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8.1 Cancer as a non-communicable disease and cancer control

In 2008, an estimated 63.5% of deaths worldwide were attributed to non-communicable diseases (NCDs).\textsuperscript{387} Estimates from 1990 to 2010 show the shifting contribution of risk factors to the global burden of disease moving from communicable diseases in children to NCDs – cardiovascular disease, cancer, diabetes and chronic lung disease – in adults.\textsuperscript{388, 389} The world’s population is growing, life expectancy is increasing, and the demographic composition is shifting to comprise a higher proportion of older people, leading to a continued rise in the burden of NCDs.\textsuperscript{387, 389} As a consequence, healthy ageing is prominent in health agendas with a key focus on control of chronic disease risk factors.\textsuperscript{389}

The existing body of evidence shows that addressing the known and modifiable risk factors of NCDs can reduce a large proportion of these deaths and their associated social impact, consistent with healthy ageing public health campaigns.\textsuperscript{389, 390} Despite this, the likelihood of a cure for NCDs is low once they have developed, except in some cases.\textsuperscript{7, 391} Changing population trends suggest that existing programs require revision to incorporate older cohorts, who are generally outside the target groups for interventions and treatment.\textsuperscript{7, 60}

In 2008, an estimated 12.4 million new cases and 7.6 million deaths were attributed to cancer globally.\textsuperscript{7} The importance of addressing cancer control is undeniable. However, governments traditionally focused on cancer care. Cancer care and treatment are limited to cancer patients and their support networks, whereas control incorporates the potential to prevent cancer occurrence and recurrence and improve quality of life, using current knowledge and modern techniques for prevention, care and treatment.\textsuperscript{392} Specifically, cancer control has been described by WHO in the following way:

Cancer control aims to reduce the incidence, morbidity and mortality of cancer and to improve the quality of life of cancer patients in a defined population, through the systematic implementation of evidence-based interventions for prevention, early detection, diagnosis, treatment, and palliative care. Comprehensive cancer control addresses the whole population, while seeking to respond to the needs of the different subgroups at risk.\textsuperscript{393}
This shift from care to control stems from the preventability of NCDs, where a whole-of-population approach can ease the disease burden by addressing modifiable risk factors and implementing appropriate screening programs. Analysis of the American population has suggested that approximately 60% of cancer deaths were potentially avoidable, as they were attributed to modifiable risk factors. There is not one main risk factor for all cancers, and risk factors can vary depending on the background genetic makeup of a population and the presence of other risk factors or co-factors.

Investing in rigorous local research in cancer control to understand the relative importance of known and emerging risk factors is needed to underpin the strategic basis for cancer control implementation and health care system transition.

Since the early 1980s, greater public awareness has increased the prominence of cancer. This is not solely a result of increasing diagnosis rates, but due to changes in societal attitudes and the health care context. In developed countries, cancer is now better understood – socially – than in the past, and discussed more openly. With treatments and survival rates improving, there is now less of a stigma around cancer, with some exceptions. However, the plethora of confusing messages about the cancer burden can leave the impression that control measures are underperforming.

Improved care and treatment of other NCDs such as heart disease and stroke, traditionally major causes of death, have resulted in cancer becoming a leading cause of death. This increases the likelihood of the elderly dying of cancer. Time exposes the elderly to more carcinogens and genetic changes, resulting in higher cancer incidence and mortality.

This section presents a snapshot of cancer control as a health policy priority globally and nationally over recent years. Tracking these changes in public health initiatives and developments in cancer control provides a context in which trends in cancer incidence and mortality can be understood more completely. WHO provides leadership on global health and guidance for cancer control programs, beginning with preventive health and moving through to palliative care, and policy and advocacy initiatives. Here we outline the broader guidelines for cancer control established at global and regional levels, which are used as recommendations for the cancer control approach in Australia.

### 8.2 Cancer control globally

WHO is leading the drive to integrate issues relating to NCDs and cancer control in national health agendas. The WHO-developed cancer control program outlines actions for cancer control program development incorporating the six elements of planning, prevention, early detection, diagnosis and treatment, palliative care, and policy and advocacy. WHO encourages governments to combat cancer through a systematic approach, with the involvement of stakeholders and effective partnerships to support implementation. WHO has more recently incorporated cancer control into their action plan and strategy for NCD prevention and control, to facilitate the integration of key principles in practice. The complexity of cancer control can overshadow basic steps that can be implemented, especially in developing nations, such as vaccination for hepatitis B, improved sanitation and safe blood transfusions to reduce the burden of disease associated with cancer.

Frameworks and recommendations need to be implemented at both regional and country levels. In response, some regions have formed collaborations to meet targets. For example, the European Union has acknowledged capacity and resource limitations in the region to meet WHO recommendations. A collaborative project across member nations to determine cancer health indicators was subsequently funded. The inherent diversity in populations and geographies must be applied to a global framework, and incorporate differences in treatment settings and government policy to be effective. Political processes and legislation often fail to set adequate disease-prevention priorities at national levels. However, responsibility for cancer control is not solely reliant on government policy. Cancer control is the responsibility of all stakeholders, from governments and their agencies to for-profit organisations in the health sector and non-health sector, as well as NGOs and the broader community.

Working with WHO recommendations, the Australian Government has begun integrating cancer control into the health agenda at a federal and state/territory level. This work has involved collaboration between a number of government agencies and NGOs. Other stakeholders play a role in various facets of the process, as exemplified by key NGOs. The specific role of NGOs in cancer control is not well described or defined, but they are generally seen to play an important part in promoting and supporting cancer control.
8.2.1 The role of NGOs

As no individual institution has the capacity to provide comprehensive NCD or cancer control initiatives and care services, a consortium of agencies from government, for-profit and not-for-profit sectors come together to provide the spectrum of services required. Traditionally, NGOs are formed by groups with common interests or to provide a service, often associated with religious institutions and generally more active in health care, delivering welfare and other community service areas.\textsuperscript{407-410} NGOs generally operate at a local level and have strong local community ties through their formal and informal networks – often undertaking activities that are not deemed viable in for-profit organisations or the government sector.\textsuperscript{408, 409}

Generally speaking, NGOs have brought about changes in government policy and attitude by stimulating political processes to drive action from the ground up through social movements.\textsuperscript{402} Their independence from the government allows NGOs to advocate for issues that may not be on the political agenda\textsuperscript{411} and, as such, NGOs play an important role in increasing the awareness of the general public and key decision-makers about cancer control issues.\textsuperscript{412} Further, because of their community links, NGOs can extend the reach of prevention programs, take on their implementation, or take the lead in cancer control planning in the absence of government leadership.\textsuperscript{417} NGOs can trial and pilot programs or interventions that may be considered too risky or impractical by governments until detailed data are available.\textsuperscript{407}

Cancer advocacy has traditionally begun with cancer societies and other related NGOs.\textsuperscript{411} NGOs provide a link between the clinical setting and the community.

The role of NGOs in cancer control is more often assumed rather than explicitly defined. At a global level, the Union for International Cancer Control (UICC) drives cancer control advocacy globally through member states, WHO and government agencies.\textsuperscript{412} Recently, the UICC produced a collaboratively established World Cancer Declaration, with the aim of gaining commitment from all stakeholders to reduce the global cancer burden through improved screening and diagnosis, adequate access to treatment, adequate vaccination programs, sufficient training programs for health care professionals, and prevention.\textsuperscript{411} At a national level, there are some examples of formalised approaches to cancer control, such as the Canadian Strategy for Cancer Control and the National Cancer Research Institute in the UK.\textsuperscript{414, 415}

The effectiveness of NGOs is not widely reported in the area of cancer control. The broader literature on NGOs details the debate surrounding ownership and its effect on health outcomes.\textsuperscript{410} Public perception reportedly favours for-profit organisations for their provision of perceived better care.\textsuperscript{416} However, studies have indicated more positive results in NGOs, with lower numbers of deaths, lower cost of care and higher quality of care.\textsuperscript{417-420}

In Australia, the government and the not-for-profit sector have recently entered into a partnership to establish a shared vision for NGOs: the National Compact. This followed the 2010 Productivity Commission Report claiming that the sector was uncoordinated, with differences between Commonwealth and state/territory level directives.\textsuperscript{421} Australian cancer control collaborations between NGOs and other agencies appear to be on an ad hoc basis.

There are a number of NGOs with an interest in cancer control, and they are often specifically focused on a particular cancer site. One of the largest groups of all cancer NGOs is Cancer Council Australia and its independent members in each state and territory. Cancer Council aims to help beat cancer through research, and also provides patient information and support services.\textsuperscript{422} The national coverage available through the state and territory–based Cancer Council offices provide a breadth of services that is not always possible through NGOs.\textsuperscript{422}

Collaborations have also been born from particular elements of cancer control, such as the Cancer Research Leadership Forum, which brings together NGO cancer research funding bodies in an effort to improve collaboration and coordination of investments. NGOs are part of a larger approach to cancer control involving a number of government agencies and policies guiding specific initiatives and programs. The approach taken in Australia is outlined in section 8.3. This also describes some NGO activities relating to cancer control in Australia.
8.3 Australian approach to cancer control

Cancer is the largest cause of disease burden in Australia, resulting in approximately 30% of all deaths in 2010.1,2 A greater proportion of older people are affected by cancer, with the mean age of diagnosis being 67 for males and 64 for females in 2007. With a population of 22.6 million, Australia had one of the highest incidence rates of all cancers globally in 2008, with an age-standardised incidence rate of 314/100,000 and an age-standardised mortality rate of 103/100,000.3 According to the IARC GLOBOCAN 2008 working estimates, the age-standardised incidence rate of cancer was higher in Australia than in any other country, largely due to the higher rate of melanoma of the skin and prostate cancer.4

Geographic and demographic characteristics specific to Australia affect cancer control and its implementation. For example, the composition of Australia is such that the population is concentrated on the eastern coastline, while Western Australia and the central parts of the continent are sparsely populated.423 Geographic location can affect the ability to access health care services and cancer survival rates, depending on the type of cancer, with survival decreasing as remoteness increases.424 Cancer incidence and mortality can also vary in different population groups. Immigrant population groups have cancer incidence and mortality trends that vary from Australian-born people.6 With 29% of the Australian population over 15 years of age born overseas, this is an emerging issue.425 In 2010/11, the main places of birth for Australia’s resident population were the UK, New Zealand, China, India, Vietnam and Italy.426 Cancer risk factors can affect these groups differently, based on their host nation trends, such as a higher prevalence of hepatitis B in Vietnamese immigrants.

