NCIN
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Anatomical distribution of sites of malignant melanoma including non-sun exposed sites - incidence and trend

Skin SSCRG

January 2012

SOUTH WEST PUBLIC HEALTH OBSERVATORY

Aims and objectives

To update the trends in anatomical distribution of malignant melanoma in England and consider the difference between sun exposed and non sun exposed anatomical sites.

Introduction

The majority of malignant melanoma are located in sun exposed anatomical sites but some are internal or in anatomical sites not exposed to sun.
The South West Cancer Intelligence Observatory looked at trends of sun exposed malignant melanoma (http://www.ncin.org.uk/publications/data_briefings/skin_cancer_registration.aspx)as well as a recently published paper by S.C Wallingford et al (BJD, 2011). Both show an increasing trend in malignant melanoma incidence and that the most common anatomical site for females was the lower limbs while the trunk was the most common for males.
Little is known about non sun exposed malignant melanoma and we felt that it was of interest to see if the trends over the last twenty years (1990-09) were the same for these cancers as that of malignant melanoma of the skin.

Method

Cases were extracted from the National Cancer Data Repository using a morphology code corresponding to malignant melanomas (M87203, M87213, M87223, M87233, M87303, M87403, M87413, M87423, M87433, M 87443, M87453, M87613, M87703, M87713, M87723, M87733, M87743, M87803). The years covered expand from 1990 to 2009. These data covered 8 English Cancer Registries (Table 3).

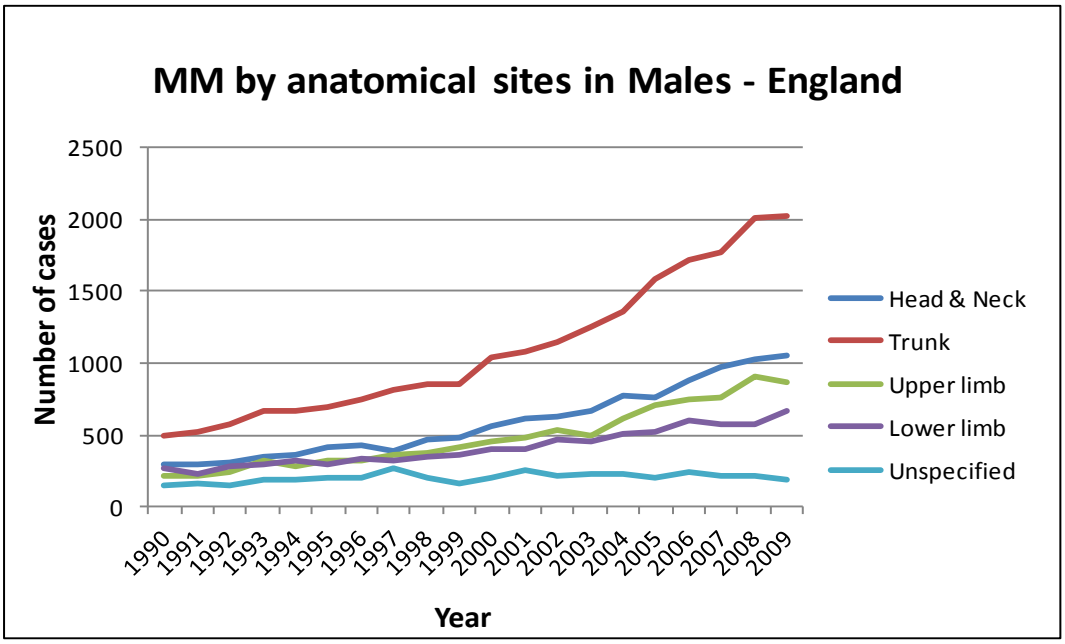
Two main types of analyses were undertaken
Anatomical site of malignant melanoma defined by the 4 digit ICD 10 code (C43) and grouped as head & neck (C430 to 434), trunk (C435), upper limb (C436), lower limb (C437) and unspecified (C439).

Anatomical sites for all cases of malignant melanoma and defined by the morphology description and the ICD10 codes. The data were classified as skin (C43) and non sun exposed as described in Table 2. Crude incidence rates were calculated using population data for England. Data have been aggregate for 3 years in order to accommodate small number variation.

