

Cost & Value of Cancer Care in Australia

A medical student's perspective

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Word Count: 2232

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Introduction

Given that cancer directly affects one in three Australians,¹ it is inevitable that the costs of cancer prevention and care are borne by us all. However, appraising the value of such care is fraught with difficulty. Too often outcomes are assessed through mortality and financial costs alone – two finite ends of a spectrum that fail to take into account factors such as disability adjusted life-years (DALY) and the even less tangible psychosocial aspects of care.

This report will examine the cost and value of cancer care starting from the rewards of investing in prevention and early detection, to the burden of resourcing treatment and allowing equitable access to cancer treatment across Australia. Furthermore, it will explore the implications of both increasing cancer burden and improving cancer survival upon care of cancer survivors. In the context of current and future reforms in Australian cancer care, all these areas are of relevance to medical students as the next generation of doctors dealing with the rising burden of cancer.

Investing in prevention & early detection

The adage of “*prevention is better than cure*” is manifest in our current approach against cancer, where the value of upstream investment is judged by morbidity and costs averted through early prevention and detection. As Australia has the highest incidence of skin cancer worldwide,² our efforts in its prevention form a compelling case in point. Although the absolute number of lives lost to both melanoma and non-melanoma skin cancers is low in comparison to other cancers,¹ it is the most expensive when considering direct costs on skin cancer diagnosis and treatment exceed \$294 million.² This has yet to account for the loss of productivity incurred. Australian “SunSmart” campaigns since the 1980s have aimed to stem these costs by modifying public attitudes towards sun exposure. Recent research suggests these campaigns have been a cost-effective exercise with \$2.32 returned for every \$1 invested.³ Furthermore, the penetration of this ‘SunSmart’ message is evidenced by the decreased rates of skin cancer in younger age groups who have been brought up with improved awareness to skin cancer prevention.^{2,4} Thus, the true value of such

preventive strategies extends beyond simple monetary returns as they also address fundamental health behaviours that place the population at risk of cancer from the outset.

Similarly, the potential of screening to limit the high socioeconomic and human costs of treating advanced cancers is dependent on how the population values participation. The substantial reduction in breast cancer mortality by 28% in the past decade¹ may be largely accorded to the effectiveness of Australia's national *BreastScreen* program. Besides the organisational merits of this program, its success is also derived from cultivating a strong public awareness of the value of screening.⁵⁻⁶ In contrast, similar levels of acceptance have yet to be procured for the recently initiated National Bowel Cancer Screening Program. Given that bowel cancer is the second most common cancer in both sexes,¹ the demonstrated potential of biennial screening to reduce mortality rates by 13-17%⁷ should tackle a substantial portion of Australia's future cancer burden. Indeed, considering costs alone, removal of a precancerous polyp detected on screening may save 18 times the cost of treating the cancer that subsequently develops from such a polyp.⁸

Although cost-effective, the value of this approach may be limited if participation rates remain below 50%.⁹ Factors such as poor awareness of screening benefits¹⁰⁻¹¹ and damaging reports of defective kits being used in 2009 need to be combated by concerted efforts to raise public perception of bowel cancer screening as a valuable health exercise. This should involve targeting groups identified to have lower participation in bowel cancer screening such as migrants, Aboriginal & Torres Strait Islanders and males in general.¹¹⁻¹² With the rising costs of expanding this program to all persons aged 50-74 years,⁷⁻⁸ it will be vital to build public confidence in the value of participation if the benefits of screening are to be realised.

The 'cost' of advances in care

With an ever expanding array of new therapeutic modalities in the context of resource limitations, cancer treatment is perceived to come at great expense. Yet this needs to be considered in the context of the substantial morbidity, productivity loss and psychosocial costs borne by cancer patients and their carers. Cancer treatment accounts for 6% of the total healthcare expenditure in Australia despite cancer being

the leading cause of disease burden with respect to DALY, not just mortality.¹³⁻¹⁴ Nevertheless, the cost of chemotherapy has been particularly contentious in Australia with some suggesting that “minimal impact of cytotoxic chemotherapy on 5-year survival” may not justify sustained high-level funding.¹⁵ This view has yet to consider the potential value of chemotherapy in addressing symptoms and improving quality of life.¹⁶⁻¹⁷ Furthermore, it is difficult to reconcile a broad “health economics” view of the cost of treatment to an individual patient’s perspective on what value that chemotherapy may add to their care regimen. In order to address these uncertainties on impact of new therapies on patient outcomes there should be greater support for local clinical trials in Australia.¹³ Wider patient participation in clinical trials not only improves outcomes¹⁸ but can also generate evidence upon which the value of investing in newer treatments can be gauged.

