Cost of skin cancer in England

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Background

- Incidence of and mortality from skin cancer are increasing each year
- Malignant melanoma have increased by a larger amount than many other major cancers in recent years
- Increase awareness of health impact and growing interest in its financial costs
- Cost of illness study funded by SWPHO as part of the NAEDI initiative

Aims

- Investigate cost of skin cancer
  - NHS cost
  - Non-NHS cost
- Using to approaches
  - Top-down (update Morris et al., 2009)
  - Bottom-up
- Compare with Programme Budgeting Data
- Projections of skin cancer costs to 2020

Methods – NHS cost

- Top-down approach
  - Assign national all-cause expenditure data from administrative sources to skin cancer (Hospital Episode Statistics; Morbidity Statistics from General Practices; Cancer Statistics, ONS)
  - Unit cost taken from published national sources (PSSRU; NHS Reference Cost Data)
  - Separately for malignant melanoma and other malignant neoplasms of the skin
  - Estimates used to estimate true incidence of non-melanoma (SWPHO)

Methods – NHS cost

- Bottom-up
  - Cost of care incurred by individual patients receiving skin cancer treatment, aggregated up to national levels based on number of patients following each treatment pathway.
  - Identify care pathways (Literature Search; Clinical guidelines; Map of Medicine; Expert Opinion)
  - Populate pathway model (Literature Search; Administrative Database; Relevant Websites)
  - Multiplying the expected costs per case by the total number of cases (Cancer Statistics, ONS; SWPHO)

Methods – Non-NHS Costs

- Cost incurred by patients in the receipt of care
  - Travel and time cost (Literature Search)
- Morbidity costs
  - Lost working days due to skin cancer (Department of Work and Pension; Average Earning, ONS)
- Mortality costs
  - Lost working life years due to skin cancer (Mortality Statistics, ONS; Retirement Age, ONS; Employment, ONS)

Methods – Costs in 2020

- We project our 2008 cost estimates out to 2020 based on published estimates of the future incidence of melanoma (Diffey, 2004)

- We base our projections on the future incidence of melanoma only, given uncertainties surrounding the true incidence of non-melanoma skin cancer

- Our estimates of the incidence of non-melanoma skin cancer are assumed to be proportional to the cases of melanoma.