Keeping in line with global trends, the current focus of the Australian Government is on improvements in preventive health, healthy ageing, acute care and primary health care; equality in funding and access to services; integration of technology; and retention and continuing development of the health workforce.427

The treatment of all NCDs, including cancer, requires distinct functionality from the health care system. Almost universally, health care systems have traditionally serviced patients with acute conditions and are now challenged by chronic illness management and addressing NCD risk factors.295,428 The need for hospital services is increasing, with 1 in 10 hospitalisations a result of cancer-related issues in 2010/11.8 Maintaining a system which provides the most effective and efficient level of service is an ongoing challenge.8

8.3.1 Health care in Australia

Health is a state/territory issue but is made more complex by national frameworks on primary health care, and drug and alcohol consumption. Cancer control can be considered a national issue and, as will be shown, many national policies affecting cancer are developed nationally but jointly coordinated by the Australian Government and the individual State or Territory Governments. The precise nature of the split between these government levels varies by specific initiative. For example, the MBS and the Pharmaceutical Benefits Scheme (PBS) are both managed federally by the Australian Government Department of Health and Ageing (DoHA) and administered by the Department of Human Services. The MBS, the federally funded public health care system, allows access to hospital treatment and services as well as some out-of-hospital treatment and services, and dictates the services that are subsidised by the Australian Government. The PBS outlines subsidised pharmaceutical products. The public health care system operates alongside private health care offerings available, and various other medical and complementary medicine treatments and services.429

Recent health system reforms have divided the funding for primary care and hospitals, which has made the federal and state/territory separation more challenging.430,431 A national funding pool, the Health and Hospitals Fund, was recently created for public hospitals, removing the financial responsibility from the states and territories.430 Recent primary care reform addressed the accessibility of health services, through GP Super Clinics and Medicare Locals, by providing care in underserviced areas and boosting healthcare workers in areas of need.430 Ideally, this will relieve the pressure in public hospitals.432

Changes to the health care system have been stimulated by increasing health care costs. Specifically, the financial burden of cancer is high and rising. Mainly attributed to treatment costs, estimated health expenditure on cancer from 2003 to 2033, assuming a decrease in cancer incidence over this period, has been projected to increase by a total of AUS$6.6 billion to AUS$10.1 billion.432 Rises are attributable to increased services required per cancer
case, population growth, an ageing population and price inflation. The total lifetime economic cost of cancer for people from diagnosis onwards in Australia was estimated to be approximately AUS$94.6 billion in 2005, with 29% representing health care costs (including treatment).444

The direct and indirect health care costs can constrain nations to prioritising cancer care investment over integrated cancer control programs or research initiatives, especially in times of financial strain.391 The cost of cancer treatment in the public health system and to the individual patient is increasing at a greater rate than the launch of treatment innovations to market.391, 435, 436 Even when new drugs are released to market, the cost-effectiveness ratio is often above acceptable thresholds.437 Over the last 20 years, there has only been a handful of new drug treatments that have significantly changed cancer care.438, 439 Novel interventions have been developed, but the cost-effectiveness of their use in cancer care has limited their adoption.391, 435 Public funding for new drugs or treatments is subject to scrutiny by committees independent of government decision-makers, to ensure objective assessments of their cost-effectiveness. There is considerable public funding associated with health care: in 2009/10 more than two-thirds of the total health expenditure was funded by the Federal, State, Territory and Local Governments.1

At a national level, health priorities and allocation of funding has been done by the Council of Australian Governments, which represents Federal, State and Territory Governments and the Australian Local Government Association. It promotes policies of national significance and is involved in key decisions pertaining to the health care system, with the input of health ministers through the Standing Council on Health. This Council is a grouping of all health ministers and is responsible for the overall coordination of public health care delivery. The Australian Health Ministers Advisory Council (AHMAC) advises the Standing Council on Health and is a group of the head health authorities from all government levels. The Medical Services Advisory Committee and the Pharmaceutical Benefits Advisory Committee are the independent committees that advise Australian Government on the cost-effectiveness of new drugs or treatments. Then there are a number of agencies that feed information back to this central point (Figure 8–1).

Shifts in funding uses and policy position on health care often coincide with changes in government leadership. Evidence-based decision models are not used as commonly in public health to guide policy implementation as in clinical practice.440, 441 The relationships and policies relevant to cancer control are depicted in Figure 8–1 to aid our understanding of the evolution in policy and high-level decision-making.

8.3.2 Evolution of cancer control and related policies in Australia

Beginning in the 1980s, cancer control has been incorporated into the national strategic direction for health.58 In 1996, cancer control became a National Health Priority Area and officially on the political agenda.442 The first National Action Plan for cancer was created in 2001443 and led to the Priorities for Action in Cancer Control: 2001–2003 plan outlining prevention, screening, early detection, treatment, support and palliative care.442 The 2001–2003 plan was followed by the National Service Improvement Framework (NSIF) for Cancer in 2005.443, 444 The NSIF outlined high-level policy priorities across the cancer control spectrum.444 All governments in Australia – federal, state and local – endorsed the NSIF; however, there was no implementation plan. A number of the NSIF initiatives have nonetheless been implemented over subsequent years. Individual states and territories were encouraged to form their own localised plans in the place of a national plan.
Up to this point, policy was leading cancer control in the correct direction but the lack of national leadership inhibited overall implementation. A national agency, Cancer Australia, was established in 2006, designed to guide related policy recommendations and the direction of cancer control nationally. However, since 2005, there has not been any updated national plan. In 2010, a National Cancer Expert Reference Group was brought together and was expected to issue a National Cancer Work Plan in 2011 (not publicly released at the time of writing). The National Cancer Work Plan and the National Cancer Workforce Strategic Framework will set the framework for providing coordinated care and fostering a workforce to support ‘best practice’ care in the future. On a regional level, NSW has established a statewide government cancer-control agency, Cancer Institute NSW, responsible for design, delivery and evaluation of public awareness campaigns. Their mission is to improve outcomes in cancer diagnosis, treatment, care and ultimately, survival. This model has not been adopted by other states and territories at this stage.

Since the early 1980s, much of the policy-related activity has revolved around the known risk factors of cancer – tobacco control, alcohol control and nutrition. During the same period, prevention became part of the health agenda. In 1996, the National Public Health Partnership (NPHP) was established to develop a national approach to public health issues, with a prevention focus. Beginning in 1997, prevention was incorporated into a series of Public Health Outcome Funding Agreements, including funding for the breast and cervical cancer screening programs, and later colorectal cancer screening, and placed cancer in the spotlight. The NPHP was disbanded and replaced with two subcommittees of AHMAC in 2006. In 2008, as these agreements were coming to an end, the Minister for Health and Ageing announced the formation of the National Preventative Health Taskforce (the Taskforce), with the aim of developing strategies to tackle the health challenges caused by tobacco, alcohol and obesity, all issues relating to cancer control.

Current key health policies, strategies and agencies relating to cancer control predominantly revolve around the modifiable risk factors of tobacco control, alcohol consumption, nutrition, physical activity and obesity. The focus on modifiable risk factors aligns with cancer control principles and emphasises prevention. Past and present policies are outlined in Table 8–1 as far as they relate to cancer screening, modifiable risk factors and other health issues. The key national policies and strategies relating to specific cancers or risk factors are detailed in section 8.3.5. Some of the more recent strategies around women’s health, men’s health and primary health care are not directly related to cancer, but effective cancer control relies on a well-functioning public health system, improved infrastructure and coordinated primary care. In this way, these strategies improve the platform from which cancer control initiatives are provided. National strategies pave the way for policies and implementation plans in individual jurisdictions. For this reason, many recent strategies have detailed the overarching primary health care issues or health system reform. The aim is to establish an equitable system across the nation to reduce chronic diseases in all Australians.

