)</p> <ul style="list-style-type: none"> - C44.300 (unspecified malignant neoplasm of skin of <i>unspecified</i> parts of face) - C44.301 (unspecified malignant neoplasm of skin of <i>nose</i>) - C44.309 (unspecified malignant neoplasm of skin of <i>other</i> parts of face) 	<ul style="list-style-type: none"> - 173.30 (unspecified malignant neoplasm of skin of other and unspecified parts of face)
	<p>C44.31 (basal cell carcinoma of skin of other and unspecified parts of face ...)</p>	

	<ul style="list-style-type: none"> - C44.310 (basal cell carcinoma of skin of <i>unspecified</i> parts of face) - C44.311 (basal cell carcinoma of skin of <i>nose</i>) - C44.319 (basal cell carcinoma of skin of <i>other</i> parts of face) 	<ul style="list-style-type: none"> - 173.31 (basal cell carcinoma of skin of <i>other and unspecified</i> parts of face)
	<p>C44.32 (squamous cell carcinoma of skin of <i>other and unspecified</i> parts of face ...)</p> <ul style="list-style-type: none"> - C44.320 (squamous cell carcinoma of skin of <i>unspecified</i> parts of face) - C44.321 (squamous cell carcinoma of skin of <i>nose</i>) - C44.329 (squamous cell carcinoma of skin of <i>other</i> parts of face) 	<ul style="list-style-type: none"> - 173.32 (squamous cell carcinoma of skin of <i>other and unspecified</i> parts of face)
	<p>C44.39 (other <i>specified</i> malignant neoplasm of skin of <i>other and unspecified</i> parts of face...)</p> <ul style="list-style-type: none"> - C44.390 (other specified malignant neoplasm of skin of <i>unspecified</i> parts of face) - C44.391 (other specified malignant neoplasm of skin of <i>nose</i>) - C44.399 (other specified malignant neoplasm of skin of <i>other</i> parts of face) 	<ul style="list-style-type: none"> - 173.39 (other specified malignant neoplasm of skin of <i>other and unspecified</i> parts of face)
Skin of scalp and neck	<p><i>C44.4 (other and unspecified malignant neoplasm of skin of scalp and neck)</i></p> <ul style="list-style-type: none"> - C44.40 (unspecified malignant neoplasm of skin of scalp and neck) - C44.41 (basal cell carcinoma of skin of scalp and neck) - C44.42 (squamous cell carcinoma of skin of scalp and neck) - C44.49 (other specified malignant neoplasm of skin of scalp and neck) 	<p><i>173.4 (other and unspecified malignant neoplasm of scalp and skin of neck)</i></p> <ul style="list-style-type: none"> - 173.40 (unspecified malignant neoplasm of scalp and skin of neck) - 173.41 (basal cell carcinoma of scalp and skin of neck) - 173.42 (squamous cell carcinoma of scalp and skin of neck) - 173.49 (other specified malignant neoplasm of scalp and skin of neck)
Skin of trunk	<p><i>C44.5 (other and unspecified malignant neoplasm of skin of trunk)</i></p> <ul style="list-style-type: none"> - C44.50 (unspecified malignant neoplasm of skin of trunk) - C44.500 (unspecified malignant neoplasm of <i>anal</i> skin) - C44.501 (unspecified malignant neoplasm of skin of <i>breast</i>) 	<p><i>173.5 (other and unspecified malignant neoplasm of skin of trunk, except scrotum)</i></p> <ul style="list-style-type: none"> - 173.50 (unspecified malignant neoplasm of skin of trunk, except scrotum)



