



**University of Dundee**

## **Nationwide Incidence of Metastatic Cutaneous Squamous Cell Carcinoma in England**

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Patient demographics	1 <sup>st</sup> primary cSCC n=76977		1 <sup>st</sup> Metastatic cSCC n=1566 <sup>a</sup>	
	Male n=48254	Female n= 28723	Males n=1216	Females n=350
Age at diagnosis Median (IQR) years	78 (13)	80 (16)	80 (14)	84 (13)
Age bands (%)				
Age <50	808 (1.7)	613 (2.1)	13 (1.1)	<5
Age 50-59	2117 (4.4)	1491 (5.2)	42 (3.5)	8 (2.3)
Age 60-69	7352 (15.2)	3930 (13.7)	164 (13.5)	35 (10.0)
Age 70-7	16158 (33.5)	7735 (26.9)	349 (28.7)	86 (24.6)
Age 80-89	17822 (36.9)	10385 (36.2)	496 (40.8)	144 (41.1)
Age 90+	3997 (8.3)	4569 (15.9)	152 (12.5)	74 (21.1)
Ethnicity (%)				
White	43283 (89.7)	25226 (87.8)	1153 (94.8)	332 (94.9)
Mixed	29 (0.1)	22 (0.1)	<5	0 (0.0)
Indian/other southeast asian background	73 (0.2)	50 (0.2)	12 (1.0)	<5
Afrocaribbean/other black background	42 (0.1)	38 (0.1)	<5	0 (0.0)
Chinese	7 (0.0)	8 (0.0)	0 (0.0)	0 (0.0)
Other ethnic group	169 (0.4)	96 (0.3)	<5	0 (0.0)
Unknown	4651 (9.6)	3283 (11.4)	45 (3.7)	16 (4.6)
Deprivation Quintiles (%)				
1 (least deprived)	13227 (27.4)	7317 (25.5)	310 (25.5)	70 (20.0)
2	12336 (25.6)	7090 (24.7)	296 (24.3)	86 (24.6)
3	10331 (21.4)	6333 (22.0)	251 (20.6)	76 (21.7)
4	7569 (15.7)	4799 (16.7)	191 (15.7)	61 (17.4)
5 (most deprived)	4791 (9.9)	3184 (11.1)	168 (13.8)	57 (16.3)

cSCC = cutaneous Squamous Cell Carcinoma, IQR=Interquartile range, CI = confidence interval

a) all metastatic cSCC diagnosed during 2013-2015. Age was taken as age of metastasis diagnosis.

Table 1. Patient demographics of first primary cSCC and first metastatic cSCC from NCRAS, England 2013-2015.

<b>Metastatic cSCC diagnosed 2013-2015</b>	<b>n = 1566</b>
Year primary cSCC diagnosed	
Before 2011	70
2011	103
2012	298
2013	471
2014	409
2015	196
Unknown	19
Year metastasis diagnosed	
2013	479
2014	520
2015	567
Site of primary tumour	
Lip (cutaneous)	54
Eyelid incl. canthus	36
Ear	324
Face	430
Scalp/Neck	308
Trunk incl. perianal	115
Upper limb incl. shoulder	136
Lower limb incl. hip	158
Skin NOS	5
Site of first nodal or distant metastasis (i.e. each patient counted once)	
Neck/Parotid	1155
Axilla	219
Groin	175
Other <sup>a</sup>	7
Distant	10
Distant metastasis overall	37
<b>Time to metastasis</b>	<b>N=1566</b>
Median (days) <sup>b</sup>	262
Range (days) <sup>b</sup>	-93 to 3553
No. patients developed metastasis < 2 years <sup>c</sup> n (%)	1335 (85.2)
No. patients developed metastasis < 3 years <sup>c</sup> n (%)	1455 (92.9)
Metastasis diagnosed prior to or on day of primary** n (%)	102 (6.5)

cSCC = cutaneous squamous cell carcinoma

NOS= not otherwise specified

IQR = Interquartile range

- a) other includes orbital, popliteal or epitrochlear lymph nodes
- b) Diagnosis of primary to diagnosis of metastasis, excluding those where date of primary diagnosis is unknown n=19
- c) if unknown date of primary (n=19), assumes >=3 years given historical data less accurate

Table 2 Main characteristics of metastatic cSCC diagnosed in 2013-2015 in England

