Department of Health

health

Skin cancer prevention framework

2013–2017

State Government Victoria

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Foreword

Keeping Victorians as well as they can be is important for individuals, families and the community. It is also crucial for a strong economy and a healthy, productive workforce. Skin cancer is a significant burden not only on the Victorian community, but also nationally. Australia has the highest age-standardised incidence of melanoma in the world (Australian Institute of Health and Welfare 2010b). It is the most common form of cancer, with two in three Australians being diagnosed with the disease before the age of 70 (Stiller 2007). Of all cancers, skin cancer represents one of the most significant cost burdens on our health system and is one of the most preventable cancers.

Victoria is a leader in skin cancer prevention, achieved through world class research, the innovative and internationally recognised SunSmart program, and policy and legislation reform.

However, current skin cancer prevention activity in Victoria is fragmented and there has never been an overarching policy to guide effective, productive and sustainable activity. Better health outcomes can be achieved if a more systematic and comprehensive approach to skin cancer prevention is taken.

Responding to this complex situation goes beyond the capacity of any one organisation. It demands whole-of-government and whole-of-sector approaches.

This framework outlines how the Victorian Government will coordinate an effective and sustainable approach for government and the not-for-profit and private sectors to skin cancer prevention over the next five years.

It is recognised within this framework that a balance is required between the risks of skin cancer from too much sun exposure and the benefits of spending time outdoors keeping physically active as part of a healthy lifestyle.

This framework is guided by and aligned with two key government policy frameworks. The framework aligns with several of the outcomes articulated in the *Victorian Health Priorities Framework 2012–2022* (Department of Health 2011a) and its approach to long-term planning and development priorities for Victoria's health system. The *Victorian Public Health and Wellbeing Plan 2011–2015* (Department of Health 2011b) states that the government will explore a comprehensive approach to skin cancer prevention, including evidence-based approaches for children, adolescents and young adults and other priority populations. This framework is working towards achieving this.

Consultation with the government, the health sector, private sector and wider community has been essential in the development of this framework. I wish to thank all those community members, organisations and health professionals who contributed to the preparation of this document. Their advice and input shaped this framework and will guide its implementation.

As the Minister for Health, I look forward to working together with government, the not-for-profit and private sectors in improving Victoria's efforts in preventing the burden of skin cancer on our community.

The Hon. David Davis MP
Minister for Health

Contents

Overview

The strategic directions outlined in this framework will guide an effective and sustainable approach for skin cancer prevention over the next five years. This framework takes a whole-of-government, whole-of-system approach.

Consultation has been at the centre of the framework's development. It was of great importance to the Victorian Government to consult widely with the health sector and the broader community in the development of this framework. In 2009, the Department of Health commissioned an environmental scan that analysed ultraviolet radiation (UVR) protection activity in Victoria. The scan focused on early childhood, primary and secondary education settings; workplace settings; adolescents and young adults; solaria; the built and natural environments; health promotion and public health campaigns; and vitamin D. Within each of these settings the key stakeholders were listed, scoped work was documented and analysed, and challenges and opportunities were discussed. The report from this environmental scan was presented as a background paper to guide and inform the development of the framework. Two workshops were held in June 2010 and June 2011 with key partners and stakeholders. Alongside these workshops, the Department of Health conducted a number of individual consultation meetings and interviews. A public consultation on a draft framework was conducted between 24 July and 30 September 2012 and a total of 211 written submissions were received from organisations, individuals and businesses. These submissions were essential in refining this framework and ensuring it is responsive to the needs of Victorians today.

The actions outlined in this framework have been informed by evidence and through extensive consultation with the Victorian health sector and community. Overall, this framework's goal is to reduce the incidence of, and mortality from, skin cancer in Victoria. This is a long-term goal that will take many years to achieve. This framework establishes ways the government, in partnership with the health sector, private sector and local communities, will approach this task over the next five years.

The framework has a strong focus on protecting young people. Childhood and adolescence are critical periods during which exposure to UVR is more likely to contribute to skin cancer in later life (Stiller 2007). While reducing over-exposure to the sun will be effective in reducing skin cancer risk at any age, instilling good sun protective habits at an early age and reducing childhood over-exposure remains a priority.

This framework outlines a number of strategies to protect young people from harmful over-exposure to UVR, focusing on the settings where they live, learn, work and play, including shade development, policy and improving sun protection knowledge, attitudes and behaviours.

It has been identified throughout the development of this framework that the use of sunbeds is continuing to put young Victorians at risk. The risk of cutaneous melanoma increases by 87 per cent when the use of tanning devices starts before the age of 35 (Boniol et al. 2012). One in six melanomas in Australians aged 18 to 29 years could be prevented if solaria were closed (Cust et al. 2011). With the increasing amount of evidence that sunbeds are dangerous and putting young lives at risk, including a letter signed by 161 dermatologists, cancer specialists and clinicians, this framework outlines the government's plan to ban commercial solaria in Victoria effective from 31 December 2014. It also outlines the government's intention to seek to work with the Commonwealth and other jurisdictions to investigate the potential options for a coordinated national approach on solaria, including consideration of a ban on the importation and manufacturing of sunbeds.

The framework also addresses the need to balance the risks of skin cancer from too much sun exposure with maintaining adequate vitamin D levels. The sun's UVR is both a major cause of skin cancer and the best natural source of vitamin D. The Victorian Health Monitor found that one in 10 Victorian adults had a moderate to severe Vitamin D deficiency, three in 10 adults had a mild deficiency and six in 10 had optimal or above optimal Vitamin D levels (Department of Health 2012). Vitamin D is an important consideration when implementing any skin cancer prevention policy or activity in Victoria and will be considered for each of the priorities outlined in the framework.

This framework is structured in four sections. The overall structure of the framework is provided in Figure 1.

Section 1 sets the background for the framework. It outlines the case for change, including the significant burden of skin cancer on the Victorian community, the cost to the health system in treating skin cancer and the cost-effectiveness of preventing it. It discusses the importance of achieving a balance between the risks of skin cancer from too much sun exposure with maintaining adequate vitamin D levels. It also outlines the policy, legislative and regulatory context in which this framework sits.

Section 2 identifies the scope of the framework, the target groups within the broader population, the potential partners and key stakeholders who will work together in delivering this framework and the settings in which we will do it.

Section 3 outlines the strategic directions. These strategic directions respond to the challenges in working to reduce skin cancer incidence and mortality in Victoria. The priorities for 2013–17 are:

- Promote the importance of having appropriate and good quality shade in public places where the community spends time outdoors.
- Promote best practice in sun protection policy in schools, sporting clubs, public spaces and workplaces.
- Continue to support programs to maintain sun protection in early childhood services and primary schools.
- Review current regulations and guidelines for shade against current evidence for appropriate UVR protection.
- Ban commercial tanning units in Victoria effective from 31 December 2014 in line with NSW and SA.
- Work with other jurisdictions to investigate the potential options for a coordinated national approach on solaria.
- Work with target groups to improve understanding of risk factors for skin cancer, ways to protect themselves and their children and detect skin cancer early.
- Shift social norms/attitudes to more accurately reflect the risks of UVR exposure.
- Strengthen Victoria's skilled workforce to better recognise, treat and refer skin cancers across the healthcare continuum.
- Promote appropriate and high-quality surveillance and monitoring options for those individuals at most risk.
- Advocate to the Commonwealth Government to review funding models for early detection of skin cancer.
- Promote improved quality and availability of detection, surveillance and incidence data for skin cancer.
- Establish an agreed policy research agenda for skin cancer prevention between the State Government, Commonwealth and Victorian research institutions.

Section 4 outlines governance and reporting requirements to guide and monitor the framework.

Figure 1: Structural outline of the Skin Cancer Prevention Framework 2013–2017

1. Background

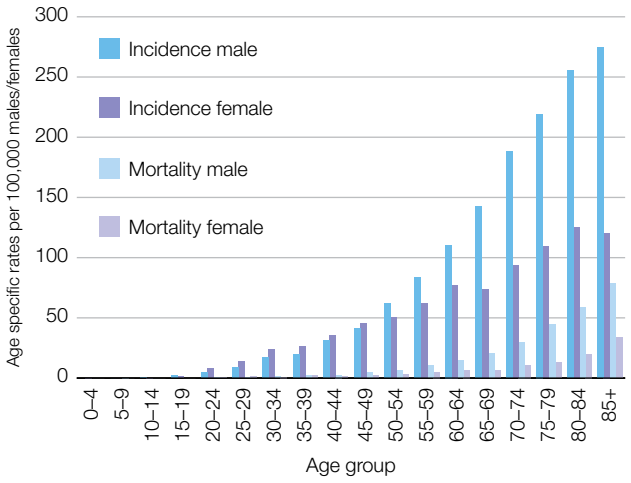
Burden of disease

Skin cancer is a significant burden of disease on the Victorian community. The main types of skin cancer are basal cell carcinoma (67 per cent of skin cancers), squamous cell carcinoma (31 per cent) and melanoma (2 per cent) (Cancer Council Victoria 2007). Basal cell and squamous cell carcinomas are often grouped together and called 'common' or 'non-melanoma' skin cancers.

Cases of non-melanoma skin cancers are not routinely reported to cancer registries, however it is estimated that there are around 40,000 new diagnoses in Victoria each year (Cancer Council Victoria 2011). Melanoma is the least common form of skin cancer, but the most dangerous. In 2010 in Victoria, 2,256 new cases of melanoma were diagnosed and 297 people died from the disease (Cancer Council Victoria 2011). In Victoria, melanoma is the second most common cancer in women and third most common in men aged 15–24 with a total of 19 people in this age range diagnosed in 2010 (Cancer Council Victoria 2011).