	<ul style="list-style-type: none"> - C44.509 (unspecified malignant neoplasm of skin of <i>other</i> part of trunk) 	
	<ul style="list-style-type: none"> - C44.51 (basal cell carcinoma of skin of trunk) 	<ul style="list-style-type: none"> - 173.51 (basal cell carcinoma of skin of trunk, except scrotum)
	<ul style="list-style-type: none"> - C44.510 (basal cell carcinoma of <i>anal</i> skin) 	
	<ul style="list-style-type: none"> - C44.511 (basal cell carcinoma of skin of <i>breast</i>) 	
	<ul style="list-style-type: none"> - C44.519 (basal cell carcinoma of skin of <i>other</i> part of trunk) 	
	<ul style="list-style-type: none"> - C44.52 (squamous cell carcinoma of skin of trunk) 	<ul style="list-style-type: none"> - 173.52 (squamous cell carcinoma of skin of trunk, except scrotum)
	<ul style="list-style-type: none"> - C44.520 (squamous cell carcinoma of <i>anal</i> skin) 	
	<ul style="list-style-type: none"> - C44.521 (squamous cell carcinoma of skin of <i>breast</i>) 	
	<ul style="list-style-type: none"> - C44.529 (squamous cell carcinoma of skin of <i>other</i> part of trunk) 	
	<ul style="list-style-type: none"> - C44.59 (other specified malignant neoplasm of skin of trunk) 	<ul style="list-style-type: none"> - 173.59 (other specified malignant neoplasm of skin of trunk, except scrotum)
	<ul style="list-style-type: none"> - C44.590 (other specified malignant neoplasm of <i>anal</i> skin) 	
	<ul style="list-style-type: none"> - C44.591 (other specified malignant neoplasm of <i>breast</i>) 	
	<ul style="list-style-type: none"> - C44.599 (other specified malignant neoplasm of skin of <i>other</i> part of trunk) 	
Skin of upper limb, including shoulder	<p><i>C44.6 (other and unspecified malignant neoplasm of skin of upper limb, including shoulder)</i></p>	<p><i>173.6 (other and unspecified malignant neoplasm of skin of upper limb, including shoulder)</i></p>
	<ul style="list-style-type: none"> - C44.60 (unspecified malignant neoplasm of skin of upper limb, including shoulder...) 	<ul style="list-style-type: none"> - 173.60 (unspecified malignant neoplasm of skin of upper limb, including shoulder)
	<ul style="list-style-type: none"> - C44.601 (<i>unspecified</i> upper limb, including shoulder) 	
	<ul style="list-style-type: none"> - C44.602 (<i>right</i> upper limb, including shoulder) 	
	<ul style="list-style-type: none"> - C44.609 (<i>left</i> upper limb, including shoulder) 	
	<ul style="list-style-type: none"> - C44.61 (basal cell carcinoma of skin of upper limb, including shoulder...) 	<ul style="list-style-type: none"> - 173.61 (basal cell carcinoma of skin of upper limb, including shoulder)

	<ul style="list-style-type: none"> - C44.611 (<i>unspecified</i> upper limb, including shoulder) - C44.612 (<i>right</i> upper limb, including shoulder) - C44.619 (<i>left</i> upper limb, including shoulder) 	
	<ul style="list-style-type: none"> - C44.62 (squamous cell carcinoma of skin of upper limb, including shoulder...) - C44.621 (<i>unspecified</i> upper limb, including shoulder) - C44.622 (<i>right</i> upper limb, including shoulder) - C44.629 (<i>left</i> upper limb, including shoulder) 	<ul style="list-style-type: none"> - 173.62 (squamous cell carcinoma of skin of upper limb, including shoulder)
	<ul style="list-style-type: none"> - C44.69 (other specified malignant neoplasm of skin of upper limb, including shoulder...) - C44.691 (<i>unspecified</i> upper limb, including shoulder) - C44.692 (<i>right</i> upper limb, including shoulder) - C44.699 (<i>left</i> upper limb, including shoulder) 	<ul style="list-style-type: none"> - 173.69 (other specified malignant neoplasm of skin of upper limb, including shoulder.)
Skin of lower limb, including hip	<p><i>C44.7 (other and unspecified malignant neoplasm of skin of lower limb, including hip)</i></p> <ul style="list-style-type: none"> - C44.70 (unspecified malignant neoplasm of skin of lower limb, including hip...) - C44.701 (<i>unspecified</i> lower limb, including hip) - C44.702 (<i>right</i> lower limb, including hip) - C44.709 (<i>left</i> lower limb, including hip) 	<p><i>173.7 (other and unspecified malignant neoplasm of skin of lower limb, including hip)</i></p> <ul style="list-style-type: none"> - 173.70 (unspecified malignant neoplasm of skin of lower limb, including hip)
	<ul style="list-style-type: none"> - C44.71 (basal cell carcinoma of skin of lower limb, including hip...) - C44.711 (<i>unspecified</i> lower limb, including hip) - C44.712 (<i>right</i> lower limb, including hip) - C44.719 (<i>left</i> lower limb, including hip) 	<ul style="list-style-type: none"> - 173.71 (basal cell carcinoma of skin of lower limb, including hip)
	<ul style="list-style-type: none"> - C44.72 (squamous cell carcinoma of skin of lower limb, including hip...) 	<ul style="list-style-type: none"> - 173.72 (squamous cell carcinoma of skin of lower limb, including hip)