Dynamic advances in different treatment modalities also necessitate a multidisciplinary approach to care provision. Despite increased outlay of expenses and time to conduct meetings, a team approach ultimately reduces resource and time costs for patients and team members otherwise incurred by poorly coordinated care.¹⁹⁻²⁰ Multidisciplinary models can also improve the value of care provided to patients by integrating the developing evidence bases of different fields and applying them to address an individual patient’s specific needs. This has consistently been demonstrated to provide greater patient satisfaction and outcomes.²¹ Conversely, patients themselves also contribute to improving the overall value of cancer care through greater participation in clinical trials when they are managed in multidisciplinary settings.²²⁻²³ Taken as a whole, Australia’s shift toward a multidisciplinary model can ensure that the substantial advances in cancer care are harnessed in the most efficient way possible.

Enhancing value of care for all Australians

These improvements to provision of cancer care in Australia belie the inequities in access to care for rural and remote communities. The most telling evidence of such disparity is that greater distance from a metropolitan centre correlates to higher likelihood of death for rural/remote cancer patients within five years of diagnosis.²⁴ Whilst comparatively lower socioeconomic status in remote areas contribute to this difference,²⁵ the effect of geographic isolation upon costs of

providing ‘best practice’ care to these patients has significant impact of the subsequent quality of care.

As mentioned, a patient-centred multidisciplinary approach has increasingly become the benchmark for cancer care, yet less than half of regional hospitals administering chemotherapy provided multidisciplinary clinics.²⁵ Furthermore, although 50% of cancer patients require some element of radiotherapy, its access by rural patients remains consistently below their metropolitan counterparts^{13,26} – an issue accorded to significant travel and accommodation costs accrued by rural patients.²⁷ Rural patients and carers may also have greater psychosocial needs than urban counterparts²⁸ yet over 60% of centres servicing rural patients are requesting urgent access to psychosocial services.^{25,29} Innovative strategies such as telephone counselling and internet-based care may provide feasible alternatives in lieu of resident psychosocial services.²⁸ These issues reflect how dated efforts to address geographical barriers such as Patient Assisted Travel Schemes (PATS) have failed to match the evolution of cancer care from a linear to multidisciplinary model. Recent funding towards Regional Cancer Centres has the potential to address these access issues provided adequate multidisciplinary staffing and capacity for patient accommodation can be achieved.³⁰

Besides the physical barriers of distance, cultural barriers can also limit the value of care received by certain groups in Australia. Indigenous Australians have comparatively lower cancer incidence yet later diagnosis and ultimately higher cancer mortality.³¹⁻³² Models of care that fail to address strong community taboos surrounding cancer are seen to have limited value by Indigenous patients,³³⁻³⁴ leading to lower utilisation of services available. Similar findings have also been reported for other culturally diverse groups in Australia.³⁵⁻³⁶ As attitudes to health and care-seeking behaviour may be largely dictated by cultural beliefs, concerted efforts to address issues of cultural safety are necessary to enhance the value cancer care for minority groups in Australia.

Cancer care beyond ‘Cure’

If the value of care were simply considered using ‘survival’ as an end-point, substantial gains have been made in the last two decades: relative survival of

Australian cancer patients is second only to the United States on an international comparison.¹ Yet a focus on survival alone overlooks both the value of palliative care and the ongoing costs of cancer survivorship in Australia.

Palliative care aims to address the physical, psychosocial and spiritual needs of patients throughout their cancer trajectory.³⁷ Patients who experience timely referral to specialist palliative care have been shown to require less hospital inpatient treatment, spend more time at home with less stress reported by carers.³⁸ However, a third of patients who may benefit from specialist palliative care are not referred and others suffer from delayed referral.¹³ This may be related to general community and even health professional views that palliation refers only to “terminal care” and control of symptoms at the end of life.^{37,39} These misconceptions need to be addressed such that earlier palliative planning may improve the value of care for these patients with complex needs.

