

Table S1. ICD codes that are relevant to TBSEs

Code	Diagnosis	ICD9/ICD10
C44	unspecified malignant neoplasm of skin	ICD-10
C44.0	unspecified malignant neoplasm of skin of lip	ICD-10
C44.00	unspecified malignant neoplasm of skin of lip	ICD-10
C44.01	basal cell carcinoma of skin of lip	ICD-10
C44.02	squamous cell carcinoma of skin of lip	ICD-10
C44.09	unspecified malignant neoplasm of skin of lip	ICD-10
C44.1	unspecified malignant neoplasm of skin of eyelid, including canthus	ICD-10
C44.10	unspecified malignant neoplasm of skin of eyelid, including canthus	ICD-10
C44.101	unspecified malignant neoplasm of skin of unspecified eyelid, including canthus	ICD-10
C44.102	unspecified malignant neoplasm of skin of right eyelid, including canthus	ICD-10
C44.1021	unspecified malignant neoplasm of skin of right upper eyelid, including canthus	ICD-10
C44.1022	unspecified malignant neoplasm of skin of right lower eyelid, including canthus	ICD-10
C44.109	unspecified malignant neoplasm of skin of left eye, including canthus	ICD-10
C44.1091	unspecified malignant neoplasm of skin of left upper eyelid, including canthus	ICD-10
C44.1092	unspecified malignant neoplasm of skin of left lower eyelid, including canthus	ICD-10
C44.11	basal cell carcinoma of skin of eyelid, including canthus	ICD-10
C44.111	basal cell carcinoma of skin of unspecified eyelid, including canthus	ICD-10
C44.112	basal cell carcinoma of skin of right eyelid, including canthus	ICD-10
C44.1121	basal cell carcinoma of skin of right upper eyelid, including canthus	ICD-10
C44.1122	basal cell carcinoma of skin of right lower eyelid, including canthus	ICD-10

C44.119	basal cell carcinoma of skin of left eyelid, including canthus	ICD-10
C44.1191	basal cell carcinoma of skin of left upper eyelid, including canthus	ICD-10
C44.1192	basal cell carcinoma of skin of left lower eyelid, including canthus	ICD-10
C44.12	squamous cell carcinoma of skin of eyelid, including canthus	ICD-10
C44.121	squamous cell carcinoma, of skin of unspecified eyelid, including canthus	ICD-10
C44.122	squamous cell carcinoma of skin of right eyelid, including canthus	ICD-10
C44.1221	squamous cell carcinoma of skin of right upper eyelid, including canthus	ICD-10
C44.1222	squamous cell carcinoma of skin of right lower eyelid, including canthus	ICD-10
C44.129	squamous cell carcinoma of skin of left eyelid, including canthus	ICD-10
C44.1291	squamous cell carcinoma of skin of left upper eyelid, including canthus	ICD-10
C44.1292	squamous cell carcinoma of skin of left lower eyelid, including canthus	ICD-10
C44.2	oth and unspecified malignant neoplasm of skin of ear and external auricular canal	ICD-10
C44.20	unspecified malignant neoplasm of skin of ear and external auricular canal	ICD-10
C44.201	unspecified malignant neoplasm of skin of unspcified ear and external auricular canal	ICD-10
C44.202	Unspecified malignant neoplasm of skin of right ear and external auricular canal	ICD-10
C44.209	unspecified malignant neoplasm of skin of left ear and external auricular canal	ICD-10
C44.209	unspecified malignant neoplasm of skin	ICD-10
C44.21	Basal cell carcinoma of skin of ear and external auricular canal	ICD-10
C44.211	Basal cell carcinoma of skin of unspecified ear and external auricular canal	ICD-10