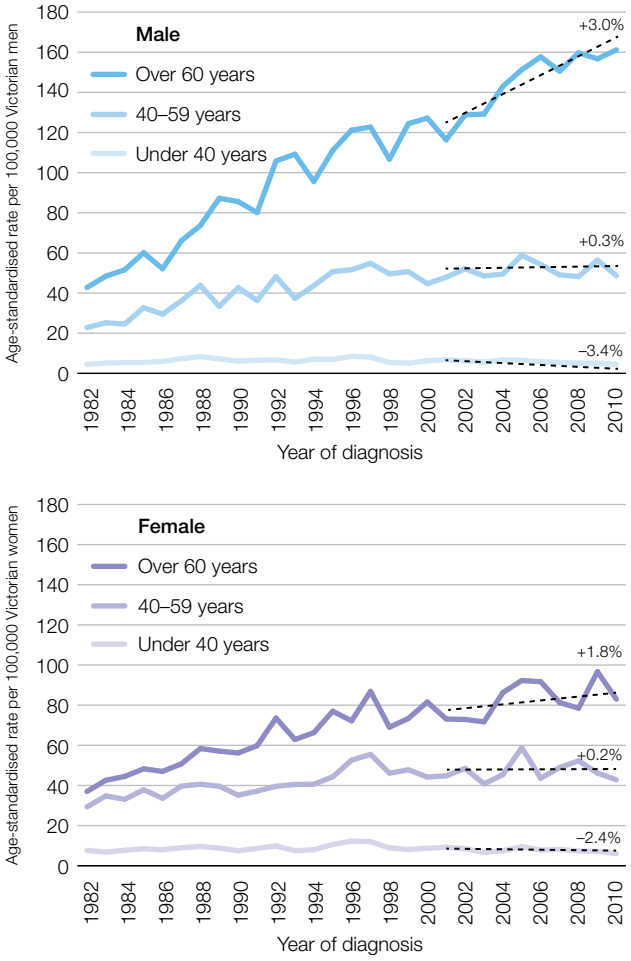
There is a progressively increasing gap in the incidence and mortality of melanoma between males and females in Victoria from the age of 50 years and onwards, as Figure 2 demonstrates.

Figure 2: Age-specific melanoma rates in Victoria (Victorian Cancer Registry 2011)



Melanoma incidence in Victoria continues to rise but rates of increase have slowed since the early to mid-1990s and fallen in some age groups. There is now a slower rate of increase among those aged 40–60, and a slight decline in incidence rates in those under 40 (Victorian Cancer Registry 2011). These falling rates in younger age groups are consistent with the introduction of skin cancer prevention measures such as the SunSmart program in Victoria since the early 1980s (Figure 3).

Figure 3: Melanoma rate per 100,000 persons 1982–2010 (Victorian Cancer Registry 2011)



The cost of treating skin cancer

Of all cancers, skin cancer is one of the most expensive burdens on our health system and one of the most preventable. The majority of the cost to the health system is borne by the Commonwealth through the Medicare Benefits Schedule (MBS), with Australian general practitioners having almost one million patient encounters annually for skin cancer (Australian Institute of Health and Welfare & Australasian Association of Cancer Registries 2004) (Australian Institute of Health and Welfare 2008). A study conducted in 2012 showed that in 2010, the total MBS benefit for non-melanoma skin cancer treatments was $93.5 million and the total treatment cost to government, including costs related to admitted patients, out of hospital medical claims, pharmaceuticals requiring a prescription, pathology testing and consultations with general practitioners and specialists was $511 million (Fransen et al. 2012). Recent data for melanoma is not available, however in 2005 it was estimated the annual cost to the health system was more than $30 million (Australian Institute of Health and Welfare 2005).

The cost-effectiveness of skin cancer prevention programs

The need for efficacious and cost-effective preventive health intervention has been reinforced by the recent University of Queensland and Deakin University Assessing Cost-Effectiveness (ACE) study, supported by the Victorian Health Promotion Foundation (VicHealth). This study evaluated the cost-effectiveness of 150 preventive health interventions, including skin cancer prevention programs; specifically the SunSmart program.

The report identified the SunSmart program as one of a handful of cost-effective interventions for the future that would have a significant impact on Australia's health. The cost-effectiveness was modelled based on the reduction in the increase in skin cancer cases seen in Victoria over the life of the SunSmart program as compared to other states with lower levels of investment in skin cancer prevention programs. This assumes that the extra investment in SunSmart activities in Victoria was responsible (Vos T et al. 2010).

Vitamin D

The sun's UVR is both a major cause of skin cancer and the best natural source of vitamin D. Therefore, it is important to balance the risks of skin cancer from too much sun exposure with maintaining adequate vitamin D levels.

Most people get enough vitamin D through exposure to sunlight during normal day-to-day outdoor activities. However, some people have very low levels of daily sun exposure, which can lead to low vitamin D and, in some cases, longer term deficiency. Those at high risk of deficiency include people with naturally very dark skin, people with little or no sun exposure (including older adults in residential care, those who cover their skin for religious and cultural reasons) and breast-fed babies whose mothers have low vitamin D levels.

The Victorian Health Monitor found that one in 10 Victorian adults had a moderate to severe Vitamin D deficiency, three in 10 adults had a mild deficiency and six in 10 had optimal or above optimal Vitamin D levels (Department of Health 2012). A significant association at the population level between vitamin D deficiency and skin type were also noted (Department of Health 2012).

Low vitamin D and vitamin D deficiency may have no obvious symptoms but, without treatment, can have significant health effects. There is good evidence that low vitamin D and vitamin D deficiency can increase a person's risk of musculoskeletal conditions and contribute to osteoporosis. Vitamin D deficiency has recently been linked to various types of cancers (particularly colon cancer), heart disease, stroke, altered immunity and autoimmune diseases; however, more research is required to confirm this link (International Agency for Research on Cancer 2008).

Vitamin D is an important consideration when implementing any skin cancer prevention policy or activity in Victoria and will be considered for each of the priorities outlined in the framework, particularly in:

- construction of shade
- social marketing targeted to the general public
- sun protection information and education provided for the health sector workforce
- policy development for schools, workplaces and sporting clubs
- research.

Policy context

This framework recognises a number of important developments that impact on skin cancer prevention and the overall prevention effort both at state and national levels.

The Victorian Health Priorities Framework 2012–2022

The Health Priorities Framework sets out the government's aspiration for the future of Victoria's healthcare system (Department of Health 2011a). It is part of a suite of documents including the *Metropolitan Health Plan 2012* (Department of Health 2011a) and the *Rural and Regional Health Plan* (Department of Health 2011c).

A major goal of this skin cancer prevention framework is to contribute to the aims, objectives and outcomes of the Health Priorities Framework, which include improving every Victorian's health status and health experiences and delivering a system that is responsive to people's needs. The intended outcomes of the Health Priorities Framework include that people are as healthy as they can be (optimal health status) and are managing their own health better.

Victorian Public Health and Wellbeing Plan 2011–2015

The *Victorian Public Health and Wellbeing Plan* (Department of Health 2011b) was developed to meet the requirement under the *Public Health and Wellbeing Act 2008* to develop a plan to identify public health priorities for the state every four years. The plan identifies the health and wellbeing needs of Victorians and establishes objectives and policy priorities for the promotion, protection and delivery of public health in Victoria.

The plan has five platforms:

- Strengthening the prevention system – by strengthening governance and leadership, data, financing and resource allocation, partnerships and workforce development.
- Priority settings for action and engagement – includes local communities and environments, workplaces, early childhood and education settings and health services.
- Continuing to protect the health of Victorians – through a number of interventions, including communication, disease prevention and control, immunisation, environmental health, food safety and incident and emergency response.
- Keeping people well – through a number of interventions, including healthy eating, physical activity, tobacco control, oral health, alcohol and other drug use, sexual and reproductive health promotion, mental health promotion, injury prevention and skin cancer prevention.
- Strengthening preventative healthcare – by strengthening cancer screening, newborn screening, early detection and early intervention.

Skin cancer prevention is highlighted as a priority issue for promoting the health of Victorians within the plan. The plan notes that the Victorian Government will continue to support VicHealth activity that aims to reduce harm from UVR exposure and provides funding for SunSmart initiatives delivered by Cancer Council Victoria. The plan also articulates that the government will explore a comprehensive approach to skin cancer prevention, including evidence-based approaches for children, adolescents and young adults and other priority populations. The development of this framework is working towards achieving this.

Vitamin D and the Built Environment 2009

Vitamin D and the Built Environment (Department of Human Services 2009) is a guideline for planners, engineers, architects and policy makers in local and state government. It focuses on how the built environment can enable safe sun exposure for the general community and groups of people requiring special consideration to help prevent vitamin D deficiency.

As vitamin D is a key consideration within all elements of the skin cancer prevention framework, this document is an important consideration when planning and implementing shade priorities.

National context

A number of recent national developments have important implications for the prevention effort in Victoria. These include the Council of Australian Governments (COAG) health report agenda; the commencement of the rollout of Medicare Locals; and the establishment of the Australian National Prevention Health Agency, which commenced operations in January 2011.

The Australian Health Ministers Advisory Council has endorsed the Cancer Council Australia and the Australasian College of Dermatologists position statement, which does not endorse population screening of skin cancer (Cancer Council Australia 2007).

Legislative and regulatory context

Legislation has been a key tool for achieving improvements in skin cancer prevention in Victoria. Many Acts and regulations contribute to the prevention of skin cancer, including, but not limited to, the following Acts and the regulations made under them:

- *Public Health and Wellbeing Act 2008*
- *Cancer Act 1958*
- *Radiation Act 2005*
- *Victorian Occupational Health and Safety Act 2004*
- *Planning and Environment Act 1987*

This framework outlines a plan to ban commercial solaria in Victoria effective from 31 December 2014. This ban will be enacted through amendments to the *Radiation Act 2005,* in line with actions outlined in section 3, Solaria regulation and its contribution to UVR protection.