Results

1. Changes in anatomical distribution of skin cancer malignant melanoma

Figure 1: Trend of skin malignant melanoma anatomical sites males (A) and females (B)



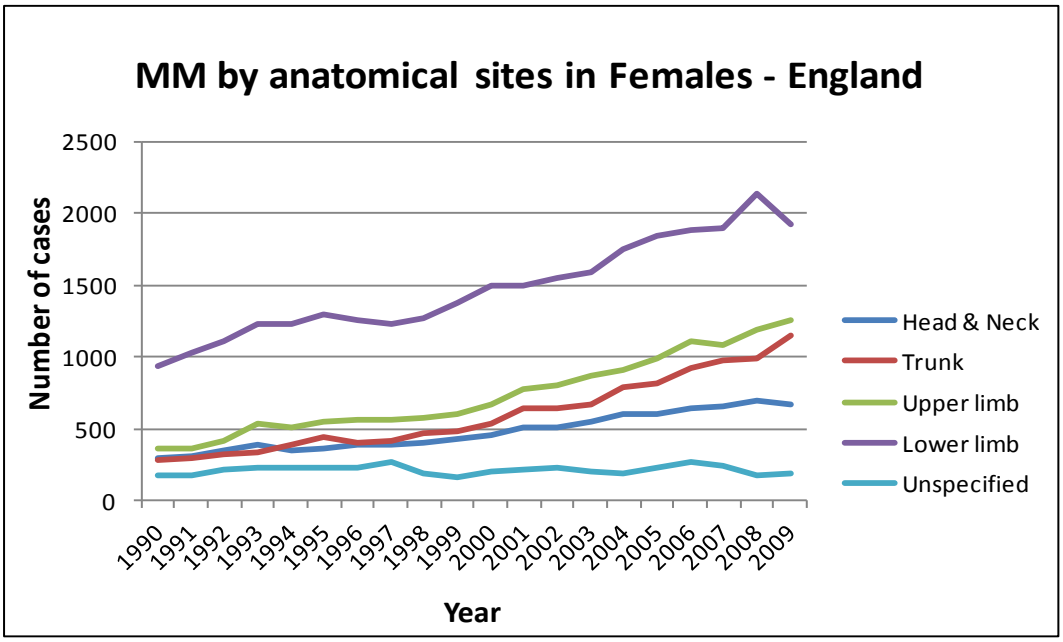


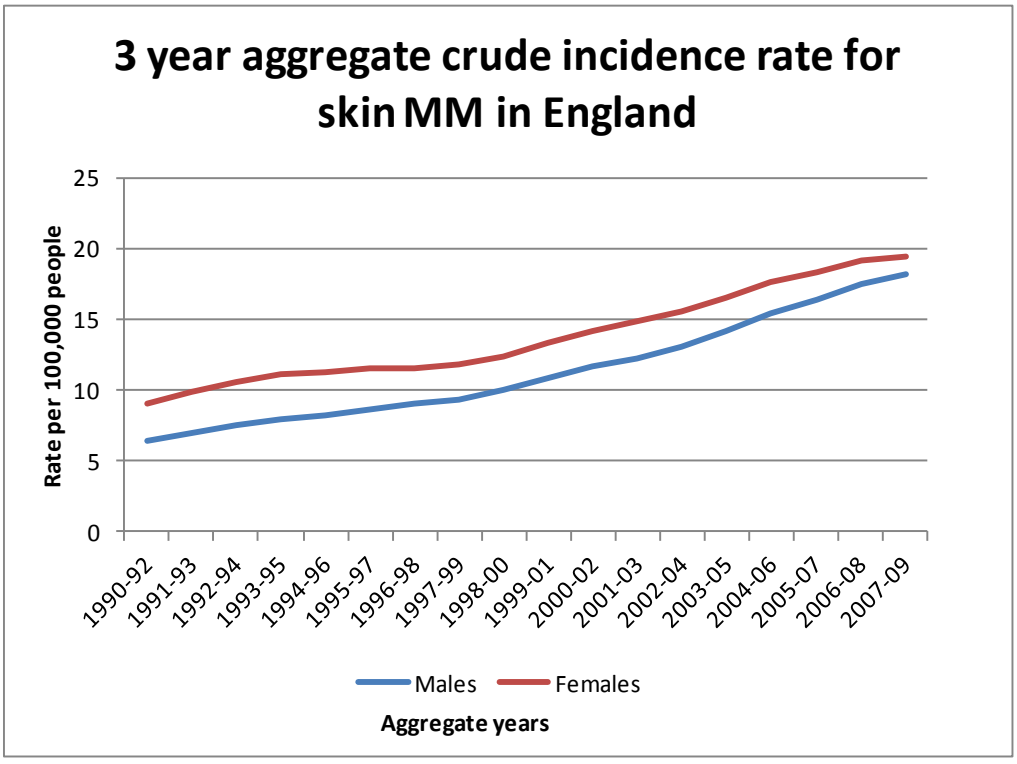
Table 1: Percentage change in the number of cases per anatomical sites over the last 20 years