	<ul style="list-style-type: none"> - C44.721 (<i>unspecified</i> lower limb, including hip) - C44.722 (<i>right</i> lower limb, including hip) - C44.729 (<i>left</i> lower limb, including hip) 	
	<ul style="list-style-type: none"> - C44.79 (other specified malignant neoplasm of skin of lower limb, including hip...) 	<ul style="list-style-type: none"> - 173.79 (other specified malignant neoplasm of skin of lower limb, including hip)
	<ul style="list-style-type: none"> - C44.791 (<i>unspecified</i> lower limb, including hip) 	
	<ul style="list-style-type: none"> - C44.792 (<i>right</i> lower limb, including him) 	
	<ul style="list-style-type: none"> - C44.799 (<i>left</i> lower limb, including hip) 	
Overlapping sites	<i>C44.8 (other and unspecified malignant neoplasm of overlapping sites of skin)</i>	<i>173.8 (other and unspecified malignant neoplasm of other specified sites of skin)</i>
	<ul style="list-style-type: none"> - C44.80 (<i>unspecified</i> malignant neoplasm of overlapping sites of skin) 	<ul style="list-style-type: none"> - 173.80 (<i>unspecified</i> malignant neoplasm of other specified sites of skin)
	<ul style="list-style-type: none"> - C44.81 (basal cell carcinoma of skin of overlapping sites of skin) 	<ul style="list-style-type: none"> - 173.81 (basal cell carcinoma of other specified sites of skin)
	<ul style="list-style-type: none"> - C44.82 (squamous cell carcinoma of overlapping sites of skin) 	<ul style="list-style-type: none"> - 173.82 (squamous cell carcinoma of other specified sites of skin)
	<ul style="list-style-type: none"> - C44.89 (other specified malignant neoplasm of overlapping sites of skin) 	<ul style="list-style-type: none"> - 173.89 (other specified malignant neoplasm of other specified sites of skin)
Unspecified	<i>C44.9 (other and unspecified malignant neoplasm skin, unspecified)</i>	<i>173.9 (other and unspecified malignant neoplasm of skin, site unspecified)</i>
	<ul style="list-style-type: none"> - C44.90 (<i>unspecified</i> malignant neoplasm of skin, <i>unspecified</i>) 	<ul style="list-style-type: none"> - 173.90 (<i>unspecified</i> malignant neoplasm of skin, site unspecified)
	<ul style="list-style-type: none"> - C44.91 (basal cell carcinoma of skin, <i>unspecified</i>) 	<ul style="list-style-type: none"> - 173.91 (basal cell carcinoma of skin, site unspecified)
	<ul style="list-style-type: none"> - C44.92 (squamous cell carcinoma of skin, <i>unspecified</i>) 	<ul style="list-style-type: none"> - 173.92 (squamous cell carcinoma of skin, site unspecified)
	<ul style="list-style-type: none"> - C44.99 (other specified malignant neoplasm of skin, <i>unspecified</i>) 	<ul style="list-style-type: none"> - 173.99 (other specified malignant neoplasm of skin, site unspecified)

Merkel Cell Carcinoma

Condition	ICD-10-CM Codes	ICD-9-CM Codes
<i>C4A (Merkel cell carcinoma)</i>		<i>209.3 (Merkel cell carcinoma)</i>
Lip	C4A.0 (Merkel cell carcinoma of lip)	209.31 (Merkel cell carcinoma of the face)
Eyelid, including canthus	C4A.1 (Merkel cell carcinoma of eyelid, including canthus...)	



