

Cost of skin cancer in England, including projections to 2020 (funded by NAEDI)

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Skin Cancer Hub
 Information to support prevention and early diagnosis

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Skin Cancer Hub launch
 New 'Skin Cancer Profiles' map skin cancer for every Local Authority in England
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Schools
 School professionals play a large part in helping to increase understanding and awareness of skin cancer among young people. The Skin Cancer Hub is a great source of the latest evidence, information and tools available to help teachers and other educational professionals raise awareness of skin cancer prevention and early diagnosis.

What's going on in my area, and how can I get involved?
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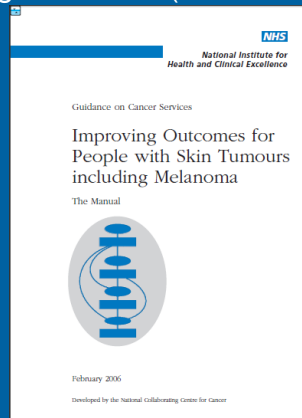
What can I do to help increase skin cancer awareness and understanding among my students?
 Skin cancer is the commonest type of cancer in the UK, so it is important that we know what the warning signs are and be aware of what we need to do in order to prevent developing the condition. Learn how to identify the appearance of moles using the 'ABCD' rule and find out more about prevention in our [turning about skin cancer](#) section.

You may also want to Visit our [Resources](#) section, where you will find lots of useful information and documents about skin cancer prevention and early diagnosis for schools. You can also [upload details](#) of your own resources or any other information you want to share.

If your school is involved in a project aimed at raising awareness of skin cancer prevention and early diagnosis, please tell us about it by filling in our [simple online form](#).

Commissioning Challenges for Skin Cancer

- Implementation of NICE Commissioning Guidance (2006 and 2010)
- Ensure enhanced performance against
- Skin Cancer Standards
- Implementation of NICE Prevention
- Guidance
- Implementation of Sun-bed Legislation



Commissioning

- Needs assessment
- Evidence base/guidance for service provision or interventions
- Assessment of current service provision (including quality)
- **Allocate money**
- Negotiate service change
- Local Quality Assurance

Challenges for Skin Cancer improvement

- Barely touches commissioning radar
- Not perceived as a major public health issue (doesn't kill)
 - Except occasional flurries about prevention
- Not much inpatient activity
- Not seen as a burden on NHS resources



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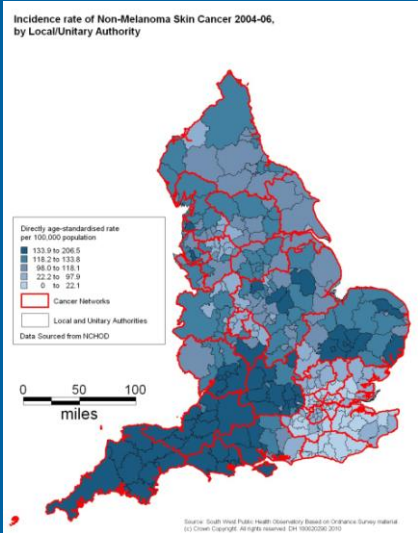
Comparison of average number of new skin cancer cases and deaths with other types of cancers in the South West, 2001–2005

Cervix ~260 c.f. Melanoma ~1200
Lung ~2900 c.f. NMSC ~11,000

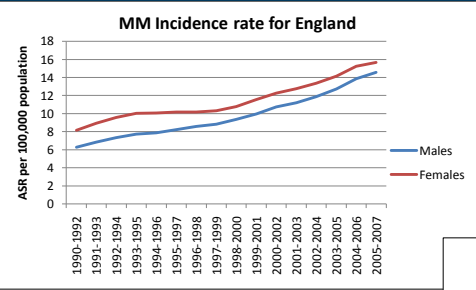
Cancer types and International Classification of Disease 10 code	Average annual number of new registered cases (2001-2005)		Average annual number of deaths (2001-2005)	
	Female	Male	Female	Male
Bladder C67	275	706	153	292
Breast C50	4512	0	1195	0
Cervix C53	260	0	93	0
Colorectal C18-C20	1657	1847	720	783
Leukaemia C91-C95	329	410	190	231
Lung C33-C34	1169	1756	971	1503
Melanoma C43	627	550	93	109
Non-Melanoma Skin Cancer C44	4923	5927	20	30
Non-Hodgkins Lymphoma C82-C85, C96	525	626	211	262
Ovary C56	751	0	442	0
Prostate C61	0	3877	0	1056
Upper Gastro-Intestinal C15, C16, C25	909	1264	798	1051