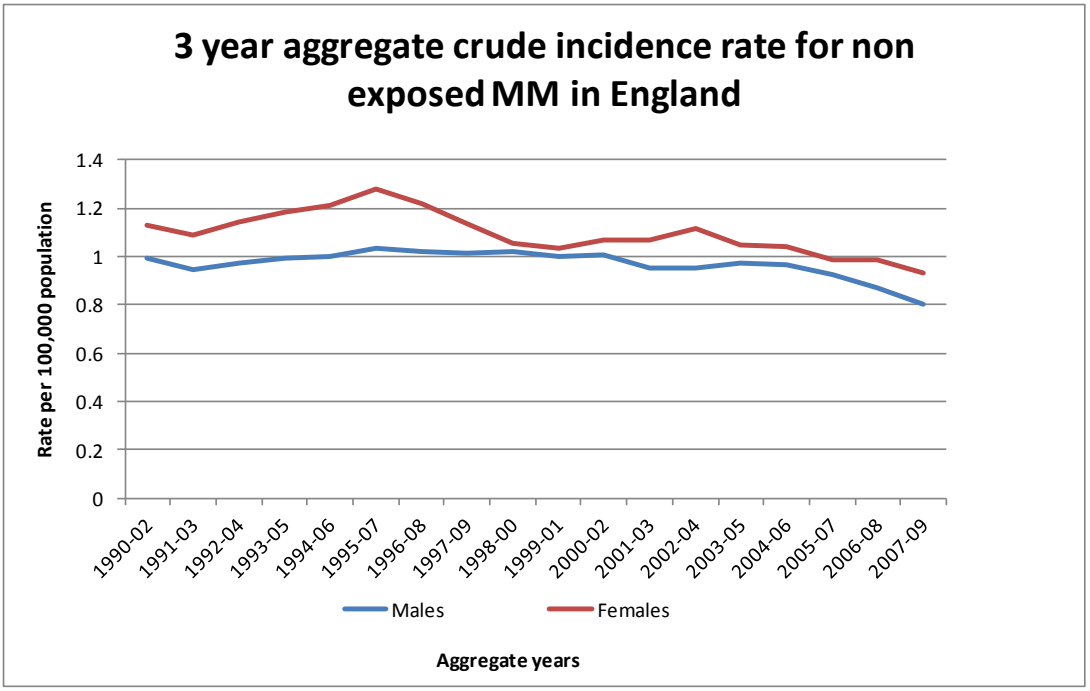
	Male			Female		
Tumour site	No of cases per year		% change	No of cases per year		% change
	1990	2009		1990	2009	
Head & neck	300	1055	252	300	670	123
Trunk	492	2027	312	286	1148	301
Upper limb	210	868	313	359	1259	251
Lower limb	266	669	152	940	1924	105
Unspecified	155	195	26	175	185	6

There is an increasing number of cases over the last 20 years for all anatomical sites and this is high on the trunk for both males and females. For males, trunk remains the most frequent anatomical site for malignant melanoma in term of numbers but despite a lower number of cases presenting on the upper limbs, this site is also rapidly increasing in frequency. In females, 37% (1924/5186) of cases occurs on the lower limb but the percentage of changes in number is higher for head and neck, upper limb and trunk. This is likely to be as a result of behaviour towards sun exposure.