	<ul style="list-style-type: none"> - C4A.10 (<i>unspecified</i> eyelid, including canthus) - C4A.11 (<i>right</i> eyelid, including canthus...) - C4A.111 (<i>right upper</i> eyelid, including canthus); <i>new 2019</i> - C4A.112 (<i>right lower</i> eyelid, including canthus); <i>new 2019</i> C4A.12 (<i>left</i> eyelid, including canthus...) - C4A.121 (<i>left upper</i> eyelid, including canthus); <i>new 2019</i> - C4A.122 (<i>left lower</i> eyelid, including canthus); <i>new 2019</i> 	
Ear and external auricular canal	C4A.2 (Merkel cell carcinoma of ear and external auricular canal...) <ul style="list-style-type: none"> - C4A.20 (<i>unspecified</i> ear and external auricular canal) - C4A.21 (<i>right</i> ear and external auricular canal) - C4A.22 (<i>left</i> ear and external auricular canal) 	209.31 (above)
Other and unspecified parts of face	C4A.3 (Merkel cell carcinoma of other and unspecified parts of face...) <ul style="list-style-type: none"> - C4A.30 (<i>unspecified</i> part of face) - C4A.31 (nose) - C4A.39 (<i>other</i> parts of face) 	209.31 (above)
Scalp and skin of neck	C4A.4 (Merkel cell carcinoma of scalp and neck)	209.32 (Merkel cell carcinoma of scalp and neck)
Skin of trunk	C4A.5 (Merkel cell carcinoma of trunk) <ul style="list-style-type: none"> - C4A.51 (Merkel cell carcinoma of anal skin) - C4A.52 (Merkel cell carcinoma of skin of breast) - C4A.59 (Merkel cell carcinoma of other part of trunk) 	209.35 (Merkel cell carcinoma of trunk)
Upper limb, including shoulder	C4A.6 (Merkel cell carcinoma of upper limb, including shoulder...) <ul style="list-style-type: none"> - C4A.60 (<i>unspecified</i> upper limb, including shoulder) 	209.33 (Merkel cell of upper limb)

	<ul style="list-style-type: none"> - C4A.61 (<i>right</i> upper limb, including shoulder) - C4A.62 (<i>left</i> upper limb, including shoulder) 	
Lower limb, including hip	<ul style="list-style-type: none"> C4A.70 (Merkel cell carcinoma of lower limb, including hip...) - C4A.70 (<i>unspecified</i> lower limb, including hip) - C4A.71 (<i>right</i> lower limb, including hip) - C4A.72 (<i>left</i> lower limb, including hip) 	209.34 (Merkel cell carcinoma of lower limb)
Overlapping site	C4A.8 (Merkel cell carcinoma overlapping sites)	209.36 (Merkel cell carcinoma of other sites)
Site unspecified	C4A.9 (Merkel cell carcinoma, unspecified)	