The National Partnership Agreement on Preventive Health (NPAPH) is the most recent policy to provide practical interventions aimed at creating healthier environments for all Australians. In 2009, the Taskforce developed the National Preventative Health Strategy, which focused on seven strategic directions to reduce premature death, illness and suffering through preventive strategies. Funding has been allocated to these initiatives through the NPAPH, with a maximum total of AUS$872 million committed from 2009 to 2015. The focus on modifiable risk factors aligns with many cancer control strategies that are focused on cancer prevention. The targets set are:

- To stop and reverse the increase in overweight and obese Australians
- To reduce daily smoking rates to 10% or less by 2020
- To reduce short-term risky/high-risk alcohol intake levels to 14% and long-term risky/high-risk levels to 7% by 2020
- To contribute to the National Partnership Agreement on Closing the Gap in Indigenous Health Outcomes targets

Health care reform overall was formalised in July 2012 through the National Health Reform Agreement (NHRA), after two years of negotiation between the Federal, State and Territory Governments, with the aim of improving the delivery of health and aged care. The focus of the NHRA is around patient access to services and improving the efficiency of public hospitals, which are run by the State and Territory Governments and primary health care. Public health care reform overall was formalised in July 2012 through the National Health Reform Agreement (NHRA), after two years of negotiation between the Federal, State and Territory Governments, with the aim of improving the delivery of health and aged care. The focus of the NHRA is around patient access to services and improving the efficiency of public hospitals, which are run by the State and Territory Governments and primary health care.
### Table 8-1
Past and present policies on modifiable risk factors in Australia

<table>
<thead>
<tr>
<th>Year</th>
<th>Policy/Agreement</th>
<th>Modifiable risk factors</th>
<th>Health care system and primary care issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>Food and Nutrition Policy</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td>National Health Policy on Alcohol in Australia</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>National Health Policy on Tobacco in Australia</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>Food and Nutrition Policy</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>
| 1996 | Stage 1: National Public Health Nutrition Strategy | ✔ | ✔
| 1999 | 2nd Public Health Outcome Funding Agreement | 1999/00-2003/04 | ✔ | ✔ | ✔ |
| 2000 | 1st National Palliative Care Strategy | ✔ | |
| 2004 | 3rd Public Health Outcome Funding Agreement | 2004/05-2008/09 | ✔ | ✔ | ✔ | ✔ |
| 2006 | National Alcohol Strategy | 2006-2011 | ✔ |
| 2009 | National Preventative Health Strategy | ✔ | ✔ | ✔ | ✔ |
| 2009 | National Partnership Agreement on Preventive Health | 2009-2018 | ✔ | ✔ | ✔ | ✔ |
| 2010 | 2nd National Palliative Care Strategy | ✔ | |
| 2010 | National Primary Health Care Strategy | ✔ |
| 2010 | National Women’s Health Strategy | ✔ |
| 2010 | National Male Health Strategy | 2010-2014 | ✔ |
| 2011 | National Drug Strategy | ✔ | ✔ |
| 2012 | National Health Reform Agreement | ✔ |
| 2012 | National Tobacco Strategy | 2012-2018 | ✔ |
| 2013 | National Cancer Workforce Strategic Framework | ✔ | |
have had to develop a proven reputation to be able to recently. As a result, in their initial phases, these agencies health space have been established only relatively agencies working in the healthy ageing and preventive manage effectively. Additionally, many of the government present a challenge for the Australian Government to and the number of policies and programs that exist The complexities of the systems governing cancer control November, 2013

8.3.3 Government agencies
Changes in the 2000s led to the inception of a number of government agencies designed to guide health reform implementation (Figure 8–1). The National Health Performance Authority, the Australian National Preventive Health Agency and Health Workforce Australia (HWA) have all been created from 2009 onwards, and have been given the brief of monitoring the performance of the public health system, improving health outcomes through prevention, and building capacity of the health workforce, respectively. Other related agencies include the AIHW, the ABS and the NHMRC. The AIHW is a national monitoring agency established in 1987 for the collation and provision of information and statistics. All health and welfare issues are covered, and cancer-based reports are produced using data from the ABS, the national statistical agency, and state and territory cancer registries. The NHMRC’s role is to promote the development and maintenance of public and individual health standards through managing research funding, and developing advice on health-related issues. It assists in setting research priorities and directing funding to important health and medical research areas. The complexities of the systems governing cancer control and the number of policies and programs that exist present a challenge for the Australian Government to manage effectively. Additionally, many of the government agencies working in the healthy ageing and preventive health space have been established only relatively recently. As a result, in their initial phases, these agencies have had to develop a proven reputation to be able to influence and indeed modify individual behaviours. Working at a national level, there is also the potential for duplication of roles or responsibilities, with existing organisations at both national and regional levels. These factors, combined with the political agenda set by the Australian Government, can take the focus off the main aim of cancer control initiatives in practice. In these situations, NGOs, which often have goodwill in the community and reputable backgrounds, can be effective in promoting the cancer control programs in the long term.

Leadership in health care and cancer control is important to the success of new initiatives. Laws and regulations can be used as tools to modify behaviour of populations, through legislation restricting or changing access to harmful substances or limiting harmful situations, and improving access and availability of health services for primary and secondary prevention. Health promotion activities conducted in parallel to legislative changes promote the sustainability of behavioural changes initiated by an individual, and can modify the local environment to support healthier living. For cancer control, further regulation is required on the tobacco, alcohol and food industries. To date, only changes to tobacco consumption have had a notable effect on modifying the behavioural risk associated with cancer.

8.3.4 Australian cancer control policy
Individual states and territories have developed specialised cancer control plans. In NSW, for example, the Cancer Institute NSW led the process for the development of a cancer plan aimed at increasing the survival rate for cancer patients, reducing the incidence of cancer, improving the quality of life of cancer survivors, and developing expertise in cancer control for the region. In Victoria, the State Government prepared a cancer action plan to ensure all individuals have access to services throughout the process of cancer control. The overall aim is to increase the cancer survival rate to 74% by 2015. The uniquely diverse population of Australia has resulted in some differences in health outcomes among some minority and ethnic groups. Many reasons for these differences have been debated, but generally revolve around more limited access to screening, diagnostic and treatment services. Participation in preventive health programs and clinical trials could also have influenced these differences apparent between minority groups and the overall population. Notable exceptions are lower incidence and mortality rates of melanoma and colorectal cancer in immigrants – with the exception of those who are New Zealand–born for colorectal cancer, compared with Australian-born individuals. Higher
rates of melanoma are thought to be because of the higher exposure of Australian-born people to ultraviolet radiation in early childhood. Considering this cultural diversity, ethnic differences are a specific focus of the Australian Government. However, reliable data in relation to incidence and mortality of immigrant populations is not routinely available.

8.3.5 Existing cancer control-related programs and initiatives

Government spending on public health programs has been steadily increasing. Most recently, the Australian Government allocated AUS$872 million over 6 years to the NPAPH, the largest government spending on health promotion and associated activities to date. For the financial year 2009/10, the public health investment in Australia by government and non-government agencies was AUS$2 billion. This was down from the previous years, when spending reached a high of AUS$2.3 billion in 2007/08. The level of spending fluctuates depending on the particular initiatives being conducted in a given time period, and although not all expenditure is cancer-related, the higher levels of spending before 2009/10 were attributed to the implementation of the National HPV Vaccination Program.

Currently, the range of public health and preventive services in Australia are coordinated and administered by the previously mentioned agencies in conjunction with additional stakeholders made up of both intra- and intergovernmental agencies. Broadly, the services that relate to cancer control are:1

- Immunisation services and other communicable disease control
- Programs to reduce the use and harmful effects of tobacco and alcohol
- Prevention programs to reduce weight gain and to promote physical activity and healthy eating choices
- Programs to promote sun protection
- Environmental monitoring and control, including management of harmful chemicals
- Screening programs for breast, cervical and colorectal cancer.

Programs, positions and other non-government agency initiatives are not always specific to cancer control but address the underlying modifiable risk factors. They are outlined using the National Cancer Prevention Policy as a framework. The policy detailed recommendations for cancer prevention that require action on national level from governmental and non-governmental stakeholders.

8.3.5.1 Indigenous people

Aboriginal and Torres Strait Islander people (hereafter respectfully referred to as Indigenous people) comprise approximately 2.5% of the Australian population. Overall, the life expectancy of Indigenous Australians is 10 years lower than non-Indigenous people, and is similar to that of the life expectancy reported for low–middle income countries. The high burden of cancer contributed greatly to this difference in overall disease burden and life expectancy.

Although not a key element of the analysis, it is important to acknowledge Australia’s diverse ethnic composition affects cancer incidence and mortality rates. Since 2008, efforts to quantify the effects of ethnicity on incidence and mortality have led to improvements in recording Aboriginal and Torres Strait Islander status on pathology, hospital admission, outpatients forms and the death certificate. To specifically address issues relevant to Indigenous people, the DoHA released an Indigenous Chronic Disease Package as part of the National Partnership Agreement on Closing the Gap in Indigenous Health Outcomes, to initiate preventive programs and improve access to primary care services.

8.3.5.2 Tobacco control

Globally, tobacco smoking is the most serious risk factor of premature mortality and cause of cancer. Not only is smoking a cause of cancer, but environmental smoking has a causal relationship with increased cancer risk in males and females. Preliminary studies linking smoking and cancer came to light in the 1940s, but anti-smoking campaigns gained more powerful momentum in the 1960s and 1970s, with landmark reports in the USA and the UK, and Doll and Peto’s reporting of the association between excess risk of lung cancer and number of cigarettes smoked. Tobacco control is one of the main areas of cancer prevention, as smoking is the number one most preventable cause of poor health, and the disease burden.