Source: South West Public Health Observatory

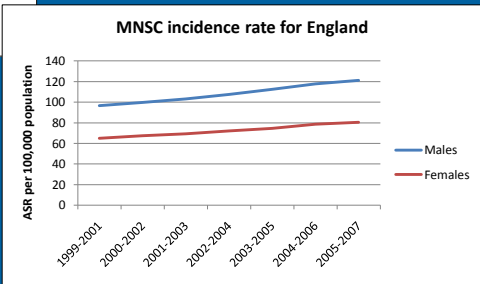
The 'incidence' of non-melanoma skin cancer



Incidence of Skin Cancer Cases



Source: NCDR



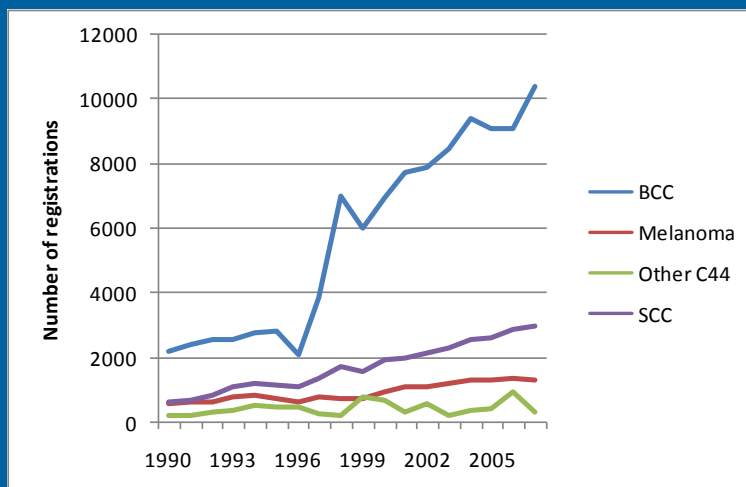
Forecast

Current estimate in an excess of 8,000 new cases of malignant melanoma per annum in England (ONS)

Diffey (BJD, 2004; 151: 868-872))

Predicts that in 30-50 years the rate of melanoma in the UK could be around 2 to 3 times those presently observed.

Recorded Skin Cancer in the South West



Non Melanoma Skin Cancer:

Squamous Cell Carcinoma and Basal Cell Carcinoma

Very high and underestimated number of Non Melanoma Skin Cancers

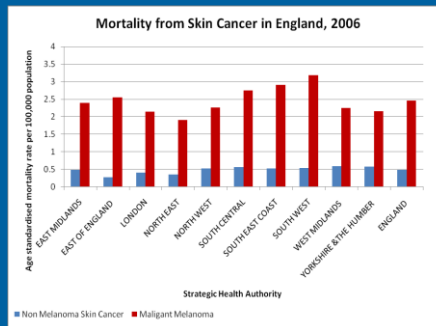
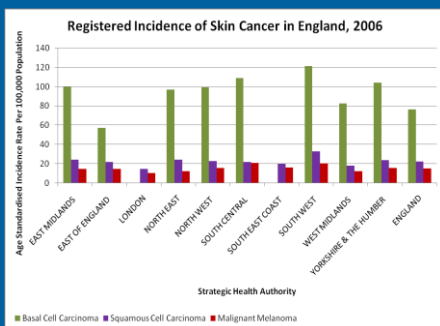
- 10 times more common than Malignant Melanoma
- Often arise in surgically difficult anatomical sites
- Associated with high morbidity and can impact on quality of life
- More complex operations performed for NMSC than MM
- Many dealt with by GPs
- Metachronous tumours
- Burden on the NHS



