Elimination of sunbeds in Ireland report.

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August 2022

Contents

Examining the feasibility of eliminating sunbed use

This report was prepared in response to the following recommendation under Action Area 6.3 of the National Skin Cancer Prevention Plan 2019-2022:

Examine the feasibility of eliminating sunbed use

Section 1: Background

Skin cancer is the fastest growing cancer in Ireland. There are almost 13,000[1] new cases of skin cancer diagnosed each year. This is twice the number compared to 10 years ago and is projected to more than double again by 2045[2]. Yet most skin cancers could be prevented.

Ultraviolet (UV) radiation is the main risk factor responsible for skin cancers. It is emitted from the sun and other artificial sources such as sunbeds. The UV radiation is divided by wavelength into three regions: UVA, UVB, and UVC. All three bands are classified as a probable human carcinogen. Sunlight exposes skin to UVA and UVB; UVC is not present in the sunlight that reaches the earth's surface. Harmful exposure to UV radiation damages DNA, which can lead to skin cancer. The International Agency for Research on Cancer (IARC) classifies UV-emitting tanning devices as a Group 1 carcinogen[3]. Sunbeds emit UVA and UVB radiation. Most sunbeds in Europe emit UV radiation at levels equivalent to midday tropical sun[4]. Some sunbeds can emit UV radiation with an intensity equivalent to a UV index of >11 which means extreme risk of harm from unprotected sun exposure[5].

The European Commission Scientific Committee on Health, Environmental and Emerging Risks (SCHEER) stated there is no safe limit for exposure to UV radiation from sunbeds[6]. Additionally, sunbeds pose an increased danger for the Irish population because of our fair skin. Most people living in Ireland have fair skin - Fitzpatrick skin type 1 or 2[7]. People with this skin type burn easily and tan poorly so are particularly vulnerable to UV damage and, as a result, are at a higher risk of skin cancer.

People who use sunbeds for the first time before the age of 35 increase their risk of developing melanoma by 75 per cent[3]. Sunbeds are an unnecessary source of additional UVR, which adds to the carcinogenic effects of ambient UVR.

In Ireland each year over 1,000 people are diagnosed with melanoma[1]. Although it is not the most frequently diagnosed skin cancer, it is associated with significant ill health, is much more likely to spread to other parts of the body and is associated with significant morbidity and mortality. Excluding non-melanoma skin cancer, it is the fourth commonest invasive cancer in both men and women[1].

Non-melanoma skin cancer (NMSC) includes basal cell carcinoma and squamous cell carcinoma and accounts for almost 12,000 cases per year[1]. This skin cancer is much more common but is a less aggressive cancer, which slowly progresses over months or years.

The number of people being diagnosed with skin cancer in Ireland is rising rapidly. Between 2015 and 2045, it is predicted that the number of cases of melanoma per year among males will increase to 1,678 (+207%), and for females to 1,400 (+140%). The number of people diagnosed with NMSC over the same time period is predicted to increase to 16,623 (+177%) for males and 13,503 (+189%) for females[2].

The Department of Health monitors and reviews implementation and enforcement of the Public Health (Sunbeds) Act 2014. The National Skin Cancer Prevention Plan will continue to build on work already underway to reduce demand for sunbeds and other artificial sources of UV.

Section 2: Adverse Health Effects from UV Radiation

Artificial tanning devices e.g. sunbeds cause DNA damage in skin cells. UVA radiation penetrates more deeply into the skin than UVB and is linked to photo ageing. UVB is linked to reddening of the skin and sunburn as well as contributing to tanning in some people. Most importantly, both UVA and UVB contribute to DNA damage, and therefore IARC classifies the whole spectrum of ultraviolet radiation (UVA, UVB and UVC) and the use of UV-emitting tanning devices (sunbeds) as carcinogenic to humans[3].

The most serious adverse effect from UV radiation is skin cancer. There is strong evidence from case-control and cohort studies that there is a significant link between skin cancer and sunbed use[8]. Many studies have highlighted that sunbed users are at an increased risk of melanoma[9, 10] and non-melanoma skin cancer (basal cell carcinoma and squamous cell carcinoma).[11]

A systematic review[9] showed that people who have used a sunbed at least once, at any stage in their life, have a 20% higher risk of developing melanoma compared to those who have never used a sunbed. Some evidence was also found that indoor sunbeds increased the risk of squamous cell carcinoma (SCC), especially when sunbed use started before the age of 20[9]. Using sunbeds for the first time before the age of 35 increases the risk of developing melanoma by 75%[3].