C44.212	Basal cell carcinoma of skin of right ear and external auricular canal	ICD-10
C44.219	Basal cell carcinoma of skin of left ear and external auricular canal	ICD-10
C44.22	Squamous cell carcinoma of skin of ear and external auricular canal	ICD-10
C44.221	Squamous cell carcinoma of skin of unspecified ear and external auricular canal	ICD-10
C44.222	Squamous cell carcinoma of skin of right ear and external auricular canal	ICD-10
C44.229	Squamous cell carcinoma of skin of left ear and external auricular canal	ICD-10
C44.3	Other and unspecified malignant neoplasm of skin of other and unspecified parts of face	ICD-10
C44.30	Unspecified malignant neoplasm of skin of other and unspecified parts of face	ICD-10
C44.300	Unspecified malignant neoplasm of skin of unspecified part of face	ICD-10
C44.301	Unspecified malignant neoplasm of skin of nose	ICD-10
C44.309	Unspecified malignant neoplasm of skin of other parts of face	ICD-10
C44.31	Basal cell carcinoma of skin of other and unspecified parts of face	ICD-10
C44.310	Basal cell carcinoma of skin of unspecified parts of face	ICD-10
C44.311	Basal cell carcinoma of skin of nose	ICD-10
C44.319	Basal cell carcinoma of skin of other parts of face	ICD-10
C44.32	Squamous cell carcinoma of skin of other and unspecified parts of face	ICD-10
C44.320	Squamous cell carcinoma of skin of unspecified parts of face	ICD-10
C44.321	Squamous cell carcinoma of skin of nose	ICD-10
C44.329	Squamous cell carcinoma of skin of other parts of face	ICD-10
C44.4	Other and unspecified malignant neoplasm of skin of scalp and neck	ICD-10

C44.40	Unspecified malignant neoplasm of skin of scalp and neck	ICD-10
C44.41	Basal cell carcinoma of skin of scalp and neck	ICD-10
C44.42	Squamous cell carcinoma of skin of scalp and neck	ICD-10
C44.5	Other and unspecified malignant neoplasm of skin of trunk	ICD-10
C44.50	Unspecified malignant neoplasm of skin of trunk	ICD-10
C44.500	Unspecified malignant neoplasm of anal skin	ICD-10
C44.501	Unspecified malignant neoplasm of skin of breast	ICD-10
C44.509	Unspecified malignant neoplasm of skin of other part of trunk	ICD-10
C44.51	Basal cell carcinoma of skin of trunk	ICD-10
C44.510	Basal cell carcinoma of anal skin	ICD-10
C44.511	Basal cell carcinoma of skin of breast	ICD-10
C44.519	Basal cell carcinoma of skin of other part of trunk	ICD-10
C44.52	Squamous cell carcinoma of skin of trunk	ICD-10
C44.520	Squamous cell carcinoma of anal skin	ICD-10
C44.521	Squamous cell carcinoma of skin of breast	ICD-10
C44.529	Squamous cell carcinoma of skin of other part of trunk	ICD-10
C44.6	Other and unspecified malignant neoplasm of skin of upper limb, including shoulder	ICD-10
C44.60	Unspecified malignant neoplasm of skin of upper limb, including shoulder	ICD-10
C44.601	Unspecified malignant neoplasm of skin of unspecified upper limb, including shoulder	ICD-10
C44.602	Unspecified malignant neoplasm of skin of right upper limb, including shoulder	ICD-10
C44.609	Unspecified malignant neoplasm of skin of left upper limb, including shoulder	ICD-10
C44.61	Basal cell carcinoma of skin of upper limb, including shoulder	ICD-10
C44.611	Basal cell carcinoma of skin of unspecified upper limb, including shoulder	ICD-10
C44.612	Basal cell carcinoma of skin of right upper limb, including shoulder	ICD-10