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Skin cancer incidence and mortality in England



Data from the UK Association of Cancer Registries national database for registered incidence and from the Clinical and Health Outcomes Knowledge Base web site (<http://www.nchod.nhs.uk>) for mortality are shown for 2006 by Strategic Health Authority



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Survey of registration practices

- Data are received via 3-7 methods , with an average of 4.5 methods per registry. **Pathology and death certificates are the main data sources.**
- Nearly all cancer registries record **staging information** for MM but **few record it for SCC and BCC**. Some registries receive staging information but do not enter it on their data computer systems.
- Of the registries who replied, **5 record more than the first SCC, 3 more than the first BCC** and 4 more than the first in situ NMSC. In addition the rules for NMSC registration differs across all the registries.
- The **main barrier** to the registration of additional SCC, BCC or in situ NMSC per patient, **is the cost of the process**. It is believed that an efficient automated electronic system would enable registries to make better use of data collected in Trusts.

Skin cancer: staging information held on cancer registry databases

	BCC	SCC		MM		
	TNMpT	TNMpT	Clark Level	TNMpT	Clark	Breslow
NYCRIS						
Trent						
ECRIC						
Thames						
OCIU						
SWCIS						
WMCIU						
NWCIS						
WCISU						
Scotland						
NICR						

 Not held
 Partial coverage
 Complete or near complete coverage
 No information

Cost of Skin Cancer in England

Prof Steve Morris from UCL Research Department of Epidemiology and Public Health, University College London was commissioned to calculate the the current financial cost of skin cancer in England.

- Three methods were considered:
- Bottom up data
- Top down data
- PCT spending data



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Bottom up approach

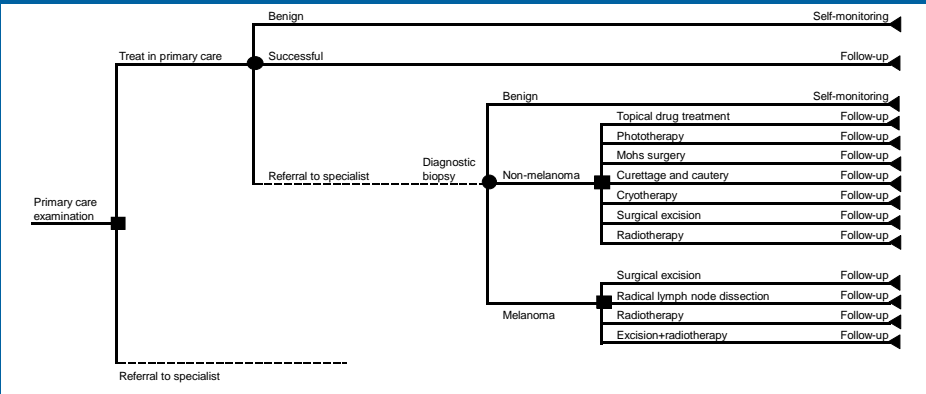
- Using a simplified model of skin cancer care in the NHS
- Based on guidelines produced by the BAD for the management of MM (Marsden et al 09), BCC (Telfer et al 08), SCC (motley et al 09).
- On Health guides from the Map of Medicine website for MM and BCC.
- Using Unit costs obtained from published national average for England, published reports etc (Keogh-Brown et al 2007, Thomas et al, 2000, Curtis 2008) etc.
- Using NHS reference costs from 2 time period (different HRG Healthcare Resource Groups) classification system.
- MM Data from ONS 2006-08 and MNSC estimates using SWPHO model
- Assumption of 12 cases of benign cases for every MM case (Goulding et al 2009, Jackson et al, 2000)