Carcinoma In Situ of Skin

Condition	ICD-10-CM Codes	ICD-9-CM Codes
<i>D04 (carcinoma in situ of skin)</i>		<i>232 (carcinoma in situ of skin)</i>
Lip	D04.0 (carcinoma in situ of skin of lip)	232.0 (carcinoma in situ of skin of lip)
Eyelid, including canthus	<ul style="list-style-type: none"> D04.1 (carcinoma in situ of skin of eyelid, including canthus...) - D04.10 (<i>unspecified</i> eyelid, including canthus) - D04.11 (<i>right</i> eyelid, including canthus...) - D04.111 (<i>right upper</i> eyelid, including canthus); <i>new 2019</i> - D04.112 (<i>right lower</i> eyelid, including canthus); <i>new 2019</i> D04.12 (<i>left</i> eyelid, including canthus...) - D04.121 (<i>left upper</i> eyelid, including canthus); <i>new 2019</i> - D04.122 (<i>left lower</i> eyelid, including canthus); <i>new 2019</i> 	232.1 (carcinoma in situ of skin of eyelid, including canthus)
Ear and external auricular canal	<ul style="list-style-type: none"> D04.2 (carcinoma in situ of skin of ear and external auricular canal...) - D04.20 (<i>unspecified</i> ear and external auricular canal) 	232.2 (carcinoma in situ of skin of ear and external auditory canal)

	<ul style="list-style-type: none"> - D04.21 (<i>right</i> ear and external auricular canal) - D04.22 (<i>left</i> ear and external auricular canal) 	
Other and unspecified parts of face	D04.3 (carcinoma in situ of skin of other and unspecified parts of face...) <ul style="list-style-type: none"> - D04.30 (<i>unspecified</i> part of face) - D04.39 (<i>other</i> parts of face) 	232.3 (carcinoma in situ of skin of other and unspecified parts of face)
Scalp and skin of neck	D04.4 (carcinoma in situ of scalp and skin of neck)	232.4 (carcinoma in situ of scalp and skin of neck)
Skin of trunk	D04.5 (carcinoma in situ of skin of trunk)	232.5 (carcinoma in situ of skin of trunk, except scrotum)
Upper limb, including shoulder	D04.6 (carcinoma in situ of skin of upper limb, including shoulder...) <ul style="list-style-type: none"> - D04.60 (<i>unspecified</i> upper limb, including shoulder) - D04.61 (<i>right</i> upper limb, including shoulder) - D04.62 (<i>left</i> upper limb, including shoulder) 	232.6 (carcinoma in situ of skin of upper limb, including shoulder)
Lower limb, including hip	D04.70 (carcinoma in situ of skin of lower limb, including hip...) <ul style="list-style-type: none"> - D04.70 (<i>unspecified</i> lower limb, including hip) - D04.71 (<i>right</i> lower limb, including hip) - D04.72 (<i>left</i> lower limb, including hip) 	232.7 (carcinoma in situ of skin of lower limb, including hip)
Other site	D04.8 (carcinoma in situ of other sites)	232.8 (carcinoma in situ of other specified sites of skin)
Site unspecified	D04.9 (carcinoma in situ of skin, unspecified)	232.9 (carcinoma in situ of skin, site unspecified)

Development and Revisions

- In the December 2016 *MSMR* article, NMSC was defined as "other and unspecified malignant neoplasm of the skin" and "carcinoma in situ of skin". In 2024, the Defense Health Agency (DHA) Health Surveillance & Epidemiology (HSE) cancer surveillance Sub Working Group (SubWG) added Merkel Cell carcinoma to the definition. The workgroup also considered developing a separate case definition for carcinoma in situ of the skin to align with other in situ case definitions. To maintain consistency with the original methodology and code set (see below), the workgroup decided to keep carcinoma in situ of the skin in the NMSC case definition. For investigators wishing to do so, it is possible to evaluate basal cell carcinoma, squamous cell carcinoma, "other



and unspecified” malignant neoplasm of skin, Merkel cell carcinoma, and carcinoma in situ of skin separately using this case definition.