Furthermore, cancer care does not end at ‘cure’. Cancer survivors face ongoing issues with physical, psychological and functional wellbeing that need to be addressed if care is to be truly holistic. Cancer survivors in Australia have been shown to report comparatively lower physical and mental health status along with more days out of role than those who have not previously had cancer.⁴⁰ Part of this relates to physical consequences of cancer but also the less-anticipated later “costs” of treatment such as post-treatment fatigue,⁴¹⁻⁴² chemotherapy related cognitive and genitourinary issues,⁴³⁻⁴⁴ radiation related gastrointestinal sequelae.⁴⁵ The move from acute care to long-term follow-up also opens an array of psychosocial issues for patients including anxiety about cancer recurrence and uncertainty on return to work and family relationships away from the ‘sick role’.^{40,46} Cancer survivors also have higher rates of co-morbid chronic conditions and non-cancer related death,⁴⁷⁻⁴⁸ making the transition to long-term care a vital juncture to instigate lifestyle modifications.

These issues of survivorship all highlight that good value care should involve supporting smooth transition to well co-ordinated follow-up. Conventionally in Australia, most follow-up is based on specialist oncology review and episodic communication with GPs primarily focussing on monitoring treatment effects and

recurrence.⁴⁹ Increasing numbers of cancer survivors may significantly raise the cost of providing review in specialist settings whilst reducing the quality of care for each patient. A possible solution may be to shift toward greater involvement from the primary care sector in survivorship care.⁵⁰ Primary care based follow-up may be more comprehensive as other medical and psychosocial co-morbidities can be reviewed simultaneously.⁵¹ Support for such follow-up would be invaluable in extending the focus of care beyond that of cancer alone and back towards patients overall health status.

Education & strategies for the future

With the increasing prevalence of cancer in Australia, it is inevitable that medical students will become involved in the care of cancer patients regardless of their career choices. Preparing students for the challenges of our rising cancer burden not only involves training skills in diagnosis and treatment, but broader understanding extending from preventive principles through to ongoing survivorship issues. However, current student experiences are largely centred on rotations in highly demanding clinical settings where they may only appreciate the acute aspects of cancer care.⁵² Strategies to address these issues may include:

- **Increasing screening** – encouragement from healthcare professionals can influence patient attitudes to screening.^{11,53-54} Involving students in simulated sessions to discuss the implications of screening with patients may help future doctors raise patient participation.
- **Building teamwork skills** – medical students should participate in multidisciplinary team meetings to appreciate the role of allied health professionals and the dynamics of coordinating teamwork.
- **Rural access** – Building on current rural placements for local HECS supported students, rotations in regional cancer centres may attract and increase retention of future doctors in these areas of need.
- **Cultural safety & communication** – workshops for medical students covering how cancer is conceived by other cultures may facilitate better engagement of Indigenous and migrant populations by future doctors.
- **Other clinical settings** – cancer care is becoming increasingly decentralised from acute hospital care. Medical students should

experience care provision in other clinical settings such as palliation at home. This may improve appropriate and timely referral in the future.

- ***Following the trajectory*** – to understand the complex issues patients face at different stages of cancer care, students should be encouraged to follow the course of patients as part of the curriculum. Particular emphasis may be given to survivorship issues that students may be unfamiliar with.

Conclusion

The rising burden of cancer in Australia will unavoidably lead to increased costs associated with care. Sustaining the value of cancer care in the face of these pressures will require a co-ordinated approach, from increasing participation in preventive efforts and removing barriers to multidisciplinary care to providing comprehensive supportive care beyond cure. Medical students need to be made aware of these issues throughout their training and apply this understanding in their future practice.