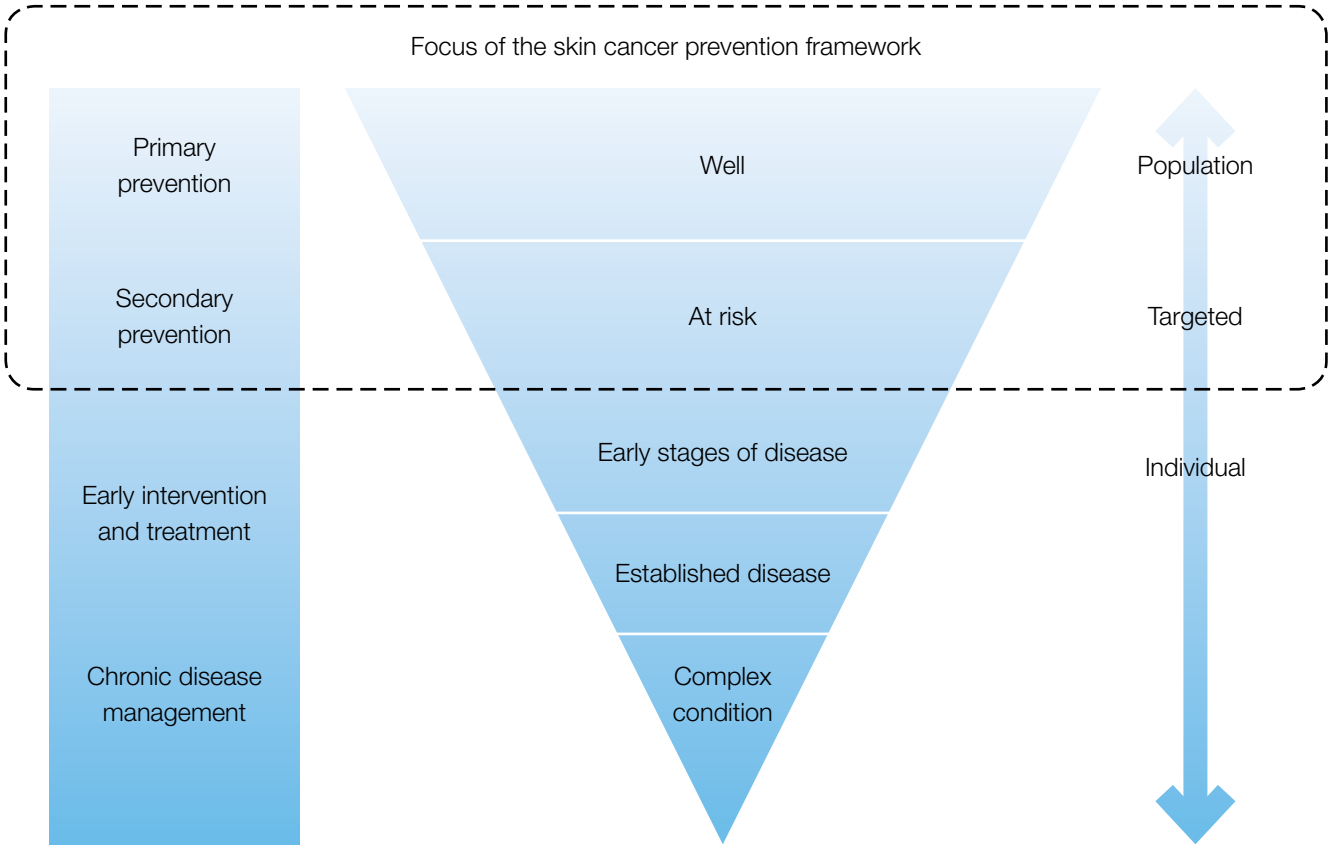
Legislation establishes frameworks designed to control well-known risks to health and to authorise or mandate specific population-wide interventions to protection and promote health. However, not all legislation of significance to skin cancer prevention sits within the health portfolio. Many of these Acts are administered by other portfolios and play an important and complementary role in protecting against harmful UVR exposure across a variety of settings. This demonstrates the importance of working across the whole of government.

2. Scope

This framework is designed to reflect the breadth of work undertaken in skin cancer prevention within Victoria. It takes a cross-sector, cross-government perspective and its remit extends beyond the boundaries of the healthcare system. The framework's major emphasis is on the primary and secondary prevention of skin cancer; recognising that the link between primary and secondary prevention and early intervention, treatment and chronic disease management is important to achieve the goal of reducing skin cancer morbidity and mortality in Victoria.

Figure 4 illustrates the focus of this plan in the context of the continuum of care. Definitions of primary and secondary prevention are provided below.

Figure 4: Focus of the skin cancer prevention framework



Levels of prevention

Primary prevention refers to activities that aim to prevent health problems in whole populations before they occur (reduce incidence), for example solaria regulation, provision of shade, social marketing campaigns.

Secondary prevention refers to population-based activities that aim to identify precursors to, and early signs of, illness when treatment can be most effective and supported by clear referral pathways, using screening programs to test healthy but high-risk populations.

Early intervention refers to efforts that are aimed at responding to early signs of disease and preventing worsening of the disease so that people stay as well as possible, for example ensuring those who have been diagnosed with a melanoma are accessing appropriate monitoring and surveillance services.

There is increasing recognition that a system is needed that delivers responsive, integrated and coordinated skin cancer prevention (based on the best available evidence) at local, regional and statewide levels, across a range of settings such as schools, workplaces and communities.

The skin cancer prevention system is complex, with a number of government and non-government organisations (NGOs) delivering skin cancer prevention programs and services in Victoria. These organisations and agencies vary in their approaches and operate in a fragmented way.

The government and its partner agencies have recognised that better health outcomes can be achieved if a more systematic and comprehensive approach to skin cancer prevention is taken in Victoria.

Partnership opportunities

Skin cancer prevention efforts across Victoria are delivered by a wide range of organisations operating at Commonwealth, state, regional and local levels. Strong partnerships will be integral to the success of this framework. The main current and potential participants in the sector are outlined below.

Commonwealth government

Many federal government departments and agencies influence skin cancer prevention and protection from harmful UVR exposure in Victoria.

- The Department of Health and Ageing deals in matters relating to skin cancer prevention, including: public health, medical research, health promotion and disease prevention, e-health, primary healthcare, health benefits schemes and health workforce capacity.
- The Australian Radiation Protection and Nuclear Safety Agency, as part of the Health and Ageing Portfolio, is a federal government agency charged with responsibility for protecting people and the environment from the harmful effects of ionising and non-ionising radiation, including UVR.
- SafeWork Australia is a statutory authority with the primary responsibility of improving work health and safety and workers' compensation arrangements across Australia. SafeWork *Australia's Australian Work Health and Safety Strategy 2012–2022* identifies cancer (including skin cancer) as a priority work-related disorder.

State government

Many state government departments and agencies work to influence skin cancer prevention and protection from harmful UVR exposure. The success of this framework requires collaboration across government departments.

- The Department of Health has lead responsibility for many public health functions in relation to skin cancer prevention, including radiation safety, environmental risk assessment, and providing funds and management of skin cancer prevention programs and projects through agencies such as VicHealth and general practice.
- The Department of Education and Early Childhood Development ensures a high-quality and coherent learning and development system from birth through to adulthood to build the capability of every Victorian. Schools and early childhood services can play a significant role in creating safe and healthy environments for children and adolescents and changing behaviour through role modelling.
- The Department of Planning and Community Development supports communities to become more liveable. Within the department, Sport and Recreation Victoria (SRV) aims to increase Victorians' participation in sport and recreation and promotes a safe and inclusive sporting environment for all. SRV supports the Victorian branch of Sports Medicine Australia to promote sports safety and injury prevention resources through the Victorian Smartplay Program. This has included the development and promotion of a heat and UV guide for sport in partnership with the SunSmart program.
- The Department of Sustainability and Environment leads Victoria's efforts to manage resources and catchments, climate change, bushfires, parks and other public land, forest biodiversity and ecosystem conservation. The department has a role to play in promoting appropriate UVR protection and sun safe messages in parks and recreational spaces.
- WorkSafe Victoria (a statutory body) responsibilities include helping to avoid workplace injuries and enforcing Victoria's occupational health and safety laws. At the end of 2003, WorkSafe began a campaign in the construction industry to raise awareness of the risk to health from over-exposure to UVR and the need for sun protection measures in the peak exposure period.

- The Growth Areas Authority is an independent statutory body with a broad, facilitative role to help create greater certainty, faster decisions and better coordination for all parties involved in planning and development of Melbourne's growth areas.

Local government

Victorian local governments provide many services to the community and are responsible for a range of planning activities, management of the environment and public spaces, public and social infrastructure and public services within their jurisdiction. Councils make a significant contribution to skin cancer prevention through avenues including the provision of shade in public recreational places and management of local sporting grounds and swimming pools.

Local governments are mandated to prepare a Municipal Health and Wellbeing Plan (MHWP) every four years. MHWPs are guided by the *Public Health and Wellbeing Plan 2011–2015* (Department of Health 2011a), which articulates skin cancer prevention as an important way to keep people well. Local governments may also produce other strategic documents that can co-benefit skin cancer prevention strategies, such as heatwave plans, specific shade plans and public open space plans.

The Municipal Association of Victoria (MAV) is the legislated peak body for 79 councils. The MAV's role involves advocating for local government interests, building the capacity of councils, facilitating effective networks, initiating policy development and advice, supporting councillors and promoting the role of local government.

Victoria's SunSmart program

The SunSmart program is based on a comprehensive health promotion approach, incorporating public education and advocacy. Its aim is to effect changes in knowledge, attitudes and environments, and so improve sun protection behaviours to ultimately reduce over-exposure to UVR (Montague et al. 2001).

The SunSmart program, jointly funded by Cancer Council Victoria and VicHealth since 1988, leads the world in UV protection, with Cancer Council Victoria appointed the World Health Organization Collaborative Centre for Ultraviolet Radiation in 2004.

The SunSmart program aims to:

- prevent and minimise the adverse effects of UVR through effective skin cancer prevention initiatives
- promote and improve awareness of a balanced approach to UVR exposure and links with vitamin D.