C44.619	Basal cell carcinoma of skin of left upper limb, including shoulder	ICD-10
C44.62	Squamous cell carcinoma of skin of upper limb, including shoulder	ICD-10
C44.621	Squamous cell carcinoma of skin of unspecified upper limb, including shoulder	ICD-10
C44.622	Squamous cell carcinoma of skin of right upper limb, including shoulder	ICD-10
C44.629	Squamous cell carcinoma of skin of left upper limb, including shoulder	ICD-10
C44.7	Other and unspecified malignant neoplasm of skin of lower limb, including hip	ICD-10
C44.70	Unspecified malignant neoplasm of skin of lower limb, including hip	ICD-10
C44.701	Unspecified malignant neoplasm of skin of unspecified lower limb, including hip	ICD-10
C44.702	Unspecified malignant neoplasm of skin of right lower limb, including hip	ICD-10
C44.709	Unspecified malignant neoplasm of skin of left lower limb, including hip	ICD-10
C44.71	Basal cell carcinoma of skin of lower limb, including hip	ICD-10
C44.711	Basal cell carcinoma of skin of unspecified lower limb, including hip	ICD-10
C44.712	Basal cell carcinoma of skin of right lower limb, including hip	ICD-10
C44.719	Basal cell carcinoma of skin of left lower limb, including hip	ICD-10
C44.72	Squamous cell carcinoma of skin of lower limb, including hip	ICD-10
C44.721	Squamous cell carcinoma of skin of unspecified lower limb, including hip	ICD-10
C44.722	Squamous cell carcinoma of skin of right lower limb, including hip	ICD-10
C44.729	Squamous cell carcinoma of skin of left lower limb, including hip	ICD-10

C44.8	Other and unspecified malignant neoplasm of overlapping sites of skin	ICD-10
C44.80	Unspecified malignant neoplasm of overlapping sites of skin	ICD-10
C44.81	Basal cell carcinoma of overlapping sites of skin	ICD-10
C44.82	Squamous cell carcinoma of overlapping sites of skin	ICD-10
C44.9	Other and unspecified malignant neoplasm of skin, unspecified	ICD-10
C44.90	Unspecified malignant neoplasm of skin, unspecified	ICD-10
C44.91	Basal cell carcinoma of skin, unspecified	ICD-10
C44.92	Squamous cell carcinoma of skin, unspecified	ICD-10
C4A.0	Merkel cell carcinoma of lip	ICD-10
C4A.1	Merkel cell carcinoma of eyelid, including canthus	ICD-10
C4A.10	Merkel cell carcinoma of unspecified eyelid, including canthus	ICD-10
C4A.11	Merkel cell carcinoma of right eyelid, including canthus	ICD-10
C4A.111	Merkel cell carcinoma of right upper eyelid, including canthus	ICD-10
C4A.112	Merkel cell carcinoma of right lower eyelid, including canthus	ICD-10
C4A.12	Merkel cell carcinoma of left eyelid, including canthus	ICD-10
C4A.121	Merkel cell carcinoma of left upper eyelid, including canthus	ICD-10
C4A.122	Merkel cell carcinoma of left lower eyelid, including canthus	ICD-10
C4A.2	Merkel cell carcinoma of ear and external auricular canal	ICD-10
C4A.20	Merkel cell carcinoma of unspecified ear and external auricular canal	ICD-10
C4A.21	Merkel cell carcinoma of right ear and external auricular canal	ICD-10
C4A.22	Merkel cell carcinoma of left ear and external auricular canal	ICD-10
C4A.3	Merkel cell carcinoma of other and unspecified parts of face	ICD-10
C4A.30	Merkel cell carcinoma of unspecified part of face	ICD-10

C4A.31	Merkel cell carcinoma of nose	ICD-10
C4A.39	Merkel cell carcinoma of other parts of face	ICD-10
C4A.4	Merkel cell carcinoma of scalp and neck	ICD-10
C4A.5	Merkel cell carcinoma of trunk	ICD-10
C4A.51	Merkel cell carcinoma of anal skin	ICD-10
C4A.52	Merkel cell carcinoma of skin of breast	ICD-10
C4A.59	Merkel cell carcinoma of other part of trunk	ICD-10
C4A.6	Merkel cell carcinoma of upper limb, including shoulder	ICD-10
C4A.60	Merkel cell carcinoma of unspecified upper limb, including shoulder	ICD-10
C4A.61	Merkel cell carcinoma of right upper limb, including shoulder	ICD-10
C4A.62	Merkel cell carcinoma of left upper limb, including shoulder	ICD-10
C4A.7	Merkel cell carcinoma of lower limb, including hip	ICD-10
C4A.70	Merkel cell carcinoma of unspecified lower limb, including hip	ICD-10
C4A.71	Merkel cell carcinoma of right lower limb, including hip	ICD-10
C4A.72	Merkel cell carcinoma of left lower limb, including hip	ICD-10
C4A.8	Merkel cell carcinoma of overlapping sites	ICD-10
C4A.9	Merkel cell carcinoma, unspecified	ICD-10
C84.A0	Cutaneous T-cell lymphoma, unspecified, unspecified site	ICD-10
D04	Carcinoma in situ of skin	ICD-10
D04.0	Carcinoma in situ of skin of lip	ICD-10
D04.1	Carcinoma in situ of skin of eyelid, including canthus	ICD-10
D04.10	Carcinoma in situ of skin of unspecified eyelid, including canthus	ICD-10
D04.11	Carcinoma in situ of skin of right eyelid, including canthus	ICD-10
D04.111	Carcinoma in situ of skin of right upper eyelid, including canthus	ICD-10
D04.112	Carcinoma in situ of skin of right lower eyelid, including canthus	ICD-10

