

# The estimated costs – economic and human – of skin cancers to New Zealand

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**Abstract.** This presentation summarises a report in 2009 to the Cancer Society of New Zealand. The Cancer Society required estimates of the costs to New Zealand of skin cancers, updating a report on this in 2000 (O’Dea, 2000). Skin cancers are by far the commonest cancer. They include both melanomas and non-melanoma skin cancers (NMSC), and it is the latter which are very common. Because of their number the health-care costs of diagnosis and treatment of skin cancers are higher than might have been expected. In fact health-care costs for skin cancer are probably higher than for any other cancer. Fortunately, however, the ‘human costs’ in terms of premature mortality, especially for NMSCs, are low compared to other cancers, though still substantial enough. This presentation contains summary estimates of the incidence of melanomas and NMSCs, of mortality from these cancers, of their associated health-care costs, and of other economic and human costs. As well, it discusses the uses of such information for assessing the cost-effectiveness of proposed interventions aimed at reducing the incidence of skin cancers.

## Background

The earlier report, in 2000, was sparked by Australian estimates (AIHW: Mathers et al. 1999) that health-care costs were higher for skin cancers than for any other cancer. This is quite likely true for New Zealand as well, though not proven, as corresponding estimates for other cancers are not available.

The reason is simply the very large number of non-melanoma skin cancers (NMSCs) occurring each year. Melanomas are much less common. In 2005 there were 18,610 new cancer registrations. Of these, 2,017, or about 11 percent, were melanomas. However, NMSCs are not required to be registered. It is estimated, in the work reported here, that about 67,000 new NMSCs occur each year. The consequence is that skin cancers account for over 80 percent of all new cancers each year.

Australian and New Zealand skin cancer rates appear to be comfortably the highest in the world. Presumably high UV intensity is one factor in this.

In 2005 there were 269 deaths from melanoma, and 102 from non-melanoma skin cancers. Together these account for 4.7 percent of total cancer deaths of 7,970 in that year. Most skin cancer cases occur among the more elderly. But melanoma has a significantly lower average age of incidence, and mortality, than non-melanoma skin cancers. In 2005 11.9 percent of melanoma deaths were of persons aged under 45, compared with none for non-melanoma skin cancer, and 4.6 percent for all cancer deaths.

## Cost estimates

Publicly-funded hospital costs (in-patient and day-patient, but not out-patient) are the best documented cost component. These costs are estimated to have been \$26.3 million (excluding GST) in 2006, of which \$3.4 million were for melanomas. To these numbers should be added

an approximate additional 10 percent, for privately-funded costs.

GP consultation and Lab test costs, and other costs, were estimated from a variety of sources, including in particular a data-set of laboratory tests of suspect skin lesions for the Bay of Plenty region, compiled in the late 1990s. Including these estimates, total health-care costs of skin cancer in New Zealand, in 2007/08 prices, are estimated to have been \$57.1 million (excluding GST), of which \$5.7 million was for melanomas, and \$51.4 million NMSCs. For comparison the corresponding estimate in 1998 was a total of \$33.4 million.

Other ‘costs’ include ‘lost production’ of \$66 million (of which \$59.3 million for melanomas); and a total of 4,741 life-years lost in 2006 to premature mortality, of which melanomas accounted for 3,811.

In total then, the estimated ‘economic’ cost in 2006 was \$123.1 million (in 2007/08 prices); and the ‘human cost’ was 4,741 life-years lost.

## Preventive Costs

‘Preventive’ expenditures are an additional cost. These comprise -

- Over \$2 millions annually on community preventive measures, by organisations and agencies such as the Cancer Society and the Health Sponsorship Council.
- Sales of protective clothing such as sunhats, though most of this could be regarded as substituting for normal clothing purchases.
- Sales of Sun Screen preparations. Data from AC Nielsen Ltd show supermarket sales of these for the six months to 22nd March 2009 to have been \$10.6 million.. Some of this, however, could be intended to avoid the unpleasantness of sunburn as much as consciously reducing skin cancer risk.

## The use of ‘Cost of Skin Cancer’ estimates.

Estimates such as reported here have two main uses

- To gain a feeling for the overall costs of a given disease, helping decide where prevention measures deserve particular attention
- Providing data on disease costs for use in cost-effectiveness evaluations of proposed interventions.

## References

- AIHW: Mathers et al. 1999. Health system costs of cancer in Australia 1993-94. Canberra.
- O’Dea D. 2000. The Costs of Skin Cancer to New Zealand. A report to The Cancer Society of New Zealand.