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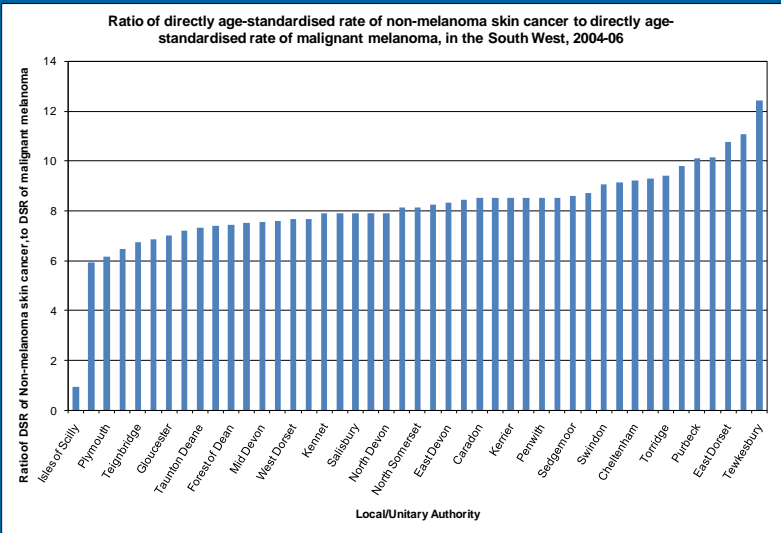
Simplified care pathway



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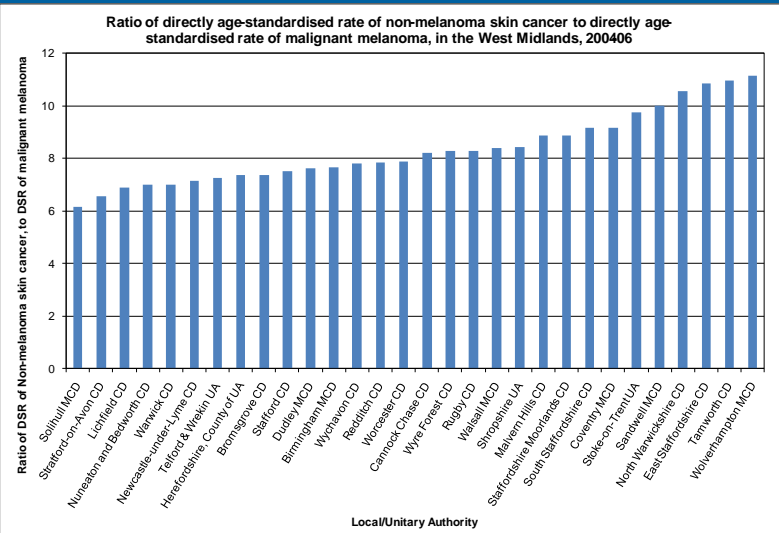
Estimating the missing incidence



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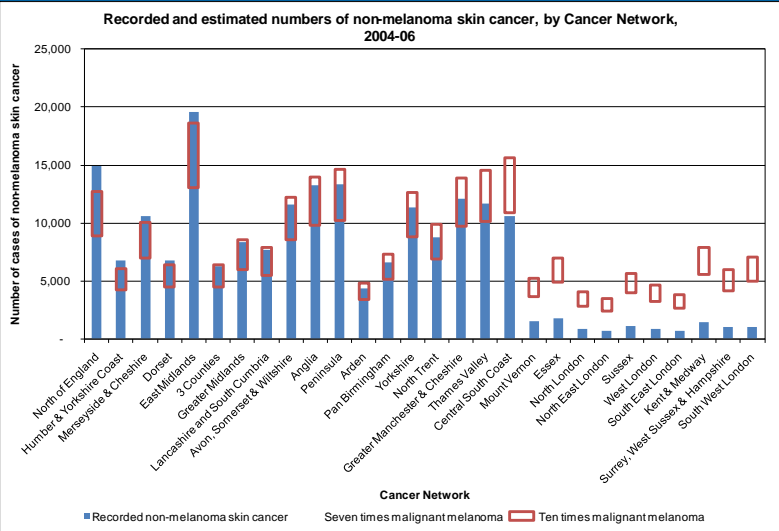
Estimating the missing incidence



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Applying estimates to cancer networks



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The numbers

- 2004-06 data from NCHOD
- Areas with exceptionally low rates: 3,981 cases per year
- Revised estimate: 13,025 to 18,607 cases per year
- Estimate for England: 72,788 to 78,370 cases per year
- Actual recorded in England: 63,744 cases per year



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Bottom up approach - results

- Expected cost per case for MM and NMSC: £2,607 and £889 respectively
- Expected cost per benign case was £181.
- Based on a total of 8,658 of MM, 73,593 of NMSC and 101,720 benign cases.
- Total financial cost to the NHS were calculated to be £106,418,000.