D04.12	Carcinoma in situ of skin of left eyelid, including canthus	ICD-10
D04.121	Carcinoma in situ of skin of left upper eyelid, including canthus	ICD-10
D04.122	Carcinoma in situ of skin of left lower eyelid, including canthus	ICD-10
D04.2	Carcinoma in situ of skin of ear and external auricular canal	ICD-10
D04.20	Carcinoma in situ of skin of unspecified ear and external auricular canal	ICD-10
D04.21	Carcinoma in situ of skin of right ear and external auricular canal	ICD-10
D04.22	Carcinoma in situ of skin of left ear and external auricular canal	ICD-10
D04.3	Carcinoma in situ of skin of other and unspecified parts of face	ICD-10
D04.30	Carcinoma in situ of skin of unspecified part of face	ICD-10
D04.39	Carcinoma in situ of skin of other parts of face	ICD-10
D04.4	Carcinoma in situ of skin of scalp and neck	ICD-10
D04.5	Carcinoma in situ of skin of trunk	ICD-10
D04.6	Carcinoma in situ of skin of upper limb, including shoulder	ICD-10
D04.60	Carcinoma in situ of skin of unspecified upper limb, including shoulder	ICD-10
D04.61	Carcinoma in situ of skin of right upper limb, including shoulder	ICD-10
D04.62	Carcinoma in situ of skin of left upper limb, including shoulder	ICD-10
D04.7	Carcinoma in situ of skin of lower limb, including hip	ICD-10
D04.70	Carcinoma in situ of skin of unspecified lower limb, including hip	ICD-10
D04.71	Carcinoma in situ of skin of right lower limb, including hip	ICD-10
D04.72	Carcinoma in situ of skin of left lower limb, including hip	ICD-10
D04.8	Carcinoma in situ of skin of other sites	ICD-10
D04.9	Carcinoma in situ of skin, unspecified	ICD-10

D18.00	Hemangioma and lymphangioma, any site unspecified site	ICD-10
D18.01	Hemangioma and lymphangioma, any site of skin and subcutaneous tissue	ICD-10
D22.0	Melanocytic nevi of lip	ICD-10
D22.1	Melanocytic nevi of eyelid, including canthus	ICD-10
D22.10	Melanocytic nevi of unspecified eyelid, including canthus	ICD-10
D22.11	Melanocytic nevi of right eyelid, including canthus	ICD-10
D22.111	Melanocytic nevi of right upper eyelid, including canthus	ICD-10
D22.112	Melanocytic nevi of right lower eyelid, including canthus	ICD-10
D22.12	Melanocytic nevi of left eyelid, including canthus	ICD-10
D22.121	Melanocytic nevi of left upper eyelid, including canthus	ICD-10
D22.122	Melanocytic nevi of left lower eyelid, including canthus	ICD-10
D22.2	Melanocytic nevi of ear and external auricular canal	ICD-10
D22.20	Melanocytic nevi of unspecified ear and external auricular canal	ICD-10
D22.21	Melanocytic nevi of right ear and external auricular canal	ICD-10
D22.22	Melanocytic nevi of left ear and external auricular canal	ICD-10
D22.3	Melanocytic nevi of unspecified part of face	ICD-10
D22.30	Melanocytic nevi of lower limb, including hip	ICD-10
D22.39	Melanocytic nevi of other parts of face	ICD-10
D22.4	Melanocytic nevi of scalp and neck	ICD-10
D22.5	Melanocytic nevi of trunk	ICD-10
D22.6	Melanocytic nevi of upper limb, including shoulder	ICD-10
D22.60	Melanocytic nevi of unspecified upper limb, including shoulder	ICD-10
D22.61	Melanocytic nevi of right upper limb, including shoulder	ICD-10
D22.62	Melanocytic nevi of left upper limb, including shoulder	ICD-10