Estimates of tobacco-attributed deaths in Australia from all causes range from 15,000 to 19,000 per annum.
caused by smoking is still considered unacceptably high in Australia.\textsuperscript{457, 467} Estimates of tobacco-attributed deaths in Australia from all causes range from 15,000 to 19,000 per annum,\textsuperscript{483} and smokers reduce their life expectancy by an estimated 10 years.\textsuperscript{484, 485}

Historically, there have been higher mortality rates in males associated with smoking than females. Recently, the rates for females have risen and risk of mortality is almost identical to males.\textsuperscript{233, 485} The Million Women’s study in the UK showed that females who ceased smoking at 40 years of age avoid approximately 90% of the risk of current smoking, despite their higher mortality rate than never smokers.\textsuperscript{486} This supports other analyses which have shown that smoking cessation, rather than a reduction in smoking, is most effective in reducing death from any cause.\textsuperscript{486}

In Australia, public health campaigns to promote smoking cessation began in the early 1980s.\textsuperscript{467, 487} Adult smoking prevalence (regular smokers) in 1980 was 30% in females and 41% in males.\textsuperscript{487} The Australian Government’s approach to tobacco control was formalised in 1991, with the National Health Policy on Tobacco, raising the issue to the status of national health concern.\textsuperscript{488} Over time, national strategies relating to tobacco have been released, and have increased the legislation pertaining to tobacco advertising, distribution and consumption.\textsuperscript{487, 488} In 2010, prevalence of regular smokers dropped to 18% in females and 22% in males.\textsuperscript{487} The overall number of daily smokers dropped between 2007 and 2010 in people over 14 years of age.\textsuperscript{487} The drop is attributed to a variety of policies, restrictions, taxes and public health campaigns.

National public health awareness campaigns are being conducted to further reduce prevalence. Over 4 years, AUS$61 million of the NPAPH is being used for a national social marketing campaign on tobacco risks, with specific campaigns initiated to access particular groups of people, such as pregnant females and people living in low socioeconomic areas.\textsuperscript{483} The national QuitNow program aims to support individuals through the whole smoking cessation process by providing personalised support.\textsuperscript{483}

Currently, a National Tobacco Strategy exists and is a guide for legislation at a State and Territory Government level. Additional restrictions are in place to improve tobacco control, such as advertising regulations for tobacco products limiting their promotion, and smoking bans in restaurants, pubs and other public places.\textsuperscript{454}

Packaging of cigarettes has undergone major changes to include graphic warnings and, more recently, the plain packaging of cigarettes.\textsuperscript{490} Higher excise taxes have been introduced to reduce the affordability of tobacco and, hopefully, to discourage more people from smoking.\textsuperscript{465} In August 2013, it was announced that the excise tax would be increased again by a further 12.5% over a 4-year period to reduce premature deaths and diseases caused by smoking.\textsuperscript{491}

8.3.5.3 Alcohol control

Alcohol is similar to tobacco in that it is one of the known lifestyle factors associated with increased cancer risk.\textsuperscript{492} Changes to legislation on a global scale have been recommended to address the harmful use of alcohol and support behavioural change.\textsuperscript{493} Alcohol drinks and ethanol are carcinogenic to humans, and there is a dose-response association with cancers of the oral cavity, pharynx, larynx, oesophagus, colon and rectum, liver and female breast.\textsuperscript{72} Limited consumption of alcohol is recommended to reduce the risk of cancer;\textsuperscript{494} as existing evidence does not indicate a level of consumption where the risk of cancer is increased or decreased.\textsuperscript{38} However, emerging evidence identifies heavy alcohol consumption (≥50 grams per day) as having a positive association with increased risk of all cancers and low alcohol consumption (≤12.5 grams per day) with a reduced risk of cancer.\textsuperscript{495} These new findings, along with the beneficial effect of low-level consumption on cardiovascular health,\textsuperscript{495, 486} suggest that further research is needed to establish the dose-response relationship in specific cancer types.

Beginning with a national health policy on alcohol in Australia in 1989, levels of alcohol consumption have been addressed in various legislations through to the National Alcohol Strategy (2006–2011; not updated at the time of writing) and incorporated into the National Drug Strategy framework (2010–2015).\textsuperscript{457, 458, 497} NHMRC guidelines, beginning in 1986, have consistently recommended limited consumption of alcohol to avoid the harmful effects of alcohol.\textsuperscript{498} In 2010, the number of people over 14 years of age consuming alcohol on a daily basis declined in comparison to 2007.\textsuperscript{273} There was only very little change to the number of people drinking at risky levels over the same period of time.\textsuperscript{273} The current public health initiative related to alcohol consumption focuses on binge drinking among young people.\textsuperscript{499} Although the guidelines and campaigns are not exclusively focused on reducing risk factors for chronic disease, it is raising awareness of safe drinking practices (ie following recommended guidelines) and healthy behaviours at a young age with the hope that these responsible drinking practices will continue later in life.
Aside from increasing the risk of some NCDs, alcohol abuse has a large social cost to the community. An estimated AUS$15.3 billion made up the total social cost of alcohol abuse in 2004/05. Changes to public policy and specific interventions to reduce the social cost would include increasing the taxation on alcohol, restricting the promotion of alcohol, continued reduction of drink driving through more random breath testing and/or lowering the legal blood alcohol concentration level and, finally, through the implementation of brief interventions by primary care workers to reduce alcohol consumption. Although these interventions may not be exhaustive or practically plausible, they can guide policy development with a broad-reaching positive impact in the long term.400

Changes to legislation in relation to alcohol consumption have not been as forthcoming as tobacco-related changes. Alcohol, while being harmful in excess, is still socially acceptable to consume, and is not as stigmatised as smoking is becoming. The alcohol industry has become increasingly active in political discussions, which may affect the consumption or demand for alcohol both nationally and internationally.400, 501 The alcohol industry’s role and responsibilities in public health is being debated.406 The advertising code for alcoholic beverage promotions, issued in 2009, recommends that a responsible approach to alcohol consumption is depicted, and that advertising is not targeted directly at children or adolescents.502 Experts in the area have suggested that implementation of the new code have not been effective in reaching underage exposure to alcohol advertising.503 Current debate also exists around the implementation of minimum pricing of alcohol and tax reform, opposed by large industry players as affecting moderate drinkers rather than the problematic heavy drinkers.503, 504 It has been claimed that a reallocation of resources dedicated to reducing alcohol-associated harm could achieve a greater reduction in health burden than is currently seen.501

8.3.5.4 Community wellbeing: nutrition and physical activity initiatives

Obesity is a growing epidemic in Australia as well as in other developed countries.505, 506 The Global Burden of Disease Study in 2010 identified high BMI as the leading risk factor in Australasia, with physical inactivity and low activity ranking fourth for the region, indicating the growing nature of the problem.400 Obesity in the USA was estimated to have caused up to 14% of all cancer mortality in males and up to 20% in females over 50 years of age.507 Obesity has been linked to an increased risk of cancers of the colon, kidney, oesophagus, endometrial and breast (in postmenopausal females).508 It is also associated with a modest increase in risk of thyroid cancer in females.509 Weight control, through a reduced-calorie diet, is one of the important modifiable risk factors for cancer.509 Additionally, obesity is linked with a number of other chronic diseases, which can make it both difficult to study in relation to a single disease type and more important to understand.509 Obesity can also limit the ability to provide treatment to cancer patients, such as external beam radiation.510

The 2011/12 National Health Survey in Australia showed the increasing prevalence of overweight and obese adults aged 18 years and over since 1995.511 Much of this increase is attributed to the increased consumption of energy-dense foods and junk food, and an increasingly sedentary lifestyle.406, 505, 506 In 2011/12, 63.4% of the adult population were classified as overweight or obese, rising from 56.3% in 1995.511 However, the obesity rate in Australian children aged 5–17 has remained stable at 25.3%;511 but only limited time points are available to track changes in children.512 Addressing the obesity epidemic cannot be achieved without supporting government policy to endorse change.513 The NHMRC provides dietary guidelines for all Australians to promote health and wellbeing, as well as to reduce the risk of conditions caused by poor diet.514

The association between improved nutrition and cancer risk is not always clear. However, Willett515 estimated in 1995 that approximately 32% of cancer cases could be avoided through dietary changes. As such, recommendations for healthy living, and cancer prevention, incorporate a balanced diet and maintaining regular physical activity.514, 516 The EPIC study has been designed to investigate this relationship and that of other lifestyle factors with cancer, as well as their association with other chronic diseases.517 Preliminary evidence from EPIC shows that improved nutrition can reduce the risk of cancer, although this relationship varies depending on nutrient intake and cancer type.518 The World Cancer Research Fund and the American Institute for Cancer Research also produce reports evaluating existing evidence on food, nutrition and the prevention of cancer to produce a more solid evidence base and to guide future research.96

Physical activity was not publicly accepted as a modifiable risk factor related to cancer until the late 1990s, when supporting research was released. To this day, the association is supported predominantly by observational studies rather than randomised control trials. However, increased physical activity is now widely accepted as having an overall positive association with...
health improvements, and is incorporated into management guidelines for cancer. Increased physical activity can reduce the risk of many chronic diseases, including cancer. Positive associations between increased physical activity and reduced risk of cancer have been established for colorectal, breast and endometrial cancers. Some studies suggest that prostate, kidney and lung cancer risk are reduced with increased physical activity, but the evidence is still inconclusive. Public health messages encourage increased physical activity, but there are no specific physical activity recommendations that could apply to all cancers.

Public health campaigns to promote physical activity and reduce obesity have been in place since the late 1970s, beginning with the Life. Be In It! campaign, the first Food and Nutrition Policy in 1979, and in 1989 when dietary guidelines were developed. The 1992 Food and Nutrition Policy was formalised the Australian Government’s commitment to improving nutrition in all Australians. Through the 1990s, the Food and Nutrition Policy led to the Stage 1 National Public Health Nutrition Strategy, developed through NPHP, and represented the framework for government authorities working in this area. The Eat Well Australia program was the NPHP’s nutrition strategy and action plan launched in 2000. The strategy aimed to guide public investment into improving nutrition through to 2010. The Eat Well campaign, stemming from this strategy, was launched the following year.