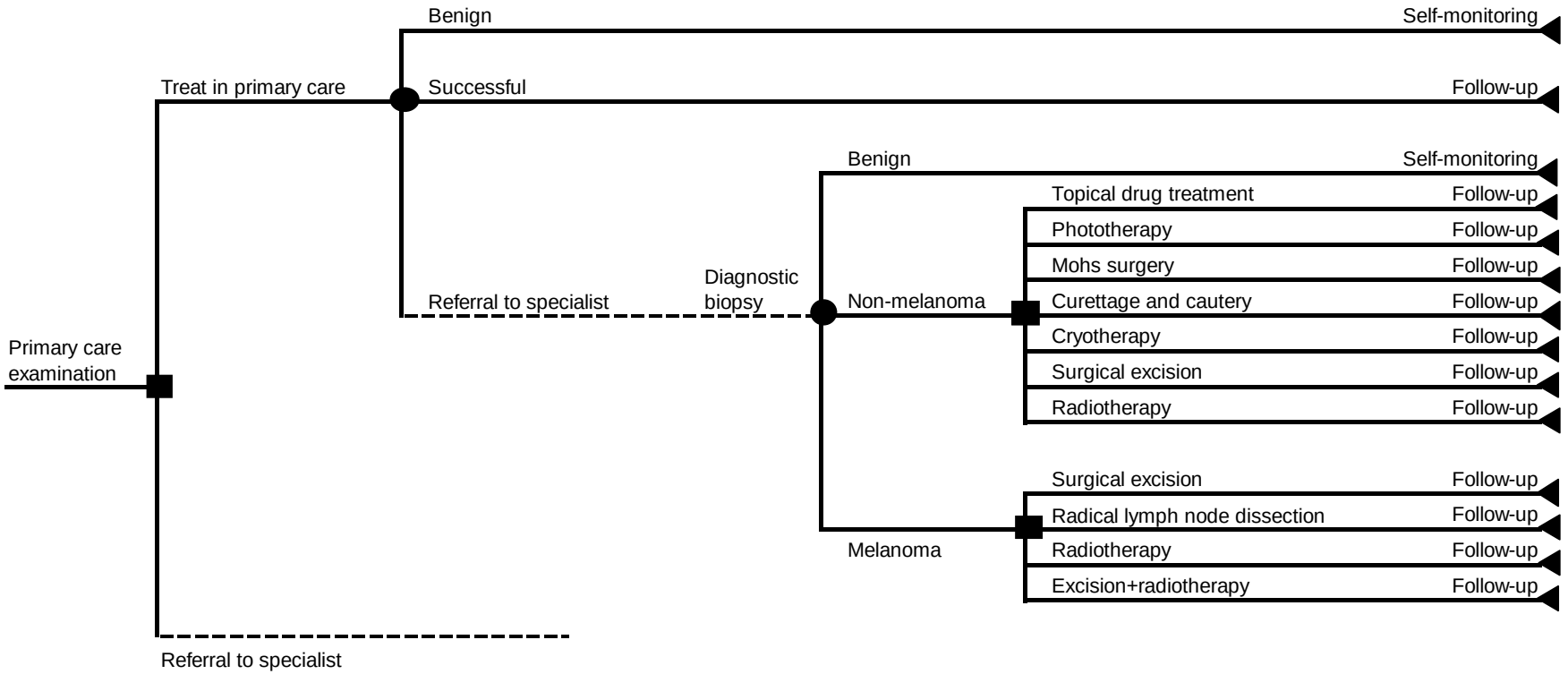
Results – NHS cost

- Top-down approach

	Malignant melanoma of skin		Other malignant neoplasms of skin		All skin cancers	
	£000	% NHS	£000	% NHS	£000	% NHS
GP consultations	1,077	4.9	4,435	4.9	5,511	4.9
Inpatient stays	9,098	41.1	23,273	25.8	32,372	28.8
Day cases	2,465	11.1	22,849	25.3	25,314	22.5
Outpatient attendances	9,522	43.0	39,684	44.0	49,206	43.8
NHS costs	22,162	100	90,241	100	112,403	100

Results – NHS cost

- Bottom-up approach



Results – NHS cost

- Top-down
  - NHS total cost: £112.4 million
  - Mean cost per melanoma case: £2,560
  - Mean cost per non-melanoma case: £1,226