References

1. Australian Institute of Health and Welfare & Australasian Association of Cancer Registries. Cancer in Australia: an overview, 2008. (ed. AIHW) (Canberra, 2008).
2. Cancer Council Australia & The Australasian College of Dermatologists. Skin cancer prevention: A blue chip investment in health. (National Skin Cancer Committee & Cancer Council Australia,, February 2009).
3. Shih, S.T., Carter, R., Sinclair, C., Mihalopoulos, C. & Vos, T. Economic evaluation of skin cancer prevention in Australia. *Prev Med* 49, 449-453 (2009).
4. Stanton, W.R., Janda, M., Baade, P.D. & Anderson, P. Primary prevention of skin cancer: a review of sun protection in Australia and internationally. *Health Promot Int* 19, 369-378 (2004).
5. Jones, S.C., *et al.* Australian women's awareness of breast cancer symptoms and responses to potential symptoms. *Cancer Causes Control* (2010).
6. Zorbas, H.M. Breast cancer screening. *Med J Aust* 178, 651-652 (2003).
7. Bishop, J., Glass, P., Tracey, E., Hardy, M., Warner, K., Makino, K., Gordois, A., Wilson, J., Guarnieri, G., Feng, J., Sartori, L. Health Economics Reivew of Bowel Cancer Screening in Australia. Vol. Catalogue No: SM-2008-I (ed. Cancer Institute NSW) (Cancer Institute NSW,, 2008).
8. Cancer Council Australia. Cancer control priorities for the 2010-11 federal brudget. (2010).
9. Ananda, S.S., *et al.* Initial impact of Australia's National Bowel Cancer Screening Program. *Med J Aust* 191, 378-381 (2009).
10. Paddison, J.S. & Yip, M.J. Exploratory study examining barriers to participation in colorectal cancer screening. *Aust J Rural Health* 18, 11-15 (2010).
11. Weber, M.F., Banks, E., Smith, D.P., O'Connell, D. & Sitas, F. Cancer screening among migrants in an Australian cohort; cross-sectional analyses from the 45 and Up Study. *BMC Public Health* 9, 144 (2009).
12. Bowel Cancer Screening Pilot Monitoring and Evaluation Steering Committee. Australia's Bowel Cancer Screening Pilot and beyond: final evaluation report. (ed. Department of Health and Ageing) (Department of Health and Ageing,, Canberra, 2005).
13. National Cancer Control Initiative. Optimising cancer care in Australia; a consultative report prepared by the Clinical Oncological Society of Australia. (ed. Initiative, T.C.C.A.a.t.N.C.C.) (2003).
14. Begg, S., Vos, T., Barker, B., Stevenson, C., Stanley, L., Lopez, AD. The burden of disease and injury in Australia 2003. (ed. Australian Institute of Health and Welfare) (Australian Institute of Health and Welfare,, Canberra, 2007).
15. Morgan, G., Ward, R. & Barton, M. The contribution of cytotoxic chemotherapy to 5-year survival in adult malignancies. *Clin Oncol (R Coll Radiol)* 16, 549-560 (2004).
16. Segelov, E. The emperor's new clothes - can chemotherapy survive? *Australian Prescriber* 29, 2 (2006).
17. Paesmans, M. Benefits of chemotherapy for quality of life in patients with advanced nonsmall-cell lung cancer. *Curr Opin Oncol* 14, 389-393 (2002).

18. Oceania Health Consulting. Cooperative Clinical Trials in Cancer - The Need for Increased Capacity. (Perth, 2002).
19. Fleissig, A., Jenkins, V., Catt, S. & Fallowfield, L. Multidisciplinary teams in cancer care: are they effective in the UK? *Lancet Oncol* 7, 935-943 (2006).
20. Ruhstaller, T., Roe, H., Thurlimann, B. & Nicoll, J.J. The multidisciplinary meeting: An indispensable aid to communication between different specialities. *Eur J Cancer* 42, 2459-2462 (2006).
21. National Breast Cancer Centre. Multidisciplinary meetings for cancer care: a guide for health service providers. (National Breast Cancer Centre, Camperdown, NSW., 2005).
22. McNair, A.G., *et al.* Maximising recruitment into randomised controlled trials: the role of multidisciplinary cancer teams. *Eur J Cancer* 44, 2623-2626 (2008).
23. Magee, L.R., Laroche, C.M. & Gilligan, D. Clinical trials in lung cancer: evidence that a programmed investigation unit and a multidisciplinary clinic may improve recruitment. *Clin Oncol (R Coll Radiol)* 13, 310-311 (2001).
24. Jong, K.E., *et al.* Remoteness of residence and survival from cancer in New South Wales. *Med J Aust* 180, 618-622 (2004).
25. Underhill, C., *et al.* Mapping oncology services in regional and rural Australia. *Aust J Rural Health* 17, 321-329 (2009).
26. Radiation Oncology Inquiry. A vision for radiotherapy: report of the Radiation Oncology Inquiry. (Australian Government Department of Health and Ageing, Canberra, 2002).
27. Gordon, L.G., Ferguson, M., Chambers, S.K., Sunn, J. Fuel, Beds, Meals and Meds: out-of-pocket expenses for patients with cancer in rural Queensland. *Cancer Forum* 33, 1-7 (2009).
28. Shepherd, L., Goldstein, D., Olver, I. & Parle, M. Enhancing psychosocial care for people with cancer in rural communities: what can remote counselling offer? *Aust Health Rev* 32, 423-438 (2008).
29. Underhill, C.R., Goldstein, D. & Grogan, P.B. Inequity in rural cancer survival in Australia is not an insurmountable problem. *Med J Aust* 185, 479-480 (2006).
30. Clinical Oncological Society of Australia & Cancer Council Australia. Guiding principles for regional cancer centre capital grants - an independent cancer sector view. (Clinical Oncological Society of Australia & Cancer Council Australia, Sydney, 2009).
31. Valery, P.C., Coory, M., Stirling, J. & Green, A.C. Cancer diagnosis, treatment, and survival in Indigenous and non-Indigenous Australians: a matched cohort study. *Lancet* 367, 1842-1848 (2006).
32. Cunningham, J., Rumbold, A.R., Zhang, X. & Condon, J.R. Incidence, aetiology, and outcomes of cancer in Indigenous peoples in Australia. *Lancet Oncol* 9, 585-595 (2008).
33. Shahid, S., Finn, L., Bessarab, D. & Thompson, S.C. Understanding, beliefs and perspectives of Aboriginal people in Western Australia about cancer and its impact on access to cancer services. *BMC Health Serv Res* 9, 132 (2009).
34. Shahid, S. & Thompson, S.C. An overview of cancer and beliefs about the disease in Indigenous people of Australia, Canada, New Zealand and the US. *Aust N Z J Public Health* 33, 109-118 (2009).