UV exposure during the first 10–15 years of life makes a disproportionately large contribution to lifetime risk of skin cancer[12]. Severe sunburn during childhood (three or more instances before age 20) is associated with 2-4 times higher risk of developing melanoma in later life[13].

Sunbeds pose an increased danger for people in Ireland because of the high proportion of our population with fair skin - people with fairer skin types have double the risk of the getting

melanoma, the most serious form of skin cancer. Over 75% of the Irish population has 'Fitzpatrick Skin type I or II, i.e. have fair complexion, blue /green eyes, freckling, prone to sunburn and do not tan or have difficulty tanning[14]. A tan is a sign that the skin has been damaged from UV radiation. Tanning without a sunburn can cause premature ageing of the skin and skin cancer through DNA damage[5].

Section 3: Current Law governing sunbed use

WHO encourages governments to formulate and enforce effective laws governing the use of sunbeds stating:

"In countries where voluntary industry codes of practice exist, the sunbed owners have generally not shown significant capacity to self-regulate effectively"[5].

At an EU level The Low Voltage Directive (2014/35/EU) ensures that electrical equipment are within certain voltage limits and sunbeds are regulated under this which covers all risks, not just the electrical safety. The standard EN 60335-2-27:2013 sets out requirements for the safety of sunbeds, including limits for ultraviolet radiation emission[15]. In Ireland the Competition and Consumer Protection Commission are responsible for enforcing product safety regulations.

The Public Health (Sunbeds) Act 2014 was signed into law on 24 June 2014. The objectives of the Act are to:

- Protect children and those under 18 years of age from the risk of skin damage, in view of their increased risk of developing skin cancer;
- Regulate the use of sunbeds by those over 18 years of age so as to reduce their likelihood of developing skin cancer, premature ageing, damage to their eyes and other health risks from exposure to ultra-violet radiation (UVR); and
- Generally promote a greater public awareness across all age groups, with a long-term view to reduce the incidence of skin cancers.

Phase two of the Act came into effect in March 2015 and introduced comprehensive measures to protect public health including:

- Prohibition of unsupervised use of sunbeds in sunbed premises;
- Requirement that clients use protective eyewear;
- Prohibition on certain marketing practices;
- Prohibition on health claims;
- Warning signs on premises and social media sites;

- Requirement that sunbed businesses provide health information to potential clients; and
- Notification to the HSE.

The provisions of the Act and associated regulations are enforced by the HSE's Environmental Health Service (EHS).

Section 4: International Sunbed Use Legislation

A growing number of countries have introduced regulations to reduce exposure to UV radiation from sunbeds such as age restrictions for access to sunbeds, special taxes and limiting UVB output from the sunbed devices.

Brazil became the first country in the world to ban sunbeds in 2009. The only UV devices legitimately allowed to operate in Brazil are those used for medical purposes[15].

Since 2016, Australia has legislated an outright ban on sunbeds except the Northern Territory, where there are no commercial tanning businesses. Before the ban was introduced, an Australian study[17] estimated that exposure to UV radiation from the use of sunbeds beds contributed to 43 melanoma-related deaths and 2,572 new cases of squamous cell carcinoma per year in Australia.

A huge influencing factor in the ban in Australia were some high profile case studies in the media[18]. This in turn led to a decreased number of businesses in the industry and public attitudes showed support for the ban. This meant there was less resistance from the industry to the proposed ban and as the industry was small, the prospect of job losses and demand for Government compensation was also lowered[17].

Australia also included a financial incentive for owners to dispose of sunbeds through government-approved buyback schemes and safe disposal processes, to discourage sale to the general public[17]. This in turn reduced the number of privately owned sunbed owners. In Victoria, the Department of Health and Human Services (DHHS) implemented the Commercial Tanning Practices Assistance Package in early 2014, where sunbed machines were collected and disposed of. Businesses would then be given an assistance grant of A$2000 per commercial sunbed unit if collected prior to 30 June 2014, and A$1000 for units collected between July and 31 December 2014[17].