In 2005, Be Active Australia: A Framework for Health Sector Action for Physical Activity, 2005–2010 was released. Its aim was to provide strategic guidance in the promotion of physical activity through public policy and public action, and to enable behavioural change. Its recommendations included a highlighting of the need to consolidate the various investments in programs and other funding from government, NGOs and industry. This framework has spawned a series of programs.

The National Preventative Health Strategy includes many preventive programs specific to social groups or communities of people. For example, the healthy children initiative aims to encourage healthy lifestyles at a young age, which is a reportedly cost-effective method of beginning to combat obesity. The Get Set 4 Life – Habits for Healthy Kids guide provides information to encourage healthy habits in children, and incorporates health checks for four-year-olds to assess all health indicators. The national Go for 2&5 campaign also began in 2005 as a joint initiative by the Federal, State and Territory Governments. Initially, AU$4.76 million was invested to promote the consumption of fruit and vegetables in children and their parents. The Measure Up Campaign targeted nutrition and obesity in adults aged 25–50 with children, and 45–65-year-old adults, in an effort to reduce chronic disease risk factors. An offshoot of this campaign is the Swap It, Don’t Stop It initiative, which encourages all Australians to choose healthier meals and increase levels of physical activity. Evaluations of these programs have shown their success in raising awareness, but there was little behavioural change found. State-based programs have also been initiated to promote healthier lifestyles, such as Cancer Council NSW’s Eat It To Beat It campaign.

The federal Healthy Communities Initiative funds Local Governments to implement community-based physical activity and healthy eating programs, and policies promoting healthier lifestyles. Healthy Spaces and Places is a service for building and design practitioners, to educate them in design principles and development types that promote healthy and active living. These initiatives are broadly targeting wellbeing and the reduction of all chronic illnesses. Their benefit is indirectly transferable to cancer control.

Many individuals, organisations and industries play a part in the responsibility of reversing the obesity epidemic. In 2008, obesity was established as a National Health Priority Area, highlighting the focus on obesity prevention. The Australian Government is responsible for modifying policy and supporting initiatives to create an environment that supports healthy behaviours. The onus is also on the food manufacturers, food retailers, the school system and the individual. Government has largely funded public health campaigns, some infrastructure changes, and programs run through schools and workplaces to promote healthy eating – while the food industry has been largely unregulated in how their products are marketed to society and especially children. International debate exists concerning the responsibility of unhealthy industries in addressing the prevention of NCDs through modifiable risk factors such as obesity. Some claim that it is only through legislative action to modify the existing environmental pressures that the prevalence of obesity can be truly reduced. Legislation around all facets of food production systems, food advertising and targeting of children, as well as those issues influencing
the physical environment, can benefit obesity prevention.533
The complexity of food policy structures and the decision-making process affecting change create barriers to the implementation of prevention policy around obesity.533

8.3.5.5 Skin cancer: prevention and screening

Australia has the highest rate of melanoma of the skin worldwide.6 Over 1,000 Australians are estimated to die of melanoma every year,534 and it is almost entirely preventable through appropriate sun protection. Although there has been evidence to suggest that screening may be effective,535 there is currently no population-based screening for skin cancer. Individuals being encouraged to report any unusual changes and medical monitoring of any high-risk patients is deemed to be sufficient.534 The emerging purported link between a deficiency of vitamin D (which is normally obtained from sunlight) and chronic diseases has complicated the sun protection message.536 In the early 2000s, there was a rapid increase in the number of skin cancer clinics in Australia, which has resulted in clinics and general practitioners being involved in the treatment and management of skin cancer, both with similar diagnostic accuracy.306, 535, 536

Over the years, there have been a number of public health campaigns aimed at minimising skin cancer risk through education, and discouraging the use of sun beds and solaria. NGOs have played a large part in promoting sun protection behaviour.49 The sun protection public health campaign in Victoria by the then Anti-Cancer Council has prevented more than 100,000 skin cancers.537 In 1981, the Slip! Slop! Slap! campaign was introduced, which evolved into Slip! Slop! Slap! Seek! Slide! in 1989, which recommended the use of protective clothing, hats, sunscreen, shade and sunglasses.539 Modifications to the target groups of the campaign reduced the impact of the campaign on knowledge and awareness of safe practices in people outside the targeted groups.539

The gravity of unsafe sun practices has encouraged the development of policies to guide regulations. NSW has led the way with the recent release of a Skin Cancer Prevention Strategy to encourage the reduction of overexposure to ultraviolet radiation.319 States such as NSW and Victoria have stringent legislation placed on the operation of solaria and will bring in a ban on all solaria by the end of 2014.320 The recent announcement of the 2014 ban in Victoria has resulted in outrage from solarium owners, but despite this negative reaction, the Australian Government is committed to developing a nationwide ban.540 Melanoma of the skin is discussed in more detail in section 7.6.

8.3.5.6 Colorectal cancer: screening

International evidence of effectiveness of colorectal (bowel) cancer screening emerged in the early 1990s541-543 and the first population-wide programs were established in Japan and Israel in 1992 and 1993 respectively; however, Australian adoption has been slow.544 Australian national guidelines have advocated screening since 1999 for asymptomatic people from the age of 50 years.30, 31 FOBTs have been available from 1982 via the Rotary program Bowelscan, which is run annually throughout most states of Australia at a nominal cost to the individual. An awareness, education and screening campaign, Bowelscreen Australia®, is also run through community pharmacies, which makes FOBT kits available to asymptomatic people over 50.546 A nationally organised and funded Bowel Cancer Screening pilot was conducted from 2002 to 2004, to establish the feasibility and cost-effectiveness of a population-based program of its kind in Australia.67

A federally funded National Bowel Cancer Screening Program was then developed, and all Australians turning 50 and 55 were invited to participate from 2006, and those turning 50, 55 and 65 from 2008.5 The program was extended to include Australians turning 60 from 2013, and will incorporate people
turing 70 from 2015.67 Eligible participants are contacted via mail and asked to complete an immunochemical FOBT kit in their home, which is then sent to a pathology laboratory.67

The program was suspended from May 2009 to December 2009, due to a higher than normal number of negative results in the six months prior. The kits being used were changed and the program recommenced.548 The program has received some criticism for being poorly planned, not incorporating sufficient forward planning based on evidence to cope with the volume of follow-up required, and not meeting the recommendations of biennial screening.104

The 2012/13 federal budget included details of program expansion through to 2034, when all Australians aged 50–74 should be provided with the opportunity to be screened every two years.547 The 2013/14 federal budget incorporated AUS$16.1 million to potentiate the program register by incorporating electronic reporting by health professionals.102

8.3.5.7 Cervical cancer: vaccination and screening

Following international trends, Australia introduced the National Cervical Screening Program in 1991. The program recommends that all females aged 18 or over (or 2 years after their first sexual encounter) have a Pap test until the age of 69, to check for precancerous or cancerous cells. The test is funded through the National HealthCare Agreements and the MBS, and conducted in a primary care facility by either a general practitioner or a qualified practice nurse (in rural or remote locations).69

Each State or Territory Government is responsible for the implementation of the program locally. This involves a register of all females who have been screened, to enable timely reminders at 27 months after a negative test result, if required, and diagnostic facilities required to administer screening.116 Screening intervals of two years are currently being used in Australia, a more intensive approach than followed by some nations such as the UK, as it has been argued that the initial phases of implementation require a safety margin.145 A program renewal is currently being conducted to ensure all recent advancements in cervical cancer screening are incorporated into the program.145

Persistent HPV infection has been linked to cervical cancer. A HPV vaccine was developed and approved for use in 2006.548 Prior to its administration, there was evidence of debate in the scientific community as to the safety and efficacy of the vaccine.548 The objective approval process, through the Pharmaceutical Benefits Advisory Committee, was undertaken in 2006 but its rejection of the proposal to include the vaccine on the PBS did not receive positive public response, and the Australia Government was pressured to overrule this recommendation.548, 549

The cost-effectiveness of the vaccine, the reason for which it had been rejected, was revised when the DoHA reportedly negotiated a revised price of the vaccine with the manufacturer.548 The results of extensive lobbying were seen in the approval of the vaccine and its administration in practice from 2007.

Currently, the quadrivalent vaccine against high-risk types HPV16 and HPV18 and low-risk types 6 and 11 is administered in Australia. Australia was the first country to begin a vaccination program for females aged 12–13 years from 2007.136 When the program was first introduced, there was also a catch-up program run for cohorts of females up to 26 years of age.136 Moving forward, the challenge will be to integrate the HPV vaccination program and screening to maintain a cost-effective system for cervical cancer prevention and screening. Since February 2013, boys aged 12–13 years have also been eligible for vaccination, with a 2-year catch-up for boys aged 14–15 years.136 Others have spoken out regarding the vaccination of boys, claiming it is of little to no proven benefit,550 especially in light of an effective program among girls.551 The boys’ program has begun in Australia and there are calls for its introduction in the UK.137 Cervical cancer, vaccination and screening are discussed in more detail in section 7.2.