The key to SunSmart's success is its integrated approach; implementing a combination of interventions that affect individual behaviours balanced with advocacy for broader environmental and legislative change. By its nature, SunSmart is a mass-delivered program, but it also has considerable depth and reach into communities, workplaces, early childcare and schools, and can readily accommodate initiatives arising in particular communities where needs may vary.

The program is underpinned by a strong research and evaluation base and supported by the Cancer Council Victoria's Centre for Behavioural Research in Cancer, Cancer Epidemiological Centre and Cancer Information and Support Service.

Health sector

As well as government departments with responsibility for health service functions, the health sector includes private sector providers, community agencies, government funded agencies and NGOs.

The Victorian Government provides funding for VicHealth, a statutory authority with an independent chair and board of governance, which works both collaboratively with, and independently of, the government to promote good health across the population. The organisation has five priorities for focus – one of which is reducing harm from UVR exposure. VicHealth implements a number of health promoting programs and projects within the key settings that relate to the framework. VicHealth has supported the SunSmart program since its inception in 1988, through

the provision of funding, strategic guidance, additional support for mass media and program-related research and evaluation, and encourages the evidence-based approach taken by the SunSmart program.

A number of health services in Victoria specialise in skin cancer, including the Victorian Melanoma Service at the Alfred Hospital, the Peter MacCallum Cancer Centre and St Vincent's Hospital.

Victoria has a strong and diverse NGO health sector that works across skin cancer prevention, including the Skin and Cancer Foundation Inc., Emily Tapp Foundation and the Clare Oliver Melanoma Fund.

Primary care sector

The primary care sector is integral to skin cancer prevention. The majority of skin cancers are detected within general practice, with Australian general practitioners having almost one million patient encounters annually for skin cancer (Australian Institute of Health and Welfare 2008). A number of organisations represent general practitioners in Victoria, including General Practice Victoria and the Royal Australian College of General Practitioners. The Department of Health will provide the primary care sector with skin cancer prevention materials and copies of this framework.

Private sector

Both the private health and non-health sectors make an important contribution to skin cancer prevention. Private healthcare includes specialists, such as dermatologists, who detect, treat and conduct monitoring and surveillance for skin cancer. Allied health professionals (such as physiotherapists, osteopaths, massage therapists) can also play an important role in recognising unusual skin lesions and referring patients on to a general practitioner for examination and follow up if required.

Victorian businesses also play a key role. Providing safe environments from harmful UVR exposure and encouraging sun protective behaviours for workers would contribute to a reduction in the number of skin cancers attributed to UVR exposure in the workplace.

Planners and architects responsible for new buildings and developments can also ensure that Victoria's built environment helps to protect the community from harmful UVR exposure.

Research community

Effective skin cancer prevention requires comprehensive data collection through monitoring and evaluation. The Department of Health manages the Victorian Population Health Survey and the Victorian Health Monitor; the Department of Education and Early Childhood Development manages the Victorian Child and Adolescent Monitoring System; and the Department of Planning and Community Development outlines Victoria's household projections. All of these provide important statewide data and trends.

Cancer Council Victoria is a leader in skin cancer research in Victoria and manages the Victorian Cancer Registry, which has collected details of all cancers diagnosed in Victoria since 1982. The registry is an important source of data for planning, monitoring and evaluating skin cancer prevention activity across the state.

Cancer Council Victoria's Centre for Behavioural Research in Cancer focuses on behavioural aspects of skin cancer control and discovering how people can be encouraged to change unhealthy behaviours. The centre conducted the Victorian Sun Survey and Sun Observation Survey, which have monitored population change in weekend sun protection attitudes and behaviours since the late 1980s. These studies also provide an assessment of the population-based effects of the SunSmart program and other media and policy changes on sun protection behaviour.

Other Victorian, interstate and national research institutions and universities have expertise in research, skin cancer prevention, early detection and vitamin D, providing opportunities for increased national and state partnerships and coordination.

Settings

The places in which Victorians live, learn, work and play have an important role in influencing individuals' ability to reduce risk factors associated with skin cancer. A major focus of the framework is a coordinated and strategic approach to addressing skin cancer prevention across priority settings, including schools, recreation and community settings, workplaces, primary care sectors and local communities.

Schools

Primary and secondary schools play a critical role in helping to reduce UVR exposure and future skin cancer rates because:

- childhood and adolescence are critical periods during which sun exposure is more likely to contribute to skin cancer in later life
- almost all Victorian children attend school during hours when UVR levels are high
- schools can play a significant role in creating safe environments and changing behaviour through role modelling.

Great success in UVR protection has been achieved in early childhood services and in primary schools where sun protection measures have been undertaken effectively. Such measures are less readily applied and enforced in secondary schools where there are unique barriers.

Recreation and community settings

Spending time outdoors and keeping physically active is important and brings many benefits for health and wellbeing. Many Victorians participate in organised sport and other community groups, use public recreational facilities such as swimming pools, and spend time in parks, open spaces, beaches and on roads and footpaths. These are all key settings where UVR protection is important and where key messages about UVR protection, early detection and vitamin D can be disseminated. UVR protection is particularly important in sport and recreation because:

- most sport and recreation takes place outdoors and can involve long periods of exposure to UVR, often between September and April when UVR reaches high to extreme levels in Victoria
- children and young people are often involved in outdoor activities
- all sport and recreation administrators (volunteer and professional) seek to provide a safe and healthy environment for everyone involved in their activities.

Workplaces

Outdoor workers are at a higher than average risk of skin cancer and other health issues related to excess UVR due to their exposure to high levels of direct sunlight over long periods of time (Armstrong 2004).

Nearly three million Victorians are in full-time or part-time work (Australian Bureau of Statistics 2011). With employees spending about one-third of their total hours at work, the workplace provides significant opportunities for preventing skin cancer.

Primary care sector

Skin cancers are detected and treated in the primary care sector, in fact the majority of skin cancers are detected within general practice (Australian Institute of Health and Welfare 2008). The primary care sector is also a setting in which information about skin cancer prevention and vitamin D can be disseminated.

Target groups

It is important that resources and information are oriented towards those most vulnerable and at highest risk of skin cancer in the settings where they live, learn, work and play. Given what we know about the incidence of skin cancer and the behaviours and attitudes of certain groups in the community, the following have been identified as target groups for prevention action.

Children

Childhood and adolescence are critical periods during which exposure to UVR is more likely to contribute to skin cancer in later life (Stiller 2007). Research indicates that sun exposure in the first 10 years of life determines, to a substantial degree, the lifetime potential for skin cancer, while sun exposure in later life determines the extent to which this potential is realised (Armstrong 2004). While reducing over-exposure to the sun will be effective in reducing skin cancer risk at any age, instilling good sun protective habits at an early age and reducing childhood over-exposure remains a priority.

Children spend time in a variety of settings where they may be exposed to UVR, including early childhood services, schools and community and recreational areas, such as swimming pools, parks and playgrounds.

Adolescents and young people

Adolescents spend more time in the sun than any other group and, as a consequence, suffer higher rates of sunburn (Dobbinson, S.J. et al. 2008). While they have been shown to have a high level of knowledge of the dangers of sun exposure, adolescents and young adults are more likely to prefer a tan and to adopt most sun protection behaviours less frequently than adults. Of all age groups, young people seem most attuned to social norms about health, beauty and fashion.

Some positive results have been shown in focusing on environmental strategies for this age group, specifically the provision of shade.

Men aged 50+

Nationally, 83 per cent of melanoma diagnoses occur in people aged 45 years and over, with 55 per cent of melanoma diagnosed in Australians aged 60 years or over, with a ratio of 2:1 males to females (Australian Institute of Health and Welfare 2010a). Similarly, non-melanoma skin cancer occurs twice as frequently in men (Australian Institute of Health and Welfare 2008). From 50 years of age and onwards, melanoma incidence and mortality becomes progressively higher in men than in women.

Melanoma rates are starting to show some decline in men and women aged under 40, however incidence is still increasing in older age groups (Victorian Cancer Registry 2011). Across Australia, male deaths from melanoma increased by 16 per cent between 1997 and 2007 (Australian Institute of Health and Welfare 2010a; b).

In Victoria, research suggests that men living in rural areas are at most risk, with melanoma incidence rates one-third higher than for men in urban areas (Victorian Cancer Registry 2011).

Potential explanations for the gender disparity in incidence and mortality include differences in sun exposure and protection behaviours and/or in early detection awareness and behaviours; however, this remains a topic for further research. In the meantime, it is known that every additional decade of high sun exposure or solarium use further increases the risk of melanoma (Kricker et al. 2007) (Veierod et al. 2010), so improved sun protection should be encouraged across all age groups.

3. Strategic directions

This section sets out strategic directions and priorities to respond to the challenges in working to reduce skin cancer incidence and mortality over the next five years. These strategic directions have drawn on evidence and knowledge from a range of expert sources and are oriented towards those most vulnerable and at risk of skin cancer. They are discussed under the key areas of:

- supportive environments
- knowledge, attitudes and behaviours
- early detection
- research and evaluation.

Under each key area is a list of opportunities for progress. These opportunities have been identified as ways government, in partnership with the health sector, could reduce the burden of skin cancer on the Victorian community.

Supportive environments for UVR protection

Strategic directions

- Promote the importance of having appropriate and good quality shade in public places where the community spends time outdoors.
- Promote best practice in sun protection policy in schools, sporting clubs, public spaces and workplaces.
- Continue to support programs to maintain sun protection in early childhood services and primary schools.
- Review current regulations and guidelines for shade against current evidence for appropriate UVR protection.
- Ban commercial tanning units in Victoria effective from 31 December 2014 in line with NSW and SA.
- Work with other jurisdictions to investigate the potential options for a coordinated national approach on solaria.

Outdoor activity, both recreational and work related, increases a person's risk of over-exposure to UVR. It is important to balance the risks of skin cancer from over-exposure to UVR and spending time outdoors keeping physically active as part of a healthy lifestyle. It is also important to balance the risks of skin cancer from too much sun exposure with maintaining adequate vitamin D levels.