D22.7	Melanocytic nevi of lower limb, including hip	ICD-10
D22.70	Melanocytic nevi of unspecified lower limb, including hip	ICD-10
D22.71	Melanocytic nevi of right lower limb, including hip	ICD-10
D22.72	Melanocytic nevi of left lower limb, including hip	ICD-10
D22.9	Melanocytic nevi, unspecified	ICD-10
D23.0	Other benign neoplasm of skin of lip	ICD-10
D23.1	Other benign neoplasm of skin of eyelid, including canthus	ICD-10
D23.10	Other benign neoplasm of skin of unspecified eyelid, including canthus	ICD-10
D23.11	Other benign neoplasm of skin of right eyelid, including canthus	ICD-10
D23.111	Other benign neoplasm of skin of right upper eyelid, including canthus	ICD-10
D23.112	Other benign neoplasm of skin of right lower eyelid, including canthus	ICD-10
D23.12	Other benign neoplasm of skin of left eyelid, including canthus	ICD-10
D23.121	Other benign neoplasm of skin of left upper eyelid, including canthus	ICD-10
D23.122	Other benign neoplasm of skin of left lower eyelid, including canthus	ICD-10
D23.2	Other benign neoplasm of skin of ear and external auricular canal	ICD-10
D23.20	Other benign neoplasm of skin of unspecified ear and external auricular canal	ICD-10
D23.21	Other benign neoplasm of skin of right ear and external auricular canal	ICD-10
D23.22	Other benign neoplasm of skin of left ear and external auricular canal	ICD-10
D23.3	Other benign neoplasm of skin of other and unspecified parts of face	ICD-10
D23.30	Other benign neoplasm of skin of unspecified part of face	ICD-10
D23.39	Other benign neoplasm of skin of other parts of face	ICD-10
D23.4	Other benign neoplasm of skin of scalp and neck	ICD-10

D23.5	Other benign neoplasm of skin of trunk	ICD-10
D23.6	Other benign neoplasm of skin of upper limb, including shoulder	ICD-10
D23.60	Other benign neoplasm of skin of unspecified upper limb, including shoulder	ICD-10
D23.61	Other benign neoplasm of skin of right upper limb, including shoulder	ICD-10
D23.62	Other benign neoplasm of skin of left upper limb, including shoulder	ICD-10
D23.7	Other benign neoplasm of skin of lower limb, including hip	ICD-10
D23.70	Other benign neoplasm of skin of unspecified lower limb, including hip	ICD-10
D23.71	Other benign neoplasm of skin of right lower limb, including hip	ICD-10
D23.72	Other benign neoplasm of skin of left lower limb, including hip	ICD-10
D23.9	Other benign neoplasm of skin, unspecified	ICD-10
D48.5	Neoplasm of uncertain behavior of skin	ICD-10
I78.1	Nevus, non-neoplastic	ICD-10
L57.0	Actinic keratosis	ICD-10
L57.8	Other skin changes due to chronic exposure to nonionizing radiation	ICD-10
L81.4	Other melanin hyperpigmentation	ICD-10
L82.0	Inflamed seborrheic keratosis	ICD-10
L82.1	Other seborrheic keratosis	ICD-10
Q82.5	Congenital non-neoplastic nevus	ICD-10
Z12.83	Encounter for screening for malignant neoplasm of skin	ICD-10
Z85.82	Personal history of malignant neoplasm of skin	ICD-10
Z85.820	Personal history of malignant melanoma of skin	ICD-10
Z85.821	Personal history of Merkel cell carcinoma	ICD-10
Z85.828	Personal history of other malignant neoplasm of skin	ICD-10
173	Other and unspecified malignant neoplasm of skin	ICD-9
173.0	Other and unspecified malignant neoplasm of skin of lip	ICD-9
173.00	unspecified malignant neoplasm of skin of lip	ICD-9