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Top down data -expanded

- NHS cost were calculated using data on the number of general practitioner consultations, inpatient stays, day cases and outpatients visits due to skin cancer.
- Cost of skin cancer comprises costs to NHS, cost incurred by patients and indirect cost
- Unit cost were taken from published national sources and applied to each category to give an overall estimate of the cost to the NHS of skin cancer.
- Indirect cost arising from individual inability to function in their usual role were estimated from incapacity benefits claims and death registration from Skin Cancer
- 2008 estimates projected to 2020 based on published estimates of the future incidence of MM (Diffey 2004)



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Top down data - results

- Based on 8,656 MM and estimated 73,593 NMSC in 2006
- The total cost of Skin Cancer in England is estimated to be approximately £270 million.
- NHS costs were estimated to be £112.4 million (42%). The remainder being attributable to patients costs, indirect morbidity costs, and indirect mortality cost.
- 55% of the total cost of skin cancer is due to malignant melanoma.
- Projection to 2020: 1.7 times the number of MM (A models)
 - » 1.65 -1.60 (B or C models) (Diffey. 2004)
 - » NHS costs for skin cancer are projected to £190.5 million, £185.5 million and £180.1 million in 2020 for A,B,C
 - » Total costs are projected to £455.1 million, £443.2 million, £432.2 million in 2020 for A,B,C



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PCT spending data

- Based on the establishment of a dataset containing variable on incidence of skin cancer, skin cancer mortality and NHS expenditure on skin cancer for all PCTs in England. Various sources of data were used including Extrapolation of NMSC was done using a methodology developed by SWPHO. 2008-09
- Data on incidence were obtained from the National Centre for Health Outcomes Development (NCHOD) – 2004-06
- Counts of MM by PCT were obtained from cancer registries and NMSC estimates used SWPHO model of calculation.
- Data on Skin Cancer expenditure were obtained from the 2008-09 Cancer Network Workbook version 1.0 from the National Programme Budget project webpages (doh)
- Skin Cancer expenditure per 1000 population for each year was calculated based on raw population estimate for PCTs.



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PCT spending data - results

- Total national spending on skin cancer in England in 2006/7, 2007/8 and 2009/10 were £95,012,000, £103,958,000, and £105,194,000. or £1882, £2050 and £2053 per 1000 population, respectively.
- Skin Cancer represented 2% of the total national spending on all cancers and tumours.
- The data suggest that in general skin cancer spending by PCTs and both skin cancer incidence and mortality are positively correlated



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Overall costs for England obtained from 3 methods

- Total financial cost to the NHS were calculated to be £106,418,000 (bottom up approach)
- NHS costs were estimated to be £112.4 million (bottom down approach)
- Total national spending on skin cancer in England £105,194,000 (PCT spending data)



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Limitations

- Under-recording of cases
- Underestimation of cases
- Coding issues (are the right code used by clinicians) and implication on cost
- Difficult estimating the number of cases in each path
- Difficult assessing pathways



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Percentage of treatment given and tumour type

	Tumour type		
	BCC	SCC	MM
	%	%	%
Topical treatment	3	2	0
Curretage	7.5	4.5	0
Excision and direct closure	56	55	85
Complex repair	26	35	18

Note: % do not add up to 100

Source: Assessment of skin cancer presentation in the South West and Hampshire in 2008



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Estimate of true cancer numbers from SWPHO Skin Cancer Project

	No of cases (SWCIS)	
	2008 (CR)	2009 (SCP)
BCC	13683	19447
SCC	3770	5352
Additional data not entered yet	0	7000
Total	17453	31799

Source, SWPHO

CR; Cancer Registry ; SCP Skin cancer project



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