Shade alone as a sun protection measure can reduce overall exposure to UVR by about 75 per cent (Parsons et al. 1998). Evidence suggests that if shade is made available, people will use it (Dobbinson et al. 2009). The most effective way to protect Victorians from harmful UVR exposure when spending time outdoors is through the provision of well planned and designed spaces that provide access to UVR protective shade.

Disparities in shade provision

Research suggests that access to shade is less than optimal and that there is a socioeconomic differential. Public open spaces in lower socioeconomic status (SES) areas are less likely to have shade than those in higher SES areas. Adults and adolescents living in higher SES areas are less likely to report sunburn than those living in lower SES areas. In 2007, research showed that 45 per cent of Victorian adults believed adequate shade was hard to find at their local park or playgroup and that adequate shade was even more difficult to find at sports grounds, with rural and regional residents finding it harder than those in metropolitan areas (SunSmart 2008). When considering improving shade provision, priority should be given to low SES and rural and regional areas.

Built and natural shade

Shade can be created by both the built environment, via positioning of buildings and shade structures, and the natural environment, via plants and trees. An appropriate balance between natural shade, built shade, tree risk and landscape amenity should be considered when planning shade. Trees are particularly important when assessing outdoor sporting facilities, roads, footpaths and other public open spaces.

Over the last ten years there has been growth in the shade development industry, driven by an increase in awareness of the importance of shade in skin cancer prevention. In addition to the domestic market, early childhood services and schools have driven demand, resulting in specialised structures and materials available in Victoria.

Vitamin D is an important consideration when designing shade. In 2009, the Department of Health released *Vitamin D and the Built Environment in Victoria – a guideline for planners, engineers, architects, and policy makers in local and state government.* This document is a guideline for planning safe sun exposure in the built environment as a source of vitamin D. It focuses on how the built environment can enable safe sun exposure for the general community and for groups of people requiring special consideration to help prevent vitamin D deficiency.

Australian shade standards

There currently appears to be variation in the types and quality of shade development. While the shade industry is becoming more skilled and professional, small agencies, such as childcare centres, have limited expertise in assessing the quality and effectiveness of shade that can be provided. It is important that there are sufficient resources and expertise to plan, install and maintain adequate shade protection in education and childcare settings, outdoor playgroups, recreation and domestic settings.

Schools and early childhood settings

The new Victorian Prevention and Health Promotion Achievement Program developed by the Department of Health and the Department of Education and Early Childhood Development supports schools and early childhood settings to create safe, healthy and friendly environments for learning. Victorian primary, secondary and special schools and early childhood settings will be supported to develop effective health promotion practice and will be recognised for their achievements against statewide benchmarks for health and wellbeing, including sun protection criteria linked to the SunSmart program.

Early childhood services are very successful at protecting children from over-exposure to UVR and require continued focus and support. Eighty per cent of early childhood services are members of the SunSmart Early Childhood Services Program. These services are currently required to operate under a National Quality Framework, which requires them to provide adequate shade and to have a sun protection policy. Some services, particularly the increasing number of family day care services, could be better supported in meeting the requirements under the National Quality Framework.

The SunSmart Primary Schools Program is one of the longest, continuously running school health promotion programs in Australia. Ninety per cent of all Victorian primary schools participate in the SunSmart Primary School program, reaching approximately 440,000 Victorian schoolchildren.

The SunSmart Early Childhood Services and Primary Schools programs are some of the most successful public health programs of their kind in Australia and require ongoing focus and support. However, this level of success has not necessarily been sustained across all school levels. Currently only 67 secondary schools are registered members of SunSmart's Secondary School UV program. Sun protection measures undertaken so effectively in primary schools and early childhood centres are less readily applied and enforced in secondary schools. There are unique barriers in the secondary school setting and new and innovative ways to reach young people are required.

Research shows that a focus on ensuring environmental strategies such as shade are in place in secondary schools is vital. Shade alone can reduce overall exposure to UVR by up to 75 per cent (Dobbinson et al. 2009). Research indicates that secondary school students will use shade if it is provided, though they are less likely to adopt other sun protection behaviours (Dobbinson et al. 2009). The opportunity exists to strengthen shade availability and policy in secondary schools as part of a mix of interventions targeting young people.

Sport and recreation

Most sport and recreation takes place outdoors, often during peak UVR times. It is important that individuals spend time outdoors participating in sport and recreation as part of a healthy lifestyle. Sport and recreation clubs have a responsibility to ensure the health and wellbeing of their participants, including ensuring appropriate shade is available to participants and spectators and that good sun protective behaviours are encouraged.

However, shade development and maintenance often falls within the remit of local government and experiences significant constraints, such as limited resources and planning and design limitations. This issue needs to be addressed in collaboration between sporting and recreation clubs, local government and planners.

Parks and outdoor spaces

Local government plays a key role in managing local parks, playgrounds and sporting ovals. Establishing and maintaining appropriate built and natural shade is a challenge from the perspective of access to appropriate expertise and available resources. SunSmart, local government, the Department of Sustainability and Environment, and Parks Victoria have been working together around shade planning and while awareness of the value of shade is growing, resources are limited and risk management concerns can hinder shade development.

Beaches are a key outdoor space where people spend time during peak UVR periods. Making beaches a supportive environment for UVR protection has challenges as landscape amenity is important and there is little opportunity for built or natural shade. There is an opportunity to explore ways to make beaches a more supportive environment for UVR protection with relevant management bodies.

Sun protection policy in workplaces

UVR exposure is a major occupational hazard for Victorians who work outside. It is estimated that around 200 melanomas and 34,000 non-melanoma skin cancers per year are caused by occupational exposure in Australia (Fritschi & Driscoll 2006).

The legislative framework for UVR protection in the workplace includes a number of nationally-based standards and guidance notes, supported by the *Victorian Occupational Health and Safety Act 2004.*

SunSmart and WorkSafe Victoria have been working together for many years to address the issue of occupational exposure, with a strong focus on the building and construction industry. UVR protection is viewed as 'standard practice' and is routinely raised by worksite inspectors on site visits.

In January 2010, the *National hazard exposure worker surveillance – exposure to direct sunlight and the provision of sun exposure controls in Australian workplaces report* was launched by Safe Work Australia. This report identified that regulators and interventions should target the following groups as immediate priorities:

- industries with high levels of occupational exposure, in particular, agriculture, construction, forestry and fishing
- smaller sized workplaces.

The report also identified that, although exposure duration is relatively short, those working in the education industry (teachers and physical educators in particular) are exposed to direct sunlight and often not provided with sun protection (Safe Work Australia 2010).

Opportunity exists to expand this 'standard practice' into those at risk occupations identified by Safe Work Australia.

The new Victorian Prevention and Health Promotion Achievement Program is being established in workplaces. Workplaces will be supported to develop effective health promotion practice and will be recognised for achievements against statewide benchmarks for health and wellbeing. Sun protection is an area that will be incorporated into the program in the future.

Solaria regulation and its contribution to UVR protection

In 2009, the International Agency for Research on Cancer (IARC) classified UVR-emitting tanning devices as 'carcinogenic to humans', based on the results of a 2006 systematic review that examined the association between solarium use and risk of melanoma and other skin cancers (International Agency for Research on Cancer 2007).

The current law in Victoria is that operators of a commercial tanning unit must ensure:

- any person under the age of 18 years is not allowed to use a solarium
- any person with skin type 1 is not allowed to use a solarium
- every client has a skin type assessment conducted prior to using a solarium
- every client signs the prescribed consent form prior to using a solarium
- proof of age documents are sighted prior to a client signing a consent form
- mandatory health warnings are displayed.

Since the introduction of these laws, there has been a reduction of approximately 56 per cent in the number of commercial tanning units in the state. The number of business sites operating tanning units has decreased even more dramatically, by approximately 68 per cent.

In 2012, both the New South Wales (NSW) and South Australian (SA) state governments announced a ban on commercial tanning units effective from 31 December 2014.

During development of this framework, the Victorian Government was presented with a letter signed by 161 dermatologists, cancer specialists and clinicians outlining a range of evidence around the dangers of sunbed use, and calling for a ban on solaria. The evidence demonstrating the dangers of solaria use and the negative impact on the community included:

- one in six melanomas in Australians aged 18 to 29 years could be prevented if solaria were closed (Cust et al. 2011)
- each year in Australia an estimated 281 new melanoma cases, 43 melanoma-related deaths and 2,572 new cases of squamous cell carcinoma are attributable to solarium use, at a cost to the health system of around $3 million (Gordon et al. 2008)
- a systematic review published in the *British Medical Journal* which demonstrated that the risk of cutaneous melanoma increased by 87 per cent when the use of tanning devices starts before the age of 35 (Boniol et al. 2012). It also showed a dose response effect with a 1.8 per cent increase in risk of melanoma for each additional session per year (Boniol et al. 2012). This review used the same method as the 2006 IARC review and included a further eight studies (Boniol et al. 2012).

This avoidable exposure creates an increased cost for the health system and a devastating cost for individual Victorians and their families. The banning of commercial solaria will, over time, reduce the incidence of the most deadly form of skin cancer melanoma.

The Victorian Government has been persuaded by the increasing evidence of the harmful effects of sunbed use and will move to ban commercial tanning units effective from 31 December 2014 in line with similar provisions in NSW and SA. The Victorian Government will also seek to work with the Commonwealth and other jurisdictions to investigate the potential options for a coordinated national approach on solaria, including consideration of a ban on the importation and manufacturing of sunbeds.

Strategic directions in supportive environments for UVR protection

- Promote the importance of having appropriate and good quality shade in public places where the community spends time outdoors.
- Promote best practice in sun protection policy in schools, sporting clubs, public spaces and workplaces.
- Continue to support programs to maintain sun protection in early childhood services and primary schools.
- Review current regulations and guidelines for shade against current evidence for appropriate UVR protection.
- Ban commercial tanning units in Victoria effective from 31 December 2014 in line with NSW and SA.
- Work with other jurisdictions to investigate the potential options for a coordinated national approach on solaria.