2. Trend distribution of skin malignant melanoma (A) and other malignant melanoma (B)

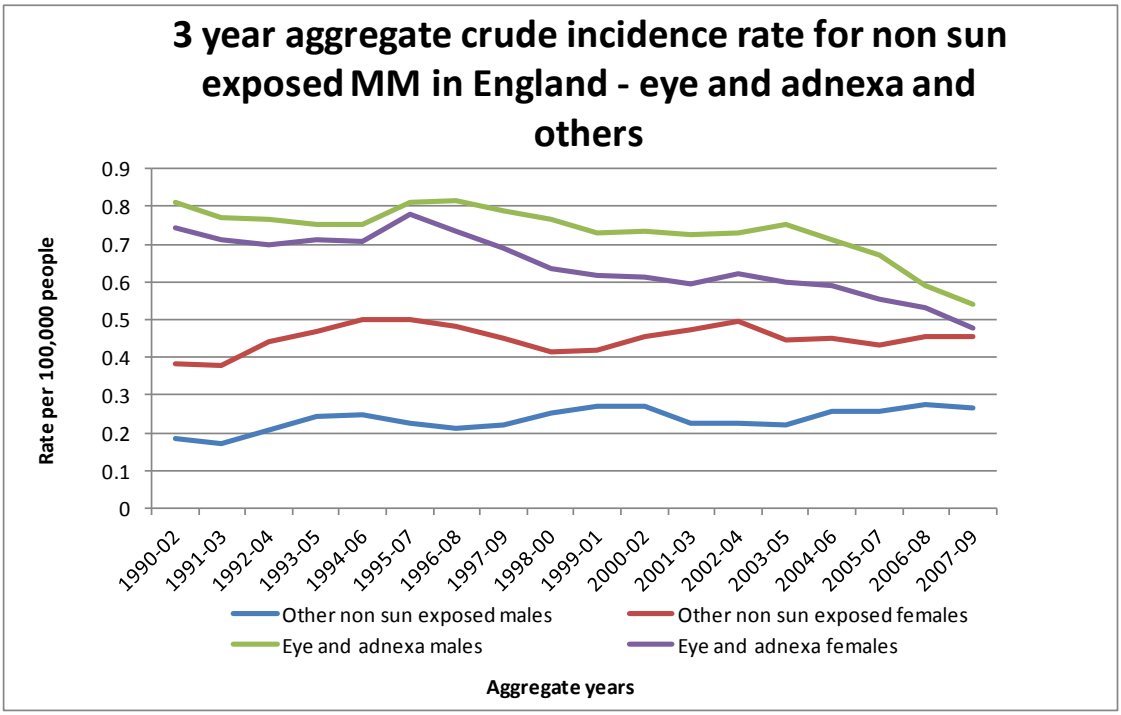
Figure 2: Trend of malignant melanoma from the skin (A) and from other anatomical sites (B)





The figure 2 A shows an increase of the crude incidence of malignant melanoma on sun exposed anatomical sites such as skin (ICD 10 code: C43) for both males and females. It also shows a reduction in the incidence gap between males and females with male incidence increasing faster than that of females. In contrast, the non sun exposed malignant melanoma (Figure 2 B) has a low crude incidence compared to malignant melanoma of the sun exposed anatomical sites and shows a decrease in the crude incidence over the last 20 years for both males and females. There are more female specific non sun exposed malignant melanoma (1100) than male's (114).
A breakdown of data by malignant melanoma of the eye and adnexa and other non sun exposed anatomical sites show that there is a decrease in incidence of malignant melanoma of the eye and adnexa while other body sites shows a small increase (Figure 3).

Fig 3: Trend of malignant melanoma from non sun exposed anatomical site– eye and adnexa and others



Conclusion

The increasing trend of malignant melanoma for both, males and females, in sun exposed anatomical sites compared to the flat trend of non sun exposed malignant melanoma confirms an association between sun exposure and the development of malignant melanoma of the skin.
The gender specific anatomical site of sun exposed malignant melanoma may represent the exposure differences and may have important relevance for prevention campaigns.
The progressive decrease in the crude incidence of malignant melanoma of the eye and adnexa could be explained by a change in coding or disease definition but it could have another clinical reason which is more likely due to the gradual reduction of incidence. The wider use of sun glasses might be a contributing factor.