8.3.5.8 Breast cancer: screening

BreastScreen Australia is the national breast cancer screening program, which started in 1991 and is dually funded by the Federal and State and Territory Governments.1 Females aged 50–69 are targeted for 2-yearly mammograms, though women from 40–49 years of age and 70 years and over were also considered eligible. An evaluation of the BreastScreen program in 2006/07 showed that participation in the program was declining. The report recommended a change to the age groups that have access to the program. Recommendations focused on changes to the age groups eligible for screening. If the report’s recommendations were implemented, females aged 40–44 and 75+ would no longer be eligible, and the invited target group for screening would be extended to include females aged 45–49 and 70–74, despite the limited evidence to support the effectiveness of their inclusion.26
Despite the lack of conclusive evidence, the target group has recently been extended to 74 years of age. In addition to the targeted age group, females aged 40–49 and 75 and over are also eligible to attend. Screening is conducted in specialised facilities with national accreditation for service provision. In addition, a federal government initiative supports the placement of specialist breast cancer nurses in regional and remote locations through the McGrath Foundation. The issues with the existing program revolve around the limited national guidelines and the current accreditation system that results in jurisdictional differences in service delivery and inequity across screening locations; limited workforce resources; and non-comparable data sources across states.

Recently, some BreastScreen facilities have begun using digital screening technology for mammograms. A review in South Australia has raised some concerns, finding 95 fewer smaller cancers than expected. The process is currently under independent review.

8.3.5.9 Liver cancer: hepatitis B immunisation

A large proportion of liver cancer cases are associated with hepatitis B and C infection. A vaccine for hepatitis B was developed over 20 years ago; however, hepatitis C is still without a vaccine. The hepatitis B vaccine has been administered to at-risk groups from 1988 and was later phased in as part of the adolescent program in Australia from 1997. After the 1996 update to NHMRC guidelines, hepatitis B vaccination became part of the National Infant Immunisation Program Schedule in 2000.

Various preventive practices can be implemented to limit the prevalence of hepatitis B and C. These include safe injection practices and safe blood transfusions. These initiatives are covered by the National Hepatitis B Strategy 2010–2013 and the Third National Hepatitis C Strategy 2010–2013, partnerships between governments and the community.

Liver cancer and immunisation are outlined in more detail in section 7.1.

8.3.5.10 Prostate cancer: testing

Prostate cancer is very common, with incidence rates rising across the globe. There are two common purported screening procedures for prostate cancer: the PSA blood test and the DRE. The Priorities for Action in Cancer Control: 2001–2003 plan included a call to disseminate information to promote informed decision-making relating to PSA testing.

A survey of males in 2012 found that 64% of respondents between the ages of 40 and 74 had been tested at least once for prostate cancer, and 41% were tested in the 12 months prior to being surveyed. Despite these high numbers of participants, Australia does not currently support the use of PSA testing as a population screening test. The Australian Government has recently allocated AUS$4 million to fund a new prostate cancer research centre and to continue funding of existing centres focused on this issue.

Prostate cancer and screening are discussed in more detail in section 7.7.

8.3.5.11 Occupational cancer prevention

Occupational cancers have decreased in high-resource countries over the past 50 years, due to the move away from heavy industries where the risk of exposure was higher, and the implementation of procedures and processes addressing occupational exposure. Industrialised countries have banned or restricted use of carcinogenic materials; however, in developing nations, their use is still common. In Australia, industries susceptible to occupational cancers have been mandated to put in place preventive measures and minimise the risk to workers.

Primary prevention through workplace regulation, worker education, removing carcinogenic substances from the workplace, and adhering to safe practices are the most efficient and cost-effective measures to overcome occupational cancer. Screening of people working in high-exposure environments has been suggested but is not used in practice, as no screening program has been found effective. Occupational cancers are difficult to distinguish from other cancers, with the exception of mesothelioma, which is caused by exposure to asbestos; thus the extent of harm caused cannot always be fully be understood.

In Australia, it has been estimated that 5,000 cancers each year are caused by occupational exposure to carcinogens. Asbestos, one such carcinogen, was widely used in Australia until its ban in 2003 and, as a result, Australia has high rates of asbestos-related diseases.
including cancer, and in particular, mesothelioma. The responsibility for asbestos management is shared by all levels of government, but the majority of daily management falls on local councils. There are cases associated with childhood exposure to these materials. A Western Australian community located close to an asbestos mine has higher all-cancer incidence and mortality from childhood exposure. A recent Asbestos Management Review, commissioned by the Australian Government, recommended the development of a National Strategic Plan to lead the way and eliminate jurisdictional differences. As a result, the Government announced the launch of the Office of Asbestos Safety, to develop the National Strategic Plan which is currently underway.

8.3.6 Cancer control data sources: monitoring of trends

Cancer-related data are critical in establishing an understanding of the cancer burden and past, present and future trends. In many countries, the registration of new cases of cancer has not been a legal requirement. Historical data are not always accurate and, although improving, estimates can often be incomplete and not of high quality. WHO and NGOs play a significant role in advocating for the improvement of recording of cancer cases and tracking of global trends of cancer-related statistics.

In Australia, indicators to measure chronic diseases have been developed by the AIHW. In relation to cancer, the specific indicators focus on incidence, prevalence, mortality and survival of particular cancer types. There are also a number of indicators relating to risk factors associated with cancer and an overall risk index for chronic disease, which will improve analyses of trends over time.

Indicators of the prevalence of cancer risk factors are calculated by the ABS. Relevant data are largely available through the National Health Survey results. Information relating to cancer risk factors and social trends, such as tobacco and alcohol consumption and obesity indicators, are also available through these data sources. Often the sampling methods used allow trends to be generalised to the total population.

The AIHW has had an ongoing program to estimate tobacco- and alcohol-related mortality and morbidity using a number of indirect methods based on risk estimates of effect from all over the world. These have been key to identifying the enormous burden caused by tobacco, but these methods do yield varying results: for example, the number of tobacco-attributed deaths varies from 15,000 to 19,000 depending on the method used. Considering the diversity present in the Australian population, more accurate data-collection methods could be sought. Including questions on the death certificate, for example, have been useful in gaining insight into tobacco-related deaths in South Africa. If similar information were gathered in Australia, it would vastly improve evidence to support tobacco control activities. It could also improve the quality of data collected for disadvantaged population groups, which become problematic when comparing cancer indicators in subgroups.

Australia is one of the few countries that has complete national cancer registration. Data on new cancer cases in Australia have been recorded in the Australian Cancer Database from 1982. The data are sourced from state and territory registries. In Australia, it is a legal requirement to register any new cases of cancer with the local cancer registry. The AIHW Cancer and Screening Unit is responsible for monitoring, investigating and reporting on cancer incidence, prevalence, mortality and survival. The unit compiles data from the individual registries and from other sources through the National Cancer Statistics Clearing House, in collaboration with the Australasian Association of Cancer Registries. These data are used to calculate incidence rates in Australia. The National Mortality Database is also used to compute prevalence, mortality and survival rates. Again, this is maintained by the AIHW with data provided by the Registrars of Births, Deaths and Marriages, and coded into disease states by the ABS. The only two points at which mandatory recording are required are diagnosis and death. The ABS also provides information on the demographic profile of the Australian population that is used in analyses. Along with the Australian Cancer Database, the AIHW also maintains databases for BreastScreen, the National Cervical Cancer Screening Program and the National Bowel Cancer Screening Program.

The National Cancer Data Strategy addresses the current lack of information on family history, incomplete identification of Indigenous status, limited country of birth data, limited occupational data collected and no collection of information on precursor lesions. This lack of information limited our ability to compare trends across groups and for different grades of disease. These are all being targeted as areas for improvement.

Cancer Australia has recently been allocated AUS$2.4 million in funding to collate national cancer data pertaining to the stage of cancer at diagnosis, treatment and frequency of
Analysis of cancer treatment pathways require linked data from more than one source in the health system. Record linkage is becoming a more important component of cancer research, and can help identify causal relationship and expand on existing understanding of relationships.566

Additionally, MyHospitals has been established to gather information in relation to Australian public hospitals and is managed by the AIHW. A 2012 report recorded hospital waiting time for cancer surgery for the first time. Waiting times, it stated, were dependent on the urgency of surgery, and benchmarking will now be take place to track performance in public hospitals.569

8.4 Cancer control in practice

In practice, cancer control is implemented in varying ways. In both the first and second line stages of prevention, screening and diagnosis of cancer, primary health care professionals play a pivotal role. General practitioners, pharmacists, nurses and other allied health care professionals can help individuals. Initially, health care professionals play a role in endorsing preventive health measures. Also, the administration of vaccination and immunisation programs takes place predominantly in the primary care setting. Screening and diagnosis can also occur in the primary health setting, but often require the involvement of specialised professionals, or primary care professionals with specialised training. Once diagnosed, the patient is referred to oncology specialists for individual treatment.

In 2003, the now disbanded National Cancer Control Initiative, a collaboration of the Australian Government DoHA and Cancer Council Australia, worked with the lead oncologist association, the Clinical Oncological Society of Australia, to prepare a report outlining the reforms needed in cancer care.570 The focus was on continuity of care and integration of the health care system to improve the treatment experience of cancer patients.570 Cancer care and treatment is generally provided by a multidisciplinary team of oncology specialists and other members of the primary care team. In theory, multidisciplinary teams deliver in the best treatment outcome for an individual patient’s condition.571 However, the logistics involved in organising these initiatives are intensive, and require substantial leadership and follow-up.571, 572 Evidence suggests that positive outcomes are possible but require investment in team infrastructure and training.571, 573

8.4.1 Cancer care: key elements and emerging issues

Aside from the policy-specific actions and programs currently being rolled out, there are additional issues relating to health provision and cancer care. These issues relate to available funding for cancer care infrastructure, costs and accessibility to treatment, healthcare workforce capacity, and electronic linkages of patient records to facilitate transitions through the system. Although steps are being taken to address these concerns, at times their importance to comprehensive cancer control can be overlooked if only a prevention focus is used.