Opportunities for progress in 2013–17

- Encourage the availability of shade in local government areas, schools and sporting clubs.
- Promote shade education for local planners.
- Support Parks Victoria to develop and extend ways of incorporating UVR awareness and retrospective shade development into their management of Victoria's parks.
- Work with local government to include sun protection within municipal health and wellbeing and other relevant plans.
- Strengthen sun protection policy in workplaces and sporting clubs.
- Support schools and early childhood settings to achieve statewide benchmarks for sun protection through the Victorian Prevention and Health Promotion Achievement Program.
- Examine ways shade can be improved in secondary schools.
- Promote skin cancer prevention in the workplace by ensuring sun protection is incorporated into the Victorian Prevention and Health Promotion Achievement Program for workplaces in a meaningful and appropriate way.
- Work in partnership with other jurisdictions to develop an Australian shade standard.
- Review current guidelines and regulations for shade to ensure they promote appropriate UVR protection and are in line with current evidence.
- Amend the *Radiation Act 2005* to ban commercial tanning units used in solaria in Victoria effective from 31 December 2014.
- Seek to work with the Commonwealth and other jurisdictions to investigate the potential options for a coordinated national approach on solaria, including consideration of a ban on the importation and manufacturing of sunbeds.

Knowledge, attitudes and behaviours

Strategic directions

- Work with target groups to improve understanding of risk factors for skin cancer, ways in which to protect themselves and their children and detect skin cancer early.
- Shift social norms/attitudes to more accurately reflect the risks of UVR exposure.

For skin cancer prevention efforts to be effective, and have the desired effect on individual behaviour change and health outcomes, a broad range of strategies need to be implemented. Successful health promotion programs:

- take a broad, comprehensive approach to behaviour change that uses a wide variety of strategies, such as mass communication within a social marketing framework, legislative and regulatory change, advocacy and community mobilisation, inspection and compliance monitoring, community education, resource development, policy and procedural development, economic incentives and product development
- focus not only on individual behaviour change but consider all factors (social, cultural, policy and environmental)
- seek to influence the environment so that individuals are supported and not inhibited in their behaviour change by the environment within which they live, work, study and socialise
- involve interventions that are targeted and tailored to key target groups
- are informed by evidence and underpinned by theories that assist in understanding the drivers of health behaviour
- are underpinned by community involvement, engagement and partnership with key stakeholder groups
- are used consistently and over a sufficiently long period, recognising that quick fix, episodic, short-term project-based approaches in health promotion are limited in their effectiveness (Department of Human Services 2003).

It is important that messages about skin cancer prevention are balanced between the risks of skin cancer from too much sun exposure and the need to maintain adequate vitamin D levels. This is particularly important for those most at risk of vitamin D deficiency.

It is also important that consideration is given to the 'flow on' effects of skin cancer prevention communication, such as the personal effect on skin cancer patients, survivors and their families as well as an increase in demand for general practitioners and dermatologists.

Sun protective behaviours

The desired sun protective behaviours the framework aims to support are:

- Become familiar with your skin. Check all of your skin, not just sun-exposed areas. If you notice anything unusual, including the development of a spot or any change in shape, colour or size of a spot, visit your doctor.
- When the UV index is 3 and above:
  - wear sun protective clothing that covers as much of your skin as possible
  - apply SPF30+ broad spectrum, water-resistant sunscreen liberally to clean, dry skin at least 20 minutes before being exposed to the sun, and reapply at least every two hours when outdoors
  - wear a broad-brimmed hat that shades your face, neck and ears
  - seek shade
  - wear wrap-around sunglasses.

Mass media, social marketing and communications

Mass media campaigns are widely used to expose high proportions of large populations to messages through routine uses of existing media, such as television, radio and newspapers (Wakefield et al. 2010).

In recent years, there has been a shift towards using social marketing approaches in public health to influence behaviour change. Social marketing is the adaptation and adoption of commercial marketing activities, institutions and processes as a means to induce behavioural change in a targeted audience on a temporary or permanent basis to achieve a social goal (Dann 2010).

Research shows that SunSmart mass media campaigns to date have had a positive impact on sun protective attitudes and behaviours (Dobbinson, S. J. et al. 2008).

There is evidence indicating that mass media can be an effective tool for addressing a range of health behaviours, including skin cancer prevention (Wakefield et al. 2010). For mass media strategies to be effective, they must be combined with other interventions and use multiple media. These supporting inventions should address social, environmental, policy and cultural factors (World Health Organisation 1986).

Cancer Council Victoria and the SunSmart program have used a mass media and social marketing component to skin cancer prevention campaigns for the past 30 years, since the introduction of the Slip! Slop! Slap! campaign in 1980. The most recent social marketing activity in Victoria was an integrated *Dark Side of Tanning* and *Wes Bonny* campaign (licensed from the Cancer Institute NSW), delivered in partnership by SunSmart, VicHealth and the Victorian Government.

Digital and social media are rapidly growing areas of communications. There is significant opportunity to communicate skin cancer prevention and vitamin D messages via these new media, particularly when targeting adolescents and young people.

Mass media and social marketing campaigns for skin cancer prevention are conducted across a number of states and territories, which suggests duplication at a national level. There is opportunity for either collaboration between jurisdictions or, considering the majority of the healthcare cost of skin cancer is borne by the Commonwealth, to advocate to the Commonwealth Government for a national skin cancer prevention social marketing campaign, as was implemented from 2006–07 to 2008–09. There is currently no ongoing Commonwealth investment to match state-based investments.

Strategic directions for knowledge, attitudes and behaviours

- Working with target groups to improve understanding of risk factors for skin cancer, ways in which to protect themselves and their children and detect skin cancer early.
- Shifting social norms/attitudes to more accurately reflect the risks of UVR exposure.

Opportunities for progress in 2013–17

- Promote education and information to parents about sun protection.
- Improve knowledge of risk factors for skin cancer and of behaviours to adopt to protect against those risk factors, particularly for 13–24 year olds and men aged over 50.
- Improve early detection knowledge, particularly for men aged over 50.
- Advocate to the Commonwealth Government for a national approach to social marketing.

Early detection

Strategic directions

- Strengthen Victoria's skilled workforce to better recognise, treat and refer skin cancers across the healthcare continuum.
- Promote appropriate and high-quality surveillance and monitoring options for those individuals at most risk.
- Advocate to the Commonwealth Government to review funding models for early detection of skin cancer.

Skin cancer is the most common cancer in Australia. In Victoria it is estimated that there are around 40,000 new diagnoses of non-melanoma skin cancer each year (Cancer Council Victoria 2011). Excluding non-melanoma skin cancer, in 2010, melanoma was the fourth most common type of cancer. If detected early, the survival rate for melanoma is relatively high, with an 87 per cent five-year survival rate for males and 93 per cent for females (Farrugia et al. 2012).

There is growing concern about rapidly growing melanomas that do not adhere to the ABCD criteria, commonly used to detect melanoma (asymmetry, border irregularity, colour variegation and large diameter), such as nodular, desmoplastic and acral lentiginous melanomas which have their own distinct presentations.

General population screening for melanoma or non-melanoma skin cancer is not recommended as there is no evidence to show this reduces death from melanoma or any other type of skin cancer, which is a prerequisite to justify population cancer screening. Victoria, as a member of the Australian Health Ministers' Advisory Council, has endorsed the Cancer Council Australia and the Australasian College of Dermatologists position statement:

> *"Cancer Council Australia and the Australasian College of Dermatologists do not endorse the practice of skin checks in public places as a screening method, but recognise the value in promotional or educational activity that raises awareness of early detection or skin cancer prevention."*
>
> (Cancer Council Australia 2007).

High-risk groups

Although anyone can get skin cancer, there are some sections of the population at higher risk. Quality surveillance and monitoring options are important for these groups.

Research indicates that the risk of skin cancer is higher for people who:

- previously had a skin cancer and/or have a family history of skin cancer
- have a large number of moles on their skin
- have a skin type that is sensitive to UVR and burns easily
- have a history of severe/blistering sunburns
- spend lots of time unprotected outdoors during their lifetime
- actively tan or use solaria, sunlamps and sunbeds
- work outdoors (SunSmart 2011).

Individuals aged 55 or over are more likely to be diagnosed with melanoma, and they account for over two-thirds of melanoma diagnoses in Victoria. From 50 years of age and onwards, melanoma incidence and mortality becomes progressively higher in men than in women. In Victoria, research suggests that men living in rural areas are at higher risk, with melanoma incidence rates one-third higher than men in urban areas (Victorian Cancer Registry 2011).

UVR-emitting tanning devices have been shown to increase the risk of melanoma by 87 per cent when the use of tanning devices starts before age 35 (Boniol et al.).

Approximately five per cent of all melanomas can be attributed to an inherited gene (SunSmart 2011).

It is important that these risk factors are recognised, both by the health workforce and by individuals themselves. A number of 'risk calculators' developed in Australia aim to inform individuals about their personal risk of developing skin cancer; however, to date none have been validated.

General practice

General practitioners have a critical role in providing advice to patients around sun protection, vitamin D requirements, early detection services, treatment of skin cancer and providing referrals to specialists.

As the majority of skin cancers are detected through general practice, there is an opportunity to provide further training and education to general practitioners to improve the accuracy, specificity and ability to know when to refer to a specialist practitioner. Data collection and reporting are also an important component of management of skin cancer.

There is concern regarding current levels of training relating to the early detection of skin cancer and skin cancer prevention within undergraduate medical training courses. How to deliver improved quality education to the large number of medical students coming through the system is an important consideration.

Due to the ever increasing demand on the time of general practitioners, opportunities also exist to provide further education and training to practice nurses to conduct skin checks and refer patients for further examination if required.