Appendix

Table 2: Non skin malignant melanoma as defined by morphology codes and number over 1990-2009

ICD 10 definition	Number of cases over 1990-2009
Malignant neoplasm of eye and adnexa	6725
Malignant neoplasm of vulva	817
Malignant neoplasm of nasal cavity and middle ear	671
Malignant neoplasm of anus and anal canal	262
Malignant neoplasm of vagina	202
Malignant neoplasm of other and ill-defined sites	180
Malignant neoplasm of accessory sinuses	112
Malignant neoplasm of penis	93
Malignant neoplasm of rectum	66
Malignant neoplasm of oesophagus	55
Malignant neoplasm of palate	51
Malignant neoplasm of nasopharynx	46
Malignant neoplasm of other and unspecified urinary organs	39
Malignant neoplasm of gum	26
Malignant neoplasm of cervix uteri	21
Malignant neoplasm of other and unspecified male genital organs	20
Malignant neoplasm of meninges	18
Malignant neoplasm of small intestine	17
Malignant neoplasm of other and unspecified parts of mouth	16
Malignant neoplasm of stomach	13
Malignant neoplasm of colon	10
Malignant neoplasm of bronchus and lung	9
Malignant neoplasm of parotid gland	9
Malignant neoplasm of brain	7
Malignant neoplasm of lip	6
Malignant neoplasm of other and unspecified parts of tongue	6
Malignant neoplasm of other connective and soft tissue	6
Malignant neoplasm of breast	5
Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx	5
Malignant neoplasm of other endocrine glands and related structures	5
Malignant neoplasm of other and ill-defined digestive organs	4
Malignant neoplasm of spinal cord, cranial nerves and other parts of centra	4
Malignant neoplasm of bladder	4
Malignant neoplasm of larynx	3
Malignant neoplasm of oropharynx	3
Malignant neoplasm of ovary	3
Malignant neoplasm of pancreas	2

Malignant neoplasm of floor of mouth	2
Malignant neoplasm of other and unspecified female genital organs	2
Malignant neoplasm of thyroid gland	2
Malignant neoplasm of adrenal gland	1
Malignant neoplasm of peripheral nerves and autonomic nervous system	1
Malignant neoplasm of base of tongue	1
Malignant neoplasm of bone and articular cartilage of other and unspecified	1
Malignant neoplasm of gallbladder	1
Malignant neoplasm of heart, mediastinum and pleura	1
Malignant neoplasm of hypopharynx	1
Malignant neoplasm of liver and intrahepatic bile ducts	1
Malignant neoplasm of retroperitoneum and peritoneum	1
Malignant neoplasm of testis	1
Malignant neoplasm of tonsil	1

Table 3: List of Cancer Registries

ECRIC	EASTERN CANCER REGISTRATION & INFORMATION CENTRE
NWCIS	NORTH WEST CANCER INTELLIGENCE SERVICE
NYCRIS	NORTHERN & YORKSHIRE CANCER REGISTRY & INFORMATION SERVICE
OCIU	OXFORD CANCER INTELLIGENCE UNIT
SWCIS	SOUTH WEST CANCER INTELLIGENCE SERVICE
TCR	THAMES CANCER REGISTRY
TrCR	TRENT CANCER REGISTRY
WMCIU	WEST MIDLANDS CANCER INTELLIGENCE UNIT

The NCIN is a UK-wide initiative, working to drive improvements in standards of cancer care and clinical outcomes by improving and using the information collected about cancer patients for analysis, publication and research.

Sitting within the National Cancer Research Institute (NCRI), the NCIN works closely with cancer services in England, Scotland, Wales and Northern Ireland. In England, the NCIN is part of the National Cancer Programme.

Our aims and objectives cover five core areas to improve the quality and availability of cancer data from its collection to use:

- **Promoting efficient and effective data collection throughout the cancer journey**
- **Providing a common national repository for cancer datasets**
- **Producing expert analyses, to monitor patterns of cancer care**
- **Exploiting information to drive improvements in cancer care and clinical outcomes**
- **Enabling use of cancer information to support audit and research programmes**