35. Huang, X., Butow, P., Meiser, B. & Goldstein, D. Attitudes and information needs of Chinese migrant cancer patients and their relatives. *Aust N Z J Med* 29, 207-213 (1999).
36. Goldstein, D., Thewes, B. & Butow, P. Communicating in a multicultural society. II: Greek community attitudes towards cancer in Australia. *Intern Med J* 32, 289-296 (2002).
37. Johnson, C., *et al.* Australian palliative care providers' perceptions and experiences of the barriers and facilitators to palliative care provision. *Support Care Cancer* (2010).
38. Hearn, J. & Higginson, I.J. Do specialist palliative care teams improve outcomes for cancer patients? A systematic literature review. *Palliat Med* 12, 317-332 (1998).
39. Ward, A.M., Agar, M. & Koczwara, B. Collaborating or co-existing: a survey of attitudes of medical oncologists toward specialist palliative care. *Palliat Med* 23, 698-707 (2009).
40. Eakin, E.G., *et al.* Health status of long-term cancer survivors: results from an Australian population-based sample. *Cancer Epidemiol Biomarkers Prev* 15, 1969-1976 (2006).
41. Bower, J.E. Prevalence and causes of fatigue after cancer treatment: the next generation of research. *J Clin Oncol* 23, 8280-8282 (2005).
42. Goldstein, D., *et al.* Fatigue states after cancer treatment occur both in association with, and independent of, mood disorder: a longitudinal study. *BMC Cancer* 6, 240 (2006).
43. Schagen, S.B., *et al.* Late effects of adjuvant chemotherapy on cognitive function: a follow-up study in breast cancer patients. *Ann Oncol* 13, 1387-1397 (2002).
44. Schwartz, C.L. Long-term survivors of childhood cancer: the late effects of therapy. *Oncologist* 4, 45-54 (1999).
45. Yeoh, E. Radiotherapy: long-term effects on gastrointestinal function. *Curr Opin Support Palliat Care* 2, 40-44 (2008).
46. Jefford, M., *et al.* Survivorship issues following treatment completion--results from focus groups with Australian cancer survivors and health professionals. *J Cancer Surviv* 2, 20-32 (2008).
47. Eakin, E.G., *et al.* Health behaviors of cancer survivors: data from an Australian population-based survey. *Cancer Causes Control* 18, 881-894 (2007).
48. Demark-Wahnefried, W., Aziz, N.M., Rowland, J.H. & Pinto, B.M. Riding the crest of the teachable moment: promoting long-term health after the diagnosis of cancer. *J Clin Oncol* 23, 5814-5830 (2005).
49. Jefford, M. Improving outcomes for cancer survivors in Australia. *Cancer Forum* 33, 5 (2009).
50. McAvoy, B.R. General practitioners and cancer control. *Med J Aust* 187, 115-117 (2007).
51. Grunfeld, E. Cancer survivorship: a challenge for primary care physicians. *Br J Gen Pract* 55, 741-742 (2005).
52. Starmer, D.L. & Barton, M.B. Advances in cancer management: at what cost to medical student education? *J Cancer Educ* 24, 233-237 (2009).
53. Cole, S.R., Young, G.P., Byrne, D., Guy, J.R. & Morcom, J. Participation in screening for colorectal cancer based on a faecal occult blood test is improved

by endorsement by the primary care practitioner. *J Med Screen* 9, 147-152 (2002).

54. Kwok, C., Cant, R. & Sullivan, G. Factors associated with mammographic decisions of Chinese-Australian women. *Health Educ Res* 20, 739-747 (2005).