8.4.1.1 Cancer care infrastructure, costs and accessibility

As previously discussed, the health expenditure on cancer care is high and treatment-related costs are often inaccessible for an individual patient. Subsidies from governments and other sources are required, as not all cancer-related medications and treatments are included on the MBS or PBS, because of high production costs.

The geography of Australia accentuates the inherent difficulties in providing and accessing adequate health care services, especially for cancer patients. The limited access to health services in rural and remote locations has resulted in a high number of hospitalisations for acute conditions. These rural and remote locations lack the infrastructure and the health care professionals to provide the level of service required. Presumably, the number of acute episodes could be greatly reduced through adequate access to primary, diagnostic and early intervention services.574

Cancer incidence and survival rates are lower in remote areas compared to major cities.5, 575 This suggests that, in general, cancer sufferers in remote locations either do not have the access to screening and diagnostic services to accurately measure incidence of cancer in these locations, or lack adequate access to treatment and monitoring services to improve survival rates. Analysing survival by individual cancer site shows some variations. A NSW study showed that patients in remote locations have an excess risk of 35% of dying of cancer in comparison to those in highly accessible locations, especially for prostate and cervical cancers.424 Movement of patients from remote locations to treatment centres for lengthy periods of time are speculated to contribute to this trend.424 A review of treatment of breast and prostate cancer patients in non-metropolitan locations suggested that improvements to treatment would be possible if general practitioner–based interventions were available.576
There are distinct differences in patterns of care for cancer patients in different locations where consistency is needed. The Australian Government allocated AUS$560 million to the establishment of regional cancer centres and associated accommodation facilities in the 2009/10 budget, as part of the Health and Hospitals Fund. A total of 24 additional regional cancer centres have been proposed and approved, notably the Alan Walker Cancer Centre in Darwin, which has been built to service cancer patients in the Northern Territory. A total of 57 breast cancer nurses dedicated to providing coordinated care are also part of this funding, which was boosted by AUS$19.5 million in the 2013/14 federal budget.

In recognition of the challenges faced by people in rural and remote locations, governments – and some NGOs – provide subsidies for travel and accommodation when required to access health services. The schemes are not limited to cancer patients, and can be used by any individuals who require specialist services. A major criticism of the government program is the lack of awareness in groups that could benefit the most, and the amount of documentation required to receive funding.

A review of radiotherapy services in Australia called for an improvement in availability through better outreach services, and reimbursement for rural and remote residents. The high costs associated with radiotherapy centres and equipment in the initial set-up limits the potential for growth. Once established, radiotherapy facilities are a relatively cost-effective treatment option. As at December 2009, there were 50 fewer linear accelerators than required to service the Australian population’s needs, based on the estimated 52.3% of cancer patients who could benefit from the service. They were distributed unequally around the nation. This meant that only 38% of patients could be treated at the time if all linear accelerators were at full capacity. Radiotherapy services have increased with the rising incidence of cancer, but do not meet the reportedly optimal level of servicing required for cancer patients. However, the situation in Australia is not as problematic as in low- and middle-income countries where the supply of equipment and staff do not meet predicted demand.

Chemotherapy services will also undergo a review, announced in the 2013/14 federal budget, to outline the current arrangements in place and establish a long-term solution to funding for chemotherapy. As an interim measure, an additional AUS$29.6 million was allocated to increase dispensing fees of chemotherapy medications for a 6-month period, from 1 July 2013 to 31 December 2013.

Even when initial treatment has finished, patients require support. Patients in remission require ongoing monitoring at less regular intervals. This means that the continuous management of cancer patients needs to be incorporated into the increasing demand on the system caused by the increased incidence rates. This also includes rehabilitation services. Psychosocial support is funded through the MBS, but is not the central emphasis of current policies and programs. Services in this area are also provided by NGOs such as Cancer Councils. Palliative care funding is critical, and is supported by the National Palliative Care Strategy and Program, which aim to improve palliative care through support for patients and families, access to appropriate medications, health workforce training, palliative care-specific research and quality improvements.

8.4.1.2 Cancer control workforce issues

Globally, health care workforce trends indicate current and future shortages across many disciplines. This leads to increasingly difficult access to preventive health programs and adequate health services. All forecasting relating to primary care health workers and specific medical specialties highlight geographic distribution as one of the major challenges now and moving forward.

The ageing population not only impacts the workforce by increasing demand, it also brings an ageing health workforce. In Australia, it has been recently acknowledged that the current arrangements in the health workforce are not sustainable and reform is required, leading to the inception of HWA. Patterns of retirement are changing, retention rates are decreasing, and there is a trend of feminisation in many health professions.

Integration and substitution between health care professions has been suggested as a solution to the health workforce shortage. Integration can improve the work between existing stakeholders by improving collaborations. The Australian Primary Care Collaborative was established through a federal government initiative to implement this idea for NCDs and has been successfully implemented. On the other hand, substitution requires the adequate and credentialed training of workers to facilitate the transfer of tasks and acceptance from all interested parties. For example, nurse practitioners have limited prescribing rights, can request pathology tests and can provide referrals in some cases, upon their successful completion of a Masters program.

Now that key issues and opportunities have been identified, the HWA aims to establish a national agreement on strategies to alleviate the foreseen problems and act
on these items through collaboration, consultation and leadership of health workforce reform.588, 593 The HWA released a National Cancer Workforce Strategic Framework, detailing recommended actions to overcome the current workforce issues in cancer-related health professions.448

8.4.1.3 Electronic linkage of patient information

Increasing the emphasis on multidisciplinary care and the involvement of multiple health care professionals in a cancer patient’s treatment requires the transfer of knowledge and information between all interested parties. The high volume of transactions that make up NCD management, and the time period over which it is conducted, support the use of more advanced information management systems.594 Health information management systems can include decision-making support tools for health professionals, information sources for patients and their carers, and electronic patient records and provider order entries.595, 596 In theory, using these systems can also allow health care professionals to spend more face-to-face time with patients; however, supporting evidence has not been found in practice.597 The most pertinent issue relating to cancer appears to be the electronic linkage of treatment records.

The electronic linkages of patient records can facilitate the large number of transitions through the system, but have been typically difficult to administer and maintain.596, 597 Electronic records can help identify adverse drug events, highlight medication errors, and track prescribed medications and prescribed dosage.595 Widespread adoption by physicians and other health professionals is difficult to achieve and maintain.596, 597 In Australia, linkage programs have been established to enable research into health services and assess the performance and safety of the health care system, including cancer care.598

In 2010, the Australian Government approved a personally controlled electronic health record system, eHealth.599 The eHealth system aims to improve information exchange by moving from paper-based to electronic keeping of clinical records.600 The National eHealth Transition Authority has been established to facilitate this change.599 Program development has been challenged by short timeframes and the overwhelming size of the undertaking.601 Currently, consumers can choose to enrol in the eHealth system, but it is purely on a voluntary basis.600

8.4.2 Discovery and advancement in prevention, diagnosis and treatment

The discovery and use of new cancer prevention drugs, diagnosis techniques and curative treatments affect incidence and mortality rates. The rise in incidence rates is largely reflective of improvements in diagnostic techniques and new screening practices that are becoming more diffused. It is important to identify advancements of these methods when interpreting cancer-related data. Modern discoveries in medicine and technology can greatly improve cancer control policies and actions. Treatment methods for cancer are constantly evolving; however, the therapeutic pathway for most cancer sites consistently include surgery, radiotherapy and chemotherapy. However, recently complementary and alternative therapies have been integrated into treatment options.602 Acupuncture, for example, is becoming more widely used as an adjuvant treatment for chemotherapy-induced nausea or vomiting.603

A significant area of development in treatment is in therapeutic vaccines. Work in immunotherapy, which aims to induce specific immune responses to cancer cells, is an important part of this line of research.604 In prostate cancer, for example, immunotherapy is one of the novel strategies being explored to treat recurring cases. There are a number of tumour-associated antigens that can be targeted at the specific tumour cells. One of the purported benefits associated with therapeutic vaccines in comparison to other treatment methods is their less toxic nature. There is also potential to use therapeutic vaccines in conjunction with other treatment methods, which can potentially improve the efficacy of the vaccine.604

Much of the emerging cancer control research is focused on cancer cells and altering their states through gene therapy and genomics. A subset of this stream is epigenetics, a line of research focused on early modifications in cancer cell’s deoxyribonucleic acid and genomic information.605, 606 Epigenomes differ from genomes in that they change with cell type and age.606 Understanding the components generating non-coding ribonucleic acids is essential to analysing the biology of the cancer cell and abnormalities or alterations found which can be reversible with chemicals.605, 606 Unlike other biomarkers, epigenetic biomarkers respond not only to an individual’s genetic composition but also their environmental exposure.606 Epigenomics could be used to define cancer subtypes and become indicators of patient responses to therapies or their outcomes.605
Diagnosis can also be aided by the use of microfluidic technology, a study of the control and manipulation of fluids. It can be used to analyse fluids in vitro and can be developed into a non-invasive diagnosis and treatment technique. Microfluidics can help understand the biology of the tumour, isolate tumour cells, detect and identify tumour cells, and provide high-throughput screening. The affordability of this technology creates a more cost-effective alternative to be explored. 