Other workforces

An under-utilised workforce in skin cancer prevention is allied health professionals, such as osteopaths, physiotherapists and massage therapists, who regularly see people's skin. Pharmacists are another allied health profession likely to deliver sun protection, vitamin D and early detection information in their day-to-day work. These allied health professionals may be able to identify suspicious lesions and refer people at a local general practitioner for examination and follow up if required.

Skin cancer clinics and quality assurance

In recent years, the number of skin cancer clinics in Australia has increased. These clinics are convenient for patients as they offer a variety of services and fee arrangements. Currently there are no regulations about who can establish these clinics nor are there specific training requirements for the clinicians who work in them (Commens 2007). Most practitioners in skin cancer clinics are general practitioners with a special interest and training in skin (Dunlevy 2007).

Concerns have been raised by various bodies (Australian Society of Plastic Surgeons, Australian College of Dermatologists) around issues such as diagnostic performance and appropriate management within skin cancer clinics (Youl et al. 2007). It appears that these concerns have been based on isolated cases that have resulted in adverse outcomes, rather than systematic reviews (Wilkinson et al. 2006).

It is important that the government works in partnership with the sector and uses evidence to establish the next steps in addressing current quality concerns.

Equity of access to dermatology in rural and regional Victoria

Dermatology is not widely available in rural and regional Victoria, with very few specialists residing outside the Melbourne metropolitan area. These areas need services, which could be delivered by increasing dermatologists practising in these areas and through the use of technology such as telehealth (teledermatology).

Teledermatology is the practice of dermatology using information technology and communications systems to exchange medical information between a patient, clinician and a dermatologist – at the same or different times and in different geographic locations. This transfer of information can be done in real-time via the use of video conference technology or at different times using digital images transferred via a secure web-based platform (store and forward teledermatology).

Store and forward teledermatology is the process whereby the patient healthcare data and still digital images are captured by a clinician, the digital images and patient data are packaged as a case file and forwarded via a telecommunications (similar to email) service to a dermatologist.

The Commonwealth Department of Health and Ageing prepared a discussion paper on telehealth, which identified that teledermatology (specifically store and forward) is a viable and economic solution for doctors in rural and remote areas to access professional specialist opinions to assist in providing services to the patient (Elmslie & Elton 2011). However, because store and forward is not funded by Medicare, it is not the most common form of teledermatology.

On 1 July 2011, Medicare Australia introduced telehealth, an initiative that aims to address some of the barriers to accessing medical services for Australians in eligible telehealth areas. Telehealth provides financial incentives to eligible practitioners who enable patients to participate in a video consultation with a specialist. In addition to the incentive program, eligible practitioners can access new telehealth MBS item numbers that provide benefits for Medicare and Department of Veterans' Affairs patients. The telehealth program currently does not include store and forward technology. With the increase in alternative and new technologies, an opportunity exists to explore how these can be used effectively in the early detection of skin cancer.

Strategic directions for early detection

- Strengthening Victoria's skilled workforce to better recognise, treat and refer skin cancers across the healthcare continuum.
- Promoting appropriate and high-quality surveillance and monitoring options for those individuals at most risk.
- Advocating to the Commonwealth Government to review funding models for early detection of skin cancer.

Opportunities for progress in 2013–17

- Explore ways to improve early detection education and training within general practice.
- Develop partnerships with universities and other training institutions to provide skin cancer prevention and early detection education to undergraduate medical and nursing students.
- Explore the use of new technology for improving early detection services in rural and regional Victoria.
- Advocate to the Commonwealth for store and forward technology to be funded under Medicare.
- Improve awareness of early detection for high-risk groups by providing information and education.
- Research surveillance models of care for those at high risk.
- Advocate to the Commonwealth for an MBS quality audit of skin cancer screening clinics and, where appropriate, strengthen quality measures.
- Advocate to the Commonwealth for appropriate funding models for high-risk groups.

Research and evaluation

Strategic directions

- Promote improved quality and availability of detection, surveillance and incidence data for skin cancer.
- Establish an agreed policy research agenda for skin cancer prevention between the Victorian Government, Commonwealth and Victorian research institutions.

Research and evaluation will form a pivotal component of this framework. There are a number of policy, program and practice knowledge gaps in skin cancer prevention. Understanding how we can better prevent skin cancer and influence individuals' behaviours will ultimately lead to better health outcomes for the community. Evaluation of activity is essential in ensuring accountability, measuring impacts, measuring cost effectiveness and ensuring ongoing quality improvement.

There is opportunity for this framework to strengthen partnerships and collaboration between researchers and policy makers at state and national levels.

There continues to be a large amount of emerging evidence and new directions, such as diet and the role of genetics, in skin cancer prevention. Vitamin D continues to be an active area of research. We now understand that a balance is required between avoiding an increase in the risk of skin cancer and achieving enough UVR exposure to maintain adequate vitamin D levels.

Data

Data on skin cancer detection, surveillance, incidence and mortality is important to build an evidence base for improved or innovative clinical practice, population health interventions and service planning.

There are currently significant amounts of data collected around skin cancer; however, questions have been raised as to whether the right kinds of data are collected and whether or not that data is accessible to consumers or health practitioners.

To improve outcomes for all Victorians, particularly identified target groups, the state and Commonwealth governments will work together to improve recording and reporting on the detection and management of skin cancer within the health system, including in general practice.

Measuring changes in attitudes and sun protective behaviour

The National Sun Protection Survey, conducted by Cancer Council Victoria, is the main study used to assess the Victorian population's response to skin cancer prevention activity. The survey examines sun-related knowledge, attitudes and behaviours and sunburn incidence of people aged 12–69 through weekly telephone interviews conducted on Monday and Tuesday evenings over eight weeks of summer. The National Sun Protection Survey is based on a Victoria-only survey that was conducted nine times between 1987–88 and 2001–02. In 2010–11, SunSmart funded a boosted sample of adolescents and young people aged 12–24 to the Victorian data collection, to enable separate analyses of these key target groups for the first time and provide a baseline for future campaigns targeting these groups.

Since the first sun survey in the 1987–88 summer, there have been significant attitudinal changes towards sun tanning; however, there is still more that can be done. Figures 5 and 6 depict the changes in attitudes of adults and adolescents towards sun protection over the summers of 2003–04 and 2006–07.

Figure 5: Victorian adults' sun protection attitudes 2003–04 to 2006–07 (percentage of adults who agreed with each statement) (Dobbinson et al. 2007)

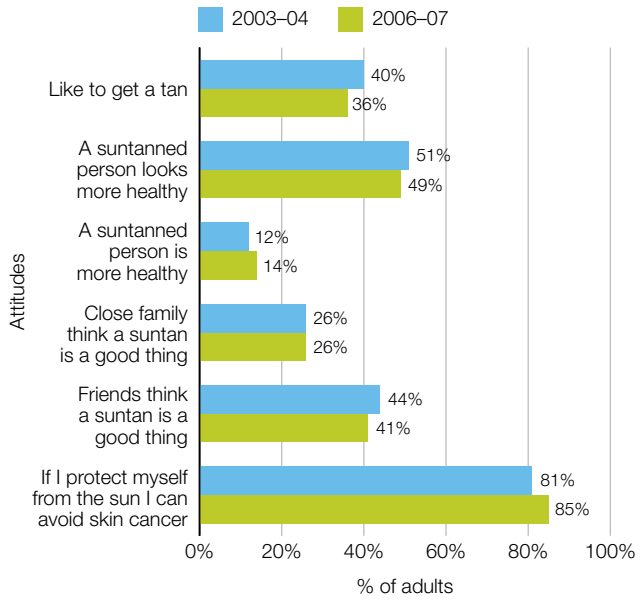
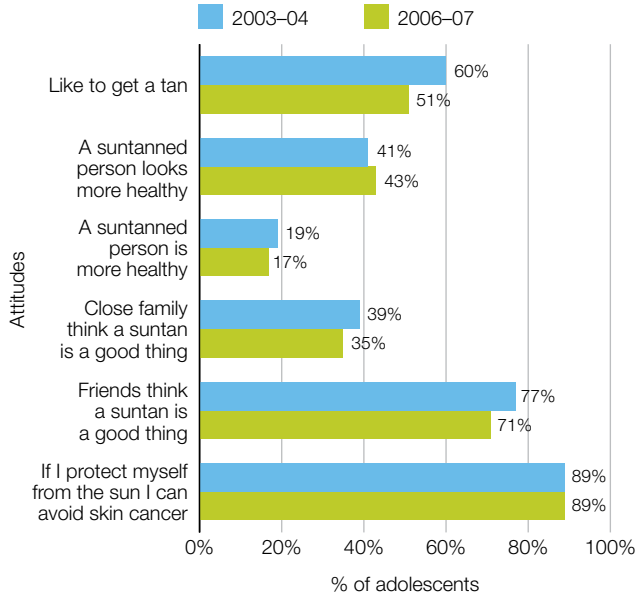


Figure 6: Australian adolescents' sun protection attitudes 2003–04 and 2006–07 (percentage of adolescents who agreed with each statement) (Dobbinson et al. 2007)



The third National Sun Survey was conducted in summer 2010–11. Early results indicate that nationwide, there has been a 15 per cent fall in the number of teenagers who prefer a tan since 2003–04, and only 12 per cent of teenagers now believe a tanned person is healthier. However, in Victoria, over half of teenagers believe their risk of skin cancer is low, despite melanoma being one of the most common cancers in young Victorians. Teenage girls are twice as likely to want a tan as boys; however, both sexes use inadequate sun protection. Analysis of the data is ongoing and further results will be released in 2012–13.

Strategic directions for research

- Promoting improved quality and availability of detection, surveillance and incidence data for skin cancer.
- Establishing an agreed policy research agenda for skin cancer prevention between the State Government, Commonwealth and Victorian research institutions.