173.01	basal cell carcinoma of skin of lip	ICD-9
173.02	squamous cell carcinoma of skin of lip	ICD-9
173.1	Other and unspecified malignant neoplasm of eyelid, including canthus	ICD-9
173.10	unspecified malignant neoplasm of eyelid, including canthus	ICD-9
173.11	basal cell carcinoma of eyelid, including canthus	ICD-9
173.12	squamous cell carcinoma of eyelid, including canthus	ICD-9
173.2	Other and unspecified malignant neoplasm of skin of ear and external auditory canal	ICD-9
173.20	unspecified malignant neoplasm of skin of ear and external auditory canal	ICD-9
173.21	basal cell carcinoma of skin of ear and external auditory canal	ICD-9
173.22	squamous cell carcinoma of skin of ear and external auditory canal	ICD-9
173.3	Other and unspecified malignant neoplasm of skin of other and unspecified parts of face	ICD-9
173.30	unspecified malignant neoplasm of skin of other and unspecified parts of face	ICD-9
173.31	basal cell carcinoma of skin of other and unspecified parts of face	ICD-9
173.32	squamous cell carcinoma of skin of other and unspecified parts of face	ICD-9
173.4	Other and unspecified malignant neoplasm of scalp and skin of neck	ICD-9
173.40	unspecified malignant neoplasm of scalp and skin of neck	ICD-9
173.41	basal cell carcinoma of scalp and skin of neck	ICD-9
173.42	squamous cell carcinoma of scalp and skin of neck	ICD-9
173.5	Other and unspecified malignant neoplasm of skin of trunk, except scrotum	ICD-9
173.50	Unspecified malignant neoplasm of skin of trunk, except scrotum	ICD-9
173.51	basal cell carcinoma of skin of trunk, except scrotum	ICD-9
173.52	squamous cell carcinoma of skin of trunk, except scrotum	ICD-9

173.6	Other and unspecified malignant neoplasm of skin of upper limb, including shoulder	ICD-9
173.60	unspecified malignant neoplasm of skin of upper limb, including shoulder	ICD-9
173.61	basal cell carcinoma of skin of upper limb, including shoulder	ICD-9
173.62	squamous cell carcinoma of skin of upper limb, including shoulder	ICD-9
173.7	Other and unspecified malignant neoplasm of skin of lower limb, including hip	ICD-9
173.70	unspecified malignant neoplasm of skin of lower limb, including hip	ICD-9
173.71	basal cell carcinoma of lower limb, including hip of lower limb, including hip	ICD-9
173.72	squamous cell carcinoma of lower limb, including hip	ICD-9
173.8	Other and unspecified malignant neoplasm of skin of other spec sites of skin	ICD-9
173.80	unspecified malignant neoplasm of other specified sites of skin	ICD-9
173.81	basal cell carcinoma of other specified sites of skin	ICD-9
173.82	squamous cell carcinoma of other specified sites of skin	ICD-9
173.9	Other and unspecified malignant neoplasm of skin, site unspecified	ICD-9
173.90	unspecified malignant neoplasm of skin of other spec sites of skin	ICD-9
173.91	basal cell carcinoma of skin, site unspecified	ICD-9
173.92	squamous cell carcinoma of skin, site unspecified	ICD-9
202.70	Peripheral T cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9
209.31	Merkel cell carcinoma of the face	ICD-9
209.32	Merkel cell carcinoma of the scalp and neck	ICD-9
209.33	Merkel cell carcinoma of the upper limb	ICD-9
209.34	Merkel cell carcinoma of the lower limb	ICD-9
209.35	Merkel cell carcinoma of the trunk	ICD-9
209.36	Merkel cell carcinoma of other sites	ICD-9
216.0	Benign neoplasm of skin of lip	ICD-9