Site of primary tumour <sup>a</sup>	Non-metastatic cSCC <sup>b</sup> n=92814		Ratio Male:Female	Metastatic cSCC 2013-2015		Ratio Male:Female	Crude risk of mSCC by primary site as compared to 'face'	
	Males	Females	cSCC	Males	Females	mcSCC	Males	Females
Lip (cutaneous)	882	740	1.2	23	11	2.1	1.67	2.05
Eyelid incl. canthus	643	511	1.3	19	3	6.3	1.89	0.81
Ear	8518	370	23.0	214	10	21.4	1.60	3.73
Face	14691	9807	1.5	230	71	3.2	1.00	1.00
Scalp/Neck	13193	1805	7.3	205	23	8.9	0.99	1.76
Trunk incl. perianal	3393	2317	1.5	62	18	3.4	1.17	1.07
Upper limb incl. shoulder	7735	5884	1.3	54	34	1.6	0.45	0.80
Lower limb incl. hip	2587	7856	0.3	36	63	0.6	0.89	1.11
Skin NOS	8157	3725	2.2	0	0	-	0.00	0.00
All sites	59799	33015	1.8	843	233	3.6	0.90	0.97

cSCC= primary cutaneous squamous cell carcinoma

mcSCC = metastatic cutaneous squamous cell carcinoma

NOS=Not Otherwise Specified

Table 3. Site specific crude risk of metastasis by site of primary cSCC, not including patients who developed metastases from primary tumours prior to 2013. N=93890

- a) Site of primary cSCC if metastatic or first cSCC during period 2013-2015
- b) Primary tumours which have not metastasized during follow up period between 2013-2015

Patient variables	Non metastatic primary cSCC in 2013-2015 n= 92814	Metastatic cSCC where primary diagnosed in 2013-2015 n= 1076	Risk of metastasis by parameter <sup>a</sup>		Risk of death, including site		Risk of death excluding site, including risk of metastasis	
			HR (95% CI)	P value	HR (95% CI)	p value	HR (95% CI)	P value
Metastasis (yes vs. no)	0	1076	-		-		2.44 (2.21-2.67)	<0.001
Age band (years)								
<50	1484	13	0.71 (0.41-1.24)	0.225	0.35 (0.25-0.47)	<0.001	0.34 (0.25-0.46)	<0.001
50-59	3941	36	0.82 (0.58-1.16)	0.262	0.47 (0.39-0.55)	<0.001	0.46 (0.39-0.55)	<0.001
60-69	12585	142	0.99 (0.81-1.21)	0.904	0.57 (0.52-0.63)	<0.001	0.57 (0.52-0.62)	<0.001
70-79	28206	317	REF		REF		REF	
80-89	35330	443	1.23 (1.07-1.43)	0.005	2.50 (2.38-2.62)	<0.001	2.51 (2.39-2.64)	<0.001
90+	11268	125	1.35 (1.09-1.66)	0.005	5.56 (5.26-5.87)	<0.001	5.62 (5.32-5.93)	<0.001
Sex								
Men	59799	843	1.79 (1.52-2.10)	<0.001	1.21 (1.16-1.27)	<0.001	1.28 (1.23-1.33)	<0.001
Females	33015	233	REF		REF		REF	
Deprivation quintile								
1 (least deprived)	24922	277	REF		REF		REF	
2	23470	274	1.07 (0.90-1.27)	0.417	1.09 (1.04-1.15)	0.001	1.09 (1.04-1.15)	0.001
3	20060	228	1.04 (0.87-1.25)	0.632	1.16 (1.09-1.22)	<0.001	1.16 (1.10-1.22)	<0.001
4	14772	179	1.14 (0.94-1.38)	0.193	1.29 (1.22-1.37)	<0.001	1.29 (1.22-1.36)	<0.001
5 (most deprived)	9547	161	1.64 (1.35-2.00)	<0.001	1.41 (1.33-1.50)	<0.001	1.40 (1.31-1.49)	<0.001
Site <sup>a</sup>								
lip	1622	34	1.85 (1.29-2.63)	0.001	0.90 (0.76-1.06)	0.192	-	
eyelid	1154	22	1.54 (1.00-2.38)	0.049	0.97 (0.82-1.15)	0.733	-	
ear	8888	224	1.70 (1.42-2.03)	<0.001	1.03 (0.96-1.10)	0.422	-	
face	24498	301	REF		REF		-	
scalp/neck	14998	228	1.08 (0.91-1.29)	0.375	1.14 (1.08-1.21)	<0.001	-	
trunk	5710	80	1.18 (0.92-1.51)	0.188	1.03 (0.94-1.12)	0.551	-	
upper limb	13619	88	0.54 (0.43-0.69)	<0.001	0.92 (0.86-0.97)	0.005	-	
lower limb	10443	99	0.96 (0.76-1.21)	0.715	0.87 (0.81-0.93)	<0.001	-	
other/unknown	11882	0	-		1.06 (1.01-1.13)	0.030	-	
Immunosuppression prior to primary cSCC 2013-2015	5355	113	1.99 (1.64-2.42)	<0.001	2.15 (2.02-2.29)	<0.001	2.14 (2.01-2.28)	<0.001

HR= Hazard ratio; CI =confidence interval;

a) The site is the skin area of first cSCC or primary cSCC if metastatic;

Table 4: Cox proportional multivariate hazards analysis of the 93,890 patients who were diagnosed with a primary cSCC in 2013-2015. All models include all variables in columns. Survival calculations started the date of the first cSCC diagnosed in 2013-2015.