One of the key concerns of the outright ban in Australia was the potential for machines from commercial sunbed operators to be sold for private use, which would in turn mean unregulated use. A study[17] conducted during the summer prior to the ban, found generally positive responses, with half of sunbed users (52%) supporting a ban. However, some users (12%) reported intending to use privately owned sunbeds after the ban came into effect[17].

Some countries including Ireland, Belgium, Germany and France have banned the hire or sale of sunbeds to individuals under the age of 18[15]. Several countries, including Austria, Belgium, Chile, Finland, Latvia and Slovakia, have banned unsupervised operations at the same time as restricting access by age[15]. Several countries, including France, Italy and Spain, have implemented a ban on unsupervised sunbed services by prohibiting the sale of sunbeds for domestic use[15]. In Italy specifically, legislation was introduced to put the onus on the sunbed operator to prohibit access to all people with skin type 1 and pregnant women from using sunbeds[15].

Section 5: Prevalence of sunbed use in Ireland

Section 13 of the Public Health (Sunbeds) Act 2014 and regulations made thereunder (Sunbed Notification Regulations 2015) require all Sunbed Business Operators to notify their premises to the HSE annually on or before 1 March and to pay a fee. It is an offence not to notify the HSE of the sunbed business. Failure to notify the HSE may result in the serving of a Fixed Payment Notice (with a fine of €300 per offence) and/or prosecution.

The number of registered premises here in Ireland has reduced year on year. In Figure 1 below, in 2015 there were 525 premises registered in Ireland whereas most recently in 2020, 424 premises registered their business through the HSE, which is a drop of just under 20%.

Total number of registered sunbed premises 2015-2020

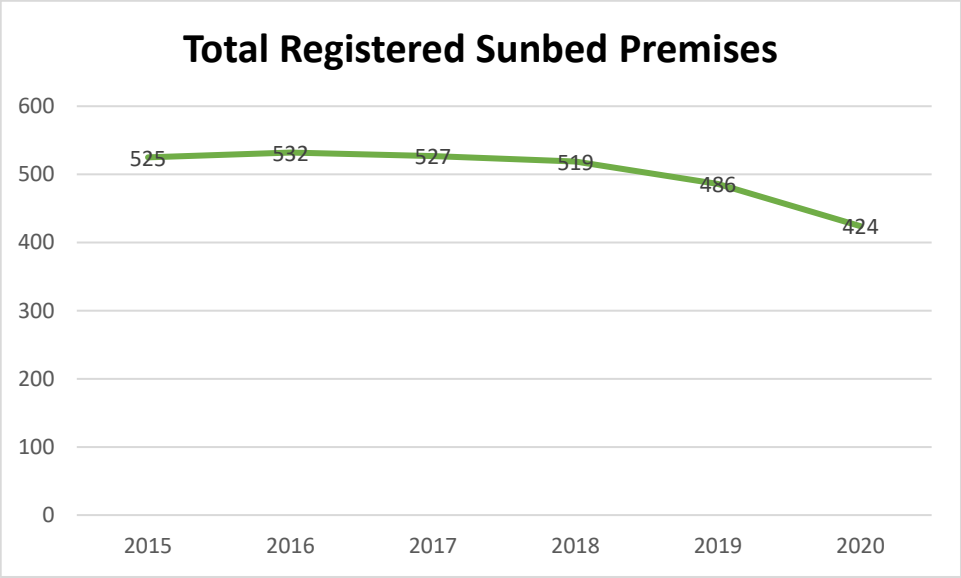

Figure 1: Total number of registered sunbed premises 2015-2020

Figure 2 below shows the breakdown of notified sunbed premises by county in 2015 with Dublin (n=93) having the highest number of registered premises followed by Cork (n=70) and Limerick (n=33).

It is important to note that even though numbers of registered premises have gone down significantly over the last few years, the 2020 drop could be due to Covid-19 restrictions and we could see an increase in registered premises in 2022 onwards. Many premises may have decided not to operate during the pandemic.

Throughout the Covid-19 pandemic there was no prohibition on the ability of people to rent out sunbeds to be used in their own homes. The sunbeds can be delivered to a house and installed. The beds are rented out for a set period of time and are then collected. The Public Health (Sunbeds) Act 2014 does not apply to the use of sunbeds in a private dwelling by members of the public in their own homes. Therefore, no regulations can be monitored on the length of time a person uses a sunbed, how often and if someone under the age of 18 uses the sunbed in a private dwelling. It is however, an offence to sell or hire a sunbed to persons under 18 years of age for use in a private dwelling.