Metabolomics is the study of the chemical processes of molecules in a biological cell, and measures the output of biological pathways. It provides a snapshot of cellular activity in a normal or disruptive state. Research in metabolomics is focused on identifying still unknown causes of cancer, improving early diagnosis, or developing targeted drugs. Biomarkers can be more rapidly identified using metabolomics, and used for earlier diagnosis of cancer and as predictors of treatment responses. Cancer staging and tumour characterisation can also be improved using this method. By analysing the chemical processes of molecules, metabolomic analysis can measure the biochemical response to new drugs and their pathways to aid drug development.

Nanotechnology is now being explored in medicine as a way of improving cancer from prevention through to treatment. Nanodevices are being developed to improve detection of cancer at early stages, isolating its exact location, and delivering therapeutic drugs. The study of nanoparticles in cancer sites and the development of nanodrugs which can reduce the ability for the body’s defences to capture nanoparticles. Treating the nanoparticles can improve imaging in diagnosis and reduce side effects associated with traditional cancer therapies. Nanoparticle treatment can treat hard-to-reach cancerous growths and improve delivery of medication to allow more particles to access the tumour site. Several nanodrugs are successfully being used to treat cancer as targeted therapies. Nanoparticles have also been used in analysing volatile organic compounds in exhaled breath to detect the presence of cancer.

Although developments are being made, only a few treatments and discoveries have radically changed cancer prevention and care. Drug discovery is plagued by the often slow development period of cancers or identification in late, advanced stages of the disease. This makes trials and testing lengthy processes, which do not always conclusively illustrate the positive aspects of new treatments. Monitoring cancer incidence and mortality trends over time can help identify critical points in history where treatments or technology had a significant impact.

8.4.3 Cancer control implementation process and leadership

All of the elements described are part of a process of cancer control implementation. In Australia, this process is spread across a number of government agencies, industry partners, NGOs and other stakeholders. There are four key stages apparent in the current process, as depicted in Figure 8–2. The stages give an overview of how stakeholders and their actions are brought together.

Stage 1 is the design, trial and pilot phase. It is the innovative and conceptual period of an initiative that can be initiated by researchers, NGOs, governments, industry representatives or clinicians and their institutions. The motivation of these groups can vary greatly, and new initiatives can stem from emerging international or national evidence, pecuniary interests or observed need in the community. Pecuniary interests, in the case of industry, focus on the trialling of medications before market launch to prove their clinical benefit and financial viability. In the case of governments, pilot studies are essential to establish the cost and benefit to the health care system overall. The majority of action in this phase is focused on conceptual design of initiatives and rigorous clinical trials or pilot studies.

Especially in the case of cancer control, this stage generally occurs once, but is typically lengthy. For trials or pilots to show evidence of clinical significance that is cost effective and applicable to the real world, approximately 5–10 years must pass. Often findings from trials will be interpreted in conjunction with outcomes from additional trials in other research environments. In order to reach the trial phase, there must be a solid evidence base for the efficacy of an intervention. Pilot studies are generally used to understand the local application of the concept. Although governments are not always an active player in this stage, they are important stakeholders. If governments are not aware of the concept and the benefits of the trial or pilot, movement to Stage 2 will be more challenging. Often governments are involved in pilot studies, especially if they are national studies. Pilots can sometimes overlap with the proof of concept element of Stage 2.

Stage 2 builds on the previous phase and focuses on strategic planning, budgeting, legislative development, protocol and guideline development and proof of concept. The aim of Stage 2 is to integrate the concept into the existing systems, with practical application. Governments play an essential role in this phase of implementation. Approval processes and decisions, albeit being lengthy and usually a one-off occurrence, are influenced by changes in government and the overall health
Stage are required. In this part of the process, clinical experts and NGOs play a large role in advocacy by giving a voice to the consumer groups they represent. Prior to widespread implementation, protocols and guidelines by giving a voice to the consumer groups they represent.

Some initiatives require underpinning by legislative changes and make recommendations around practical implementation, such as credentialing of health professionals to provide a given service or accreditation programs for service provision centres.

Stage 3 focuses on the implementation of the activity and is a continuous process over the lifetime of the program. Application to the real world requires the involvement of all levels of government and clinicians or other providers. Already established examples of national screening programs illustrate the variety of implementation options available. The National Bowel Cancer Screening Program is administered nationally, with home kits sent directly to individuals in the target age groups. BreastScreen is provided through specialised centres and administered on a state/territory level. The National Cervical Cancer Screening Program is run through primary health care facilities and also administered on a state/territory level. Implementation can also involve Local Governments, which are established by the State or Territory Governments and are responsible for local community services, planning approvals for buildings and public spaces, and limited public health protection measures.

Stage 4 is the continuous monitoring and evaluation phase, which should feedback into any or all of the previous stages. This phase tracks and appraises the performance of activities and identifies the need for change to existing structures and processes. Generally the role of monitoring activities is conducted by government data-collection agencies, predominantly the role of the ABS and the AIHW for cancer control. Evaluations of activities are ideally conducted by independent researchers who can critical appraise performance and systems to make recommendations for improvement.

Small-scale projects can be implemented – moving through all four stages – at a local community level, largely through NGOs and Local Government. This involves direct lobbying to Local Governments by NGOs and community advocates for issues such as banning smoking in busy outdoor areas, including children’s playgrounds and alfresco dining areas on.

The new concept must work with the existing or future health agenda and be of benefit to a sufficient number of people to make it feasible. The proof of concept element establishes the commercial viability of the project from a government perspective as well as an individual perspective, if required. Input from health economists and public health experts is often required at this stage. In the case of specific medical treatment options, the Therapeutic Goods Administration is specifically involved in regulating medications that can be used in Australia. Additionally, the Pharmaceutical Benefits Administration is an independent body of experts that advises the government on which medications should be included on the PBS, hence reducing the cost to consumers and impacting the health budget. The Medical Service Advisory Committee advises the Health Minister on inclusions on the MBS.

Some initiatives require underpinning by legislative changes to effect change and require the involvement of multiple levels of government. Both federal and state tiers of government are involved in cancer control, and are lobbied by industry and consumer stakeholders. NGOs play a large role in advocacy by giving a voice to the consumer groups they represent. Prior to widespread implementation, protocols and guidelines are required. In this part of the process, clinical experts and independent researchers and institutions, and federal, state or territory governments are involved.
Local Government land. When the success of the program is proven on a small scale at a Local Government level, the concept can be integrated at a state/territory level or in other local areas following the four-stage process. Isolated incidents at Local Government levels illustrate potential resistance to national or state based legislations. In Sydney, this resistance was shown by Parramatta City Council when a previous smoking ban was recently rescinded in outdoor dining areas due to industry pressure. State legislation will be brought in from 2015 which will ban outdoor smoking across NSW, and in this instance the Local Government made the decision to allow smoking until 2015.611

As described in the individual stages, the leadership of cancer control implementation is spread across a number of stakeholders – depending on the stage of the process and the specific initiative. Engagement at government and clinician levels is most important as they can create the bottlenecks in the process. Communication is integral in moving the process from one stage to the next, and for the overall success of the process. Much of the communication to the public stems from the final two stages: relaying information about programs being implemented and how they are progressing. Data used to communicate the results of programs and initiatives are integral to their continued development.

8.5 Summary of cancer control policies, programs and emerging issues

Cancer control policy in Australia has evolved over the past few decades.54 Since the 1980s, cancer control has been incorporated into the national strategic direction, beginning with the inclusion of cancer as a National Health Priority Area in 1996.612 Additionally, there have been specific public health campaigns and cancer screening for three cancer types and to reduce modifiable risk factors. However, few are the cancer types that are given the majority of the attention in most publically funded prevention, screening and treatment initiatives. In 2005, the intergovernmental NSIF for cancer was released, outlining high-level policy priorities across the cancer control spectrum.444 All Australian Governments – federal, state and local – endorsed the NSIF; however, there was no implementation plan. A number of the NSIF initiatives have nonetheless been implemented over subsequent years.

Evaluations of past cancer control activities have shown varying levels of impact in their specific target areas. Often, they have been supported by public policy. More recently, a series of government agreements and strategies has been launched to further promote the preventive health agenda. As part of these agreements, as well as continuing activities from past initiatives, the Australian Government has made a substantial financial and resource contribution to programs relating to cancer control. Legislative action has not always been used to support systematic change as opposed to efforts to encourage individual change. Currently, the range of public health and preventive services in Australia are coordinated and administered by intra- and intergovernmental agencies.

Services that relate to cancer control include:

- Immunisation services and other communicable disease control
- Programs to reduce the use and harmful effects of tobacco and alcohol
- Prevention programs to reduce weight gain, and to promote physical activity and healthy eating choices
- Programs to promote sun protection
- Environmental monitoring and control, including management of harmful chemicals
- Screening programs for breast, cervical and colorectal cancer.

A number of recently formed national government agencies are predominantly responsible for cancer control initiatives, as well as the longstanding ABS, AIHW and NHMRC. The current capacity of the newer agencies to influence change is yet to be fully released. The plethora of cancer control activity requires the involvement of a number of government agencies and other stakeholders – including NGOs – to most effectively disseminate preventive health messages and provide cancer support programs.

The Australian healthcare system has limitations in treating the needs of patients with chronic illnesses, as it has historically focused more on acute care. The challenges of caring for an increased number of cancer patients at a time when population ageing will place other pressures on the health system will be significant. We can expect to see increases in the numbers of cancers related to obesity, with the high and increasing numbers of people being classified overweight and obese – as well as increases in cases of other prevalent diseases such as cardiovascular disease and diabetes. Furthermore, most population-based preventive interventions are targeted at people under the age of 75 years, where actions could prevent cancer and mortality benefit is likely to be greater.613
8 Cancer control policies, programs and emerging issues

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