- In June of 2017 the case definition was updated to include ICD10 codes.
- This case definition was developed in December of 2016 by the Epidemiology and Analysis (E&A) staff at the *Armed Forces Health Surveillance Center (AFHSC)* for use in a *Medical Surveillance Monthly Report (MSMR)* article on non-melanoma skin cancer.¹ The definition was developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- In 2016, E&A staff at the Armed Forces Health Surveillance Branch (AFHSB) analyzed various case finding criteria and the frequency of different ICD9 codes and determined *one hospitalization or two outpatient medical encounters within a 90-day period* with a case defining diagnosis of melanoma in situ yielded optimal specificity.⁶
- A 90-day interval was selected 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 NMSC are likely to have a follow-up visit for a 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 NMSC lesions is every 3-6 months for 2 years, and annually, thereafter.⁷
- This case definition attempts to count specific NMSC lesions by body region; therefore, outpatient encounters must meet all case finding criteria to be considered a case.
- To define a new incident case of NMSC in the same body location, the case definition uses a 365-day “gap in care” incidence rule. Use of this methodology presumes that medical encounters for NMSC that occur within 365 days of a previous such encounter constitute follow-up care of a previously diagnosed lesion. The goal of the “gap in care” rule is to lessen the frequency with which encounters for follow-up care are treated as new incident cases of the condition. The “gap in care” rule differs slightly from an absolute 365-day incidence rule in which an individual may be considered an incident case once every 365 days.

Code Set Determination and Rationale

- In May 2024, the code set was updated by the DHA HSE cancer surveillance SubWG to include Merkel cell carcinoma.
- The original NMSC code set (2016) is based on analyses by Eide, MJ, *et. al.*⁸ and Rogers, HW *et. al.*⁹ Eide’s case finding methodology compared ICD9 codes for NMSC alone, related Current Procedure Terminology (CPT) codes alone, and both ICD9 and CPT codes. Roger’s case finding methodology included NMSC ICD9 codes and carcinoma in situ codes.

⁶ Detailed information on these analyses is available through AFHSD; reference DMSS Requests #R160257 and #R160151.

⁷ Basel Cell Skin Cancer. Squamous Cell Skin Cancer. National Comprehensive Cancer Network (NCCN) Guidelines Version 2.2023. <https://www.nccn.org/guidelines/recently-published-guidelines>; Accessed February 2025.

⁸ Eide, MJ, Krajenta, R, Johnson, D, *et. al.* Identification of patients with nonmelanoma skin cancer using health maintenance organization claims data. *Am J Epidemiol.*, Jan 2010, 171(1): 123-8.

⁹ Rogers, HW, Weinstock, MA, Feldman, SR, Coldiron, BM. Incidence Estimate of Nonmelanoma Skin Cancer (Keratinocyte Carcinomas) in the U.S. Population, 2012. *JAMA Dermatol.* Oct 2015, 151(10):1081-6.



- Codes ICD9 187.7 /ICD10 C63.2 (malignant neoplasm of scrotum) are not included in the case definition. While the codes may be used for malignant neoplasm of the *skin* of the scrotum, they are also used for primary and metastatic malignant neoplasms of the scrotum.
- Specific ICD9 codes for basal cell and squamous cell carcinoma were introduced into ICD-9-CM in November of 2011. Prior to 2011 these conditions could not be distinguished using ICD9 codes; both were coded using 173.x (other and unspecified malignant neoplasm of skin). A 2016 *MSMR* article on NMSC reported: “During 2012–2014, there were 2,337 incident diagnoses of NMSC; of these, 1,907 (81.6%) were BCC; 241 (10.3%) were SCC; 55 (2.4%) were carcinoma in situ of skin; and 134 (5.7%) were ‘other and unspecified’ (data not shown).”
- *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).”¹⁰ They would not be used for follow-up medical encounters of a specific disease. For case finding purposes, CPT codes and inpatient PR codes are also more specific and required documentation.
- *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.¹¹ 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), 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).¹²

Reports

The AFHSD reports on non-melanoma skin cancer in the following reports:

- Periodic *MSMR* articles.

¹⁰ 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 2025.

¹¹ 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.

¹² 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 February 2025.



Review

Feb 2025	Case definition reviewed and updated by DHA HSE cancer surveillance SubWG; approved by the AFHSD Surveillance Methods and Standards (SMS) working group.
Jun 2017	Case definition reviewed and adopted by the AFHSC SMS working group.
Dec 2016	Case definition developed by the AFHSC E&A staff.

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.¹³

¹³ 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.