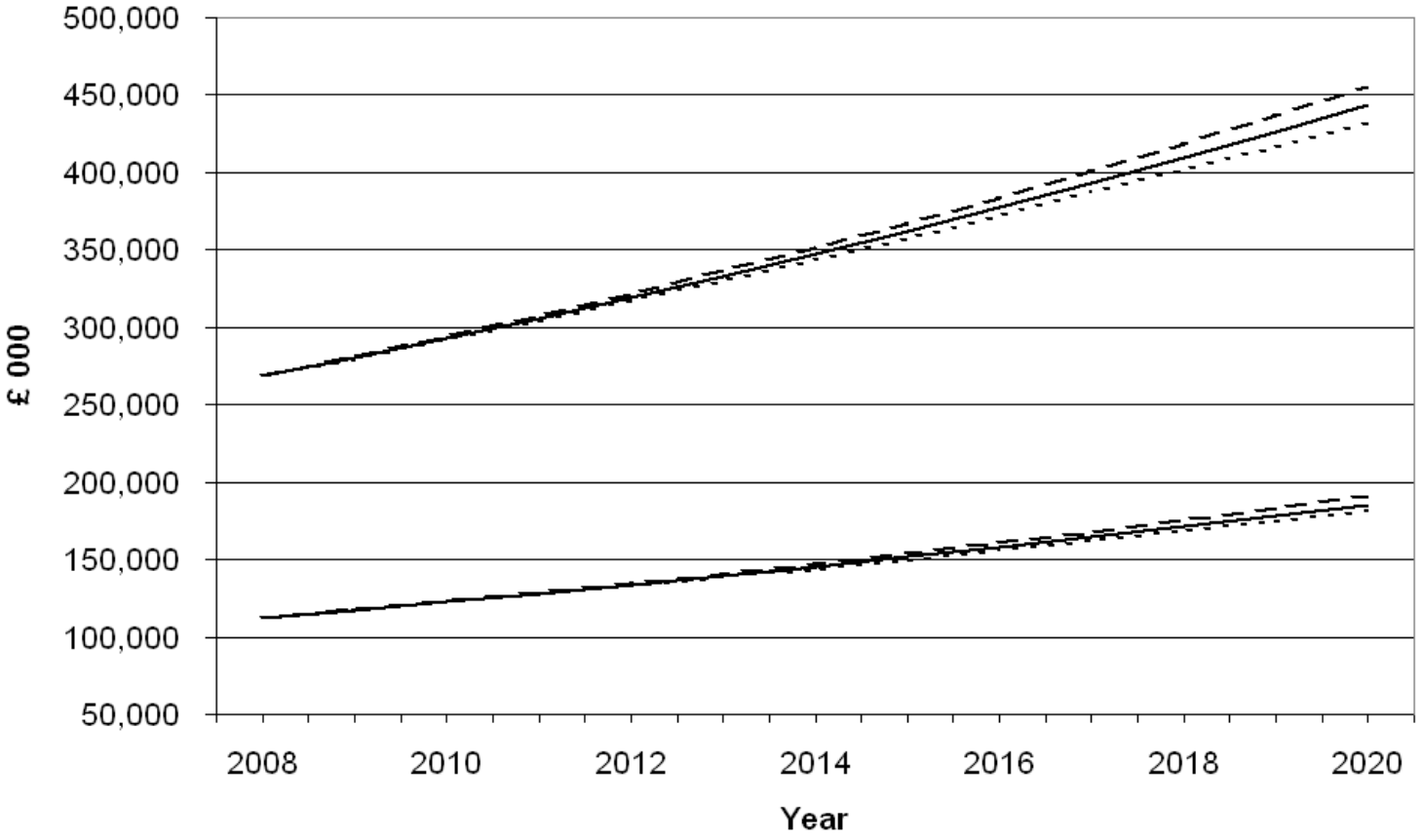
- Bottom-up
  - NHS total cost: £106.4 million
  - Mean cost per melanoma case: £2,607
  - Mean cost per non-melanoma case: £889

- Programme Budgeting Data 07/08: £104.0 million
- Programme Budgeting Data 08/09: £105.2 million

Results – Non-NHS cost

	Malignant melanoma of skin		Other malignant neoplasms of skin		All skin cancers	
	£000	% total	£000	% total	£000	% total
Patient costs	3,380	2.1	14,326	13.1	17,706	6.6
Indirect morbidity costs	20,489	12.9	-	0	20,489	7.6
Indirect mortality costs	113,278	71.1	4,706	4.3	117,983	43.9
Non-NHS cost	137,147	86.1	19,032	17.4	156,178	58.1
NHS costs	22,162	13.9	90,241	82.6	112,403	41.9
Total cost	159,308	100	109,273	100	268,581	100

Results – Projections to 2020



The lower set of lines show projected NHS costs and the upper set show projected total costs. In both sets the dashed line assumes increasing lifetime risk of melanoma (scenario A), the solid line assumes stabilisation in lifetime risk of melanoma (scenario B) and the dotted line assumes falling lifetime risk of melanoma (scenario C). Data from Diffey, 2004

What does this add?

- Programme Budgeting Data provides estimates of costs by disease category in England
- This study
  - Allows disaggregating NHS costs
  - Includes non-NHS costs
  - Estimates projections to 2020

Concluding remarks

- Comparability among 3 estimates
- Costs of skin cancer are substantial
  - Excess of those associated with multiple sclerosis and migraine, for instance
- Costs are increasing significantly over time
- CoI studies show economic burden of disease, but we need evidence on cost-effectiveness studies to make prioritisation decisions