Opportunities for progress in 2013–17

- Review skin cancer data collection within the health system, including in general practice.
- Develop research partnerships involving state and Commonwealth governments and Victorian research institutions.
- Develop skin cancer prevention policy research framework.
- Review monitoring and evaluation methods for measuring attitude and behaviour change in Victoria.

4. Governance and reporting arrangements

The skin cancer prevention framework is a living document that will be adapted and modified to reflect new developments and actions as they arise. The Victorian Government is committed to increasing accountability and transparency. Managing the implementation of the framework and monitoring the outcomes are critical to ensuring that the investment by government is well spent, and that the expected health outcomes are achieved.

The Department of Health will establish a skin cancer prevention framework advisory committee that will provide strategic oversight to the implementation of the framework. The department will provide secretariat for the advisory committee and will be responsible for developing its terms of reference. Representation on the advisory committee will include a broad range of government and non-government stakeholders.

The advisory committee principles will include:

- collaboration and partnership across government, health, primary care, private and research sectors
- universal access and a focus on those most in need
- person and family-centred
- evidence-based decision making
- capable and engaged workforce
- maximum returns on health system investments
- sustainable use of resources through efficiency and effectiveness
- continuous improvement and innovation.

Implementation of the framework will be led by the Department of Health. Expert working groups with representation from other Victorian Government departments and relevant health sector organisations will be established as required.

References

Armstrong B, 2004, 'How sun exposure causes skin cancer', *Prevention of Skin Cancer,* In: Hill DE, JM. English, DR. (eds), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 89–116

Australian Bureau of Statistics, 2011, *Labour force,* AIHW, Canberra.

Australian Institute of Health and Welfare, 2008, *Non-melanoma skin cancer: general practice consultations, hospitalisation and mortality.,* AIHW, Canberra.

Australian Institute of Health and Welfare, 2010a, Australian cancer incidence and mortality workbooks, viewed 28 July 2011, <http://www.aihw.gov.au/cancer/data/acim_books/index.cfm>.

Australian Institute of Health and Welfare, 2010b, Cancer *in Australia: An Overview 2010,* Cancer series no. 60, AIHW, Canberra.

Australian Institute of Health and Welfare, Australasian Association of Cancer Registries, 2004, *Cancer in Australia 2001,* AIHW, Canberra.

Australian Institute of Health and Welfare A, 2005, *Health system expenditures on cancer and other neoplasms in Australia, 2000–2001,* AIHW, Canberra.

Boniol M, Autier P, Boyle P, Gandini S, 2012, 'Cutaneous melanoma attributable to sunbed use: systematic review and meta-analysis', *BMJ,* vol. 345, pp. e4757.

Cancer Council Australia, 2007, *Position statement: screening and early detection of skin cancer,* <http://www.cancer.org.au/content/pdf/CancerControlPolicy/PositionStatements/PS-Screening_early_detection_skin%20cancer_August_2007.pdf>.

Cancer Council Victoria, 2007, *Canstat: A digest of facts and figures on cancer,* Skin Cancer, Cancer Council Victoria, Melbourne.

Cancer Council Victoria, 2011, *Cancer in Victoria Statistics and Trends 2010,* Cancer Council Victoria, Melbourne.

Commens CA, 2007, 'Skin cancer: changing paradigms of practice and medical education', *Med J Aust,* vol. 187, pp. 207–208.

Cust AE, Armstrong BK, Goumas C, Jenkins MA, Schmid H, Hopper JL, Kefford RF, Giles GG, Aitken JF, Mann GJ, 2011, 'Sunbed use during adolescence and early adulthood is associated with increased risk of early-onset melanoma', *Int J Cancer,* vol. 128, pp. 2425–2435.

Dann S, 2010, 'Redefining social marketing with contemporary commercial marketing definitions', *Journal of Business Research,* vol. 63, pp. 147–153.

Department of Health, 2011a, *Victorian Health Priorities Framework 2011–2022: Metropolitan Health Plan,* State Government of Victoria, Melbourne.

Department of Health, 2011b, *Victorian Public Health and Wellbeing Plan 2011–2015,* State Government of Victoria, Melbourne.

Department of Health, 2012, *The Victorian Health Monitor,* State Government of Victoria, Melbourne.

Department of Human Services, 2003, *Integrated Health Promotion: A practice guide for service providers,* State Government of Victoria, Melbourne.

Department of Human Services, 2009, *Vitamin D and the built environment in Victoria: a guideline for planners, engineers, architects and policy makers in local and state government,* State Government of Victoria, Melbourne.

Dobbinson S, Jamsen K, Francis K, Dunlop S, Wakefield M, 2007, *2006–07 National Sun Protection Survey Report 1. Skin cancer prevention knowledge, attitudes and beliefs among Australians in summer 2006–07 and comparison with 2003–04 in the context of the first national mass media campaign,* Cancer Council Victoria, Melbourne.

Dobbinson SJ, Wakefield M, Hill D, Girgis A, Aitken JF, Beckmann K, Reeder A, Herd N, Fairthorne A, Bowles KA, 2008, 'Prevalence and determinants of Australian adolescents' and adults' weekend sun protection and sunburn, summer 2003–2004', *Journal of the American Academy of Dermatology,* vol. 59, pp. 602–614.

Dobbinson SJ, Wakefield MA, Jamsen KM, Herd NL, Spittal MJ, Lipscomb JE, Hill DJ, 2008, 'Weekend sun protection and sunburn in Australia trends (1987–2002) and association with SunSmart television advertising', *Am J Prev Med,* vol. 34, pp. 94–101.

Dobbinson SJ, White V, Wakefield MA, Jamsen KM, White V, Livingston PM, English DR, Simpson JA, 2009, 'Adolescents' use of purpose built shade in secondary schools: cluster randomised controlled trial', *Bmj,* vol. 338, pp. b95.

Dunlevy G, 2007, Skin Cancer Clinics Under Fire, viewed 28 July 2011, <http://www.skinspecialists.com.au/skin-specialists-articles/2007/1/18/skin-cancer-clinics-under-fire/>.

Elmslie P, Elton H, 2011, *The implementation of teledermatology in Australia,* Department of Health and Ageing, Canberra.

Farrugia H, Thursfield V, Karahalios E, Giles G, 2012, *Cancer Survival Victoria 2012,* Victorian Cancer Registry, Cancer Council Victoria, Melbourne.

Fransen M, Karahalios A, Sharma N, Dallas E, Giles G, Sinclair R, 2012, 'Non-melanoma skin cancer in Australia', *The Medical Journal of Australia,* vol. 197, pp. 565–568.

Fritschi L, Driscoll T, 2006, 'Cancer due to occupation in Australia', *Aust N Z J Public Health,* vol. 30, pp. 213–219.

Gordon LG, Hirst NG, Gies PH, Green AC, 2008, 'What impact would effective solarium regulation have in Australia?' *Med J Aust,* vol. 189, pp. 375–378.

International Agency for Research on Cancer, 2007, 'The association of use of sunbeds with cutaneous malignant melanoma and other skin cancers: A systematic review', *Int J Cancer,* vol. 120, pp. 1116–1122.

International Agency for Research on Cancer, 2008, *Vitamin D and Cancer,* IARC, France.

Kricker A, Armstrong B, Goumas C, Litchfield M, Begg C, Hummer A, Marrett L, Theis B, Millikan R, Thomas N, Culver H, Gallagher R, Dwyer T, Rebbeck T, Kanetsky P, Busam K, 2007, 'Ambient UV, personal sun exposure and risk of multiple primary melanomas', *Cancer Causes and Control,* vol. 18, pp. 295–304.

Montague M, Borland R, Sinclair C, 2001, 'Slip! Slop! Slap! and SunSmart, 1980-2000: Skin cancer control and 20 years of population-based campaigning', *Health Education & Behavior,* vol. 28, pp. 290–305.

Parsons PG, Neale R, Wolski P, Green A, 1998, 'The shady side of solar protection', *Med J Aust,* vol. 168, pp. 327–330.

Safe Work Australia, 2010, *National Hazard Exposure Worker Surveillance: exposure to direct sunlight and the provision of sun exposure controls in Australian workplaces,* Safe Work Australia.

Stiller CA, 2007, 'International patterns of cancer incidence in adolescents', *Cancer Treat Rev,* vol. 33, pp. 631–645.

SunSmart, 2008, *Skin cancer prevention: A blue chip investment in Victoria,* Cancer Council Victoria, Melbourne.

SunSmart, 2011, Risk factors for skin cancer, viewed 22 December 2011, <http://www.sunsmart.com.au/skin_cancer/risk_factors>.

Veierod M, Adami H, Lund E, Armstrong B, Weiderpass E, 2010, 'Sun and solarium exposure and melanoma risk: effects of age, pigmentary characteristics, and nevi.' *Cancer Epidemiology, Biomarkers & Prevention* vol. 19, pp. 111–120.

Victorian Cancer Registry, 2011, Victorian Cancer Statistics, viewed 22 December 2011, <http://vcrdata.cancervic.org.au:8082/ccv/>.

Vos T, Carter R, Barendregt J, Mihalopoulos C, Veerman L, Magnus A, Cobiac L, Bertram M, A W, 2010, *Assessing Cost-Effectiveness in Prevention ACE – Prevention,* Report, University of Queensland, Deakin University, Melbourne.

Wakefield M, Loken B, Hornik R, 2010, 'Use of mass media campaigns to change health behaviour', *The Lancet,* vol. 376, pp. 1261–1271.

Wilkinson D, Askew DA, Dixon A, 2006, 'Skin cancer clinics in Australia: workload profile and performance indicators from an analysis of billing data', *Med J Aust,* vol. 184, pp. 162–164.

World Health Organisation, 1986, *The Ottawa Charter for Health Promotion,* World Health Organisation, Ottawa.

Youl PH, Baade PD, Janda M, Del Mar CB, Whiteman DC, Aitken JF, 2007, 'Diagnosing skin cancer in primary care: how do mainstream general practitioners compare with primary care skin cancer clinic doctors?' *Med J Aust,* vol. 187, pp. 215–220.