

# Challenges in cancer control in Australia

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*Despite advances in treatment, the greatest gains in cancer control are achieved through prevention*

The translation of basic cancer research on cell growth to the clinic has resulted in a paradigm shift in cancer treatment by providing new therapeutic targets. The initial successes — the monoclonal antibodies trastuzumab and rituximab — have improved the survival of patients with breast cancer and lymphoma, as has the small molecule imatinib mesylate in chronic myeloid leukaemia; all have less toxicity than conventional cytotoxics.<sup>1</sup> The challenge is to fund these new high-cost drugs. Although targeted drugs can be limited to the specific patient populations expressing the appropriate target, further funding is then required to screen patients for those targets. New models of cost- and risk-sharing between governments and industry must evolve to pay for these developments.

A similar evolution in the diagnosis of cancer will see genomics and proteomics become a more important guide to treatment selection and prognosis than traditional pathology tests.<sup>2,3</sup> These research technologies will need to be developed in such a way that they can provide guidance to clinicians as quickly as conventional techniques, and will also require upskilling of current clinicians, pathologists and their trainees.

Investment in cancer research pays considerable dividends.<sup>4</sup> There is a need for more funding of translational research — it has been an ongoing concern that Australia lacks the infrastructure to take promising new drug discoveries all the way from the laboratory into clinical practice. Newer fields, such as health services research, with its potential to address the pressing issue of inequities in access to treatment and cancer outcomes in rural and remote Australia, and psychosocial research, require new sources of funding. The challenge in Australia is to make research less fragmented and better targeted to questions of international importance, which we have the capability to competitively pursue.

Although breakthroughs in cancer treatment generate significant media coverage, the greatest gains in cancer control in Australia are to be made in prevention strategies based on established science. Evidence-based health promotion campaigns have provided strong economic returns, yet governments invest only 1.7% of the overall health care budget in primary prevention.<sup>5</sup> More than 21% of cancer deaths in Australia are attributed to tobacco use. Add smoking to excessive sun exposure, inadequate fruit and vegetable intake, alcohol, inactivity and obesity, and more than 34% of cancer deaths in Australia can be attributed to modifiable behaviour.<sup>6</sup>

Currently, 17.4% of Australians smoke.<sup>7</sup> Australia has a smoking prevalence among the world's lowest, but from a public health perspective it remains unacceptable that almost one in five Australians incurs a significant yet avoidable cancer risk by continuing to smoke. The prohibition of broadcast tobacco advertising in the mid 1970s was the first key policy step in a series of tobacco control reforms that have since been shown to have saved 17 000 Australians from premature death.<sup>8</sup> This government initiative required no taxpayer funding, but a cultural shift. Where funds have been invested, the returns have been enormous, with the

\$176 million spent on antismoking campaigns over the past 30 years delivering \$8.6 billion in benefits.<sup>9</sup> There remains no more effective cancer control measure than reducing smoking, but there is a risk that the incremental reduction in smoking prevalence achieved over the past 30 years will stall unless the tobacco control effort is sustained.

Smoking also contributes significantly to social inequities in health outcomes. For example, a smoking prevalence of 50% among Indigenous Australians<sup>10</sup> is believed to be a major cause of the significantly poorer cancer survival rates among Aboriginal and Torres Strait Islander peoples. Targeted approaches are needed to break the cycle of social disadvantage, smoking, and cancer evident in specific population groups.

Moreover, studies on tobacco control achievements over recent decades strongly suggest that a more sustained, whole-of-government commitment, built around integrated policy, social marketing, and research, could bring smoking prevalence down in Australia by a further 1% annually. Estimates based on recent trends indicate that reducing smoking prevalence by 5% in 5 years would save more than \$1.15 billion in health care costs over the next 30 years.<sup>8</sup> Yet some major political parties continue to accept donations from tobacco companies,<sup>11</sup> and governments delay legislation to ban smoking in enclosed public spaces, and invest taxpayer funds in tobacco companies on the basis of sound economic management — despite having to spend more taxpayer funds on treating tobacco-related diseases (at least until patients die of them).

While public policy has been gradually reducing the tobacco burden, obesity is escalating as a community health crisis. Obesity is linked to colorectal cancer, postmenopausal breast cancer, and kidney, oesophageal, gall bladder and endometrial cancers.<sup>12</sup> Obesity control includes encouraging and facilitating physical activity and communicating dietary advice. The tobacco experience suggests that restricting junk-food advertising to children is likely to have an important impact, as supported by early Canadian data.<sup>13</sup> This measure is not about restricting choice, as well targeted multimillion-dollar advertising campaigns already create an imbalance in the choices that uninformed and often disadvantaged families see as being available to them.

Other lifestyle messages require more subtle public education. Advice from the SunSmart skin cancer prevention program must balance the need to avoid excessive sun exposure with the importance of low-level sunlight for vitamin D production. Similarly, while any alcohol consumption carries some cancer risk, the more you drink, the higher the risk — a factor that should be balanced against the benefits of very low alcohol intake in preventing cardiovascular disease.

Cancer screening is another area that is presenting new opportunities and challenges. The benefits of breast cancer screening need to be continually reinforced to ensure high participation rates by eligible women. A new challenge for cervical cancer screening is ensuring continued high participation despite the introduction of

the human papillomavirus immunisation program. The new National Bowel Cancer Screening Program requires community and professional education, a patient registry to ensure follow-up, and extra resources and minimum standards to meet increased colonoscopy demand. This will test the shared responsibilities for health care between national and state/territory governments — a potential barrier to efficient health policy implementation. The community must also understand that an ineffective screening test — one that evidence shows lacks the specificity and sensitivity to reduce cancer mortality on a population basis — is worse than no test at all, as the false positives and negatives can lead to poorer health outcomes than would surveillance on a case-by-case basis.

The key is ensuring that evidence guides the implementation of government-funded measures aimed at cancer prevention and early detection — at a time when we could prevent well over a third of all cancer deaths in Australia using existing prevention and early detection technology. By investing more taxpayer funds in the high proven returns of cancer prevention and early detection, we could make resources available to better support the significantly increasing numbers of new cancer patients associated with population ageing over the coming years. Savings generated through improved prevention could also fund targeted cancer research to help further reduce the impact of cancer in the future. Increasing the cancer workforce, and improving workforce training and support through a more integrated approach across jurisdictions, is also pivotal to ensuring we can provide optimal multidisciplinary cancer care to meet the challenges of the future.

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