216.1	Benign neoplasm of eyelid, including canthus	ICD-9
216.2	Benign neoplasm of ear and external auditory canal	ICD-9
216.3	Benign neoplasm of skin of other and unspecified parts of face	ICD-9
216.4	Benign neoplasm of scalp and skin of neck	ICD-9
216.5	Benign neoplasm of skin of trunk, except scrotum	ICD-9
216.6	Benign neoplasm of skin of upper limb, including shoulder	ICD-9
216.7	Benign neoplasm of skin of lower limb, including hip	ICD-9
216.8	Benign neoplasm of other specified sites of skin	ICD-9
216.9	Benign neoplasm of skin, site unspecified	ICD-9
228.00	Hemangioma of unspecified site	ICD-9
228.01	Hemangioma of skin and subcutaneous tissue	ICD-9
232	Carcinoma in situ of skin	ICD-9
232.0	Carcinoma in situ of skin of lip	ICD-9
232.1	Carcinoma in situ of eyelid, including canthus	ICD-9
232.2	Carcinoma in situ of skin of ear and external auditory canal	ICD-9
232.3	Carcinoma in situ of skin of other and unspecified parts of face	ICD-9
232.4	Carcinoma in situ of scalp and skin of neck	ICD-9
232.5	Carcinoma in situ of skin of trunk, except scrotum	ICD-9
232.6	Carcinoma in situ of skin of upper limb, including shoulder	ICD-9
232.7	Carcinoma in situ of skin of lower limb, including hip	ICD-9
232.8	Carcinoma in situ of other specified sites of skin	ICD-9
232.9	Carcinoma in situ of skin, site unspecified	ICD-9
238.2	Neoplasm of uncertain behavior of skin	ICD-9
448.1	Nevus, non-neoplastic	ICD-9
692.70	Unspecified dermatitis due to sun	ICD-9
702.0	Actinic keratosis	ICD-9
702.11	Inflamed seborrheic keratosis	ICD-9
702.19	Other seborrheic keratosis	ICD-9
709.09	Other dyschromia	ICD-9
757.32	Congenital non-neoplastic nevus	ICD-9
V10.82	Personal history of malignant melanoma of skin	ICD-9
V10.83	Personal history of other malignant neoplasm of skin	ICD-9
V10.91	Personal history of malignant neuroendocrine tumor	ICD-9
V76.43	Encounter for screening for malignant neoplasm of skin	ICD-9

Table S2. Rates of TBSEs (responding “yes” to performing a skin exam and providing a skin exam related ICD code as the top diagnosis of the visit) from dermatology providers in NAMCS 2011 to 2016.

	2011	2012	2013	2014	2015	2016
	TBSE - Y¶ Weighted % ** (95% CI)					
n/N* (weighted%)**	429/1,439 (29.6)	760/2,377 (31.7)	564/1,662 (37.9)	576/1,625 (30.8)	1,039/2,734 (34.6)	360/1,274 (28.8)
Biopsy %†	23.9 (17.6-31.6)	19.7 (15.0-25.4)	27.2 (17.9-39.1)	18.6 (12.8-26.1)	20.9 (16.5-26.2)	29.5 (20.6-40.4)
Sex						
Male	32.9 (26.2-40.5)	33.1 (26.8-40.2)	40.1 (30.3-50.7)	33.6 (26.1-42.0)	40.8 (33.8-48.2)	28.2 (22.3-34.9)
Female	26.9 (21.5-33.2)	30.6 (24.9-37.0)	36.2 (27.5-45.8)	28.3 (20.6-37.5)	30.1 (22.9-38.5)	29.4 (23.3-36.3)
Age, yrs						
0-17	9.2 (5.4-15.1)	7.3 (3.5-14.7)	10.5 (3.1-30.2)	10.0 (4.8-19.7)	3.8 (1.9-7.5)	5.0 (2.1-11.2)
18-30	10.9 (7.0-16.7)	14.5 (7.3-26.8)	8.9 (4.3-17.7)	11.8 (5.9-22.2)	12.5 (8.3-18.5)	9.2 (4.5-18.2)
31-50	22.3 (15.5-31.0)	24.9 (18.4-32.7)	32.2 (21.2-45.5)	25.0 (18.5-33.0)	24.3 (16.6-34.1)	18.9 (13.1-26.4)
51-64	32.6 (26.3-39.7)	37.0 (30.8-43.7)	47.9 (33.3-62.9)	28.6 (19.7-39.7)	35.3 (26.9-44.7)	36.7 (28.1-46.2)
≥65	43.1 (33.9-52.9)	44.3 (34.7-54.3)	46.5 (36.4-56.9)	42.6 (31.4-55.0)	48.5 (40.4-56.7)	39.2 (31.0-48.1)
Race/ethnicity						
NHW	31.7 (26.1-37.8)	35.1 (29.4-41.4)	39.7 (31.0-49.1)	33.2 (25.8-41.5)	38.2 (31.5-45.5)	32.0 (26.8-37.7)
NHB	9.8 (3.5-24.4)	6.6 (2.5-16.5)	9.0 (4.3-17.8)	11.3 (6.2-19.7)	10.7 (5.2-20.5)	7.0 (2.9-16.3)
Hispanic	15.1 (8.0-26.9)	11.2 (5.7-20.9)	33.3 (8.6-72.5)	11.2 (3.7-29.2)	18.9 (12.3-27.8)	22.0 (10.4-40.6)
Non-Hispanic other	10.9 (3.0-32.1)	10.6 (4.2-24.7)	33.9 (12.5-64.8)	15.1 (6.3-32.2)	4.4 (1.7-10.7)	6.6 (1.3-27.8)
Insurance Type***						
Private	25.1 (20.5-30.4)	29.8 (24.2-36.0)	36.6 (25.5-49.3)	24.5 (18.3-31.8)	27.8 (21.2-35.5)	24.6 (19.0-31.2)
Medicare	40.7 (31.0-51.3)	42.8 (32.8-53.5)	44.7 (34.4-55.5)	44.5 (33.7-55.9)	47.6 (40.1-55.3)	39.6 (31.4-48.5)
Medicaid	12.8 (4.1-33.6)	8.2 (2.8-21.8)	27.2 (4.4-75.3)	14.0 (6.0-29.2)	6.0 (1.6-20.6)	15.7 (8.2-28.1)
Other	14.8 (6.6-29.9)	4.6 (1.4-14.3)	12.5 (5.4-26.3)	18.3 (4.8-49.7)	26.4 (12.3-47.7)	15.1 (7.0-29.7)
Region						
Northeast	19.4 (8.2-39.1)	25.0 (10.9-47.5)	11.6 (3.0-35.9)	8.4 (2.8-22.5)	24.4 (13.7-39.7)	22.2 (10.4-41.3)
Midwest	27.0 (15.1-43.3)	17.2 (9.0-30.3)	15.8 (7.0-31.7)	23.4 (12.2-40.3)	19.7 (11.9-30.8)	13.9 (7.4-24.4)
South	22.9 (13.1-36.9)	44.6 (28.4-61.9)	38.0 (19.4-61.1)	41.4 (23.7-61.5)	24.6 (14.5-38.4)	35.5 (22.2-51.6)
West	30.8 (20.4-43.5)	13.3 (7.0-23.7)	34.6 (12.0-67.3)	26.9 (11.6-50.7)	31.4 (17.3-49.9)	28.4 (19.1-39.9)

The top 3 diagnoses for TBSE visits were actinic keratosis, seborrheic keratosis, and benign neoplasm of skin, respectively.

* n/N=number of TBSEs (determined based on Model 1 criteria)/total dermatology visits

** Weighted % was calculated using NAMCS design parameters in order to be representative of the general United States population

*** 51 subjects missing in 2011, 114 subjects missing in 2012, 55 subjects missing in 2013, 73 subjects missing in 2014, 139 subjects missing in 2015, and 38 subjects missing in 2016

¶ TBSE was defined as answering yes to performing “a physical exam used to identify skin problems, such as skin cancer, including suspicious growths, moles, or lesions” and providing a skin exam related ICD code as the #1 diagnosis for a visit

† Biopsy % = TBSE visits where biopsy was performed/TBSE visits among dermatology providers

Y, yes; NHW, Non-Hispanic White; NHB, Non-Hispanic Black; CI, confidence interval; TBSE, total body skin exam; yrs, years