Breakdown of registered sunbed premises by county 2015

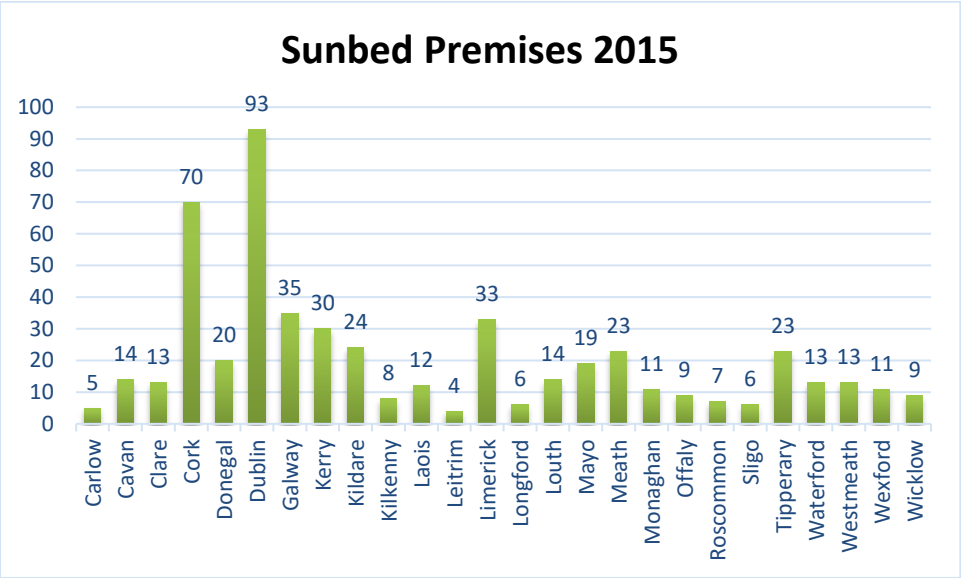

Figure 2: Breakdown of registered sunbed premises by county 2015

Figure 3 shows the lower number of registered premises by county in 2020, compared to 2015 data in Figure 2. Dublin (n=83), Cork (n=56) and Limerick (n=24) still have the most registered premises but with smaller numbers of registered premises in each county.

Breakdown of registered sunbed premises by county 2020

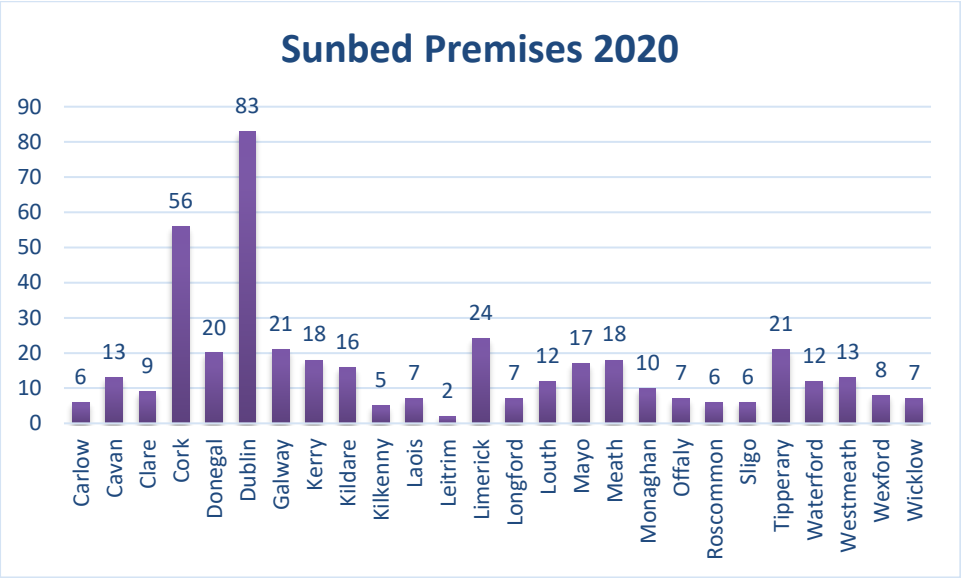

Figure 3: Breakdown of registered sunbed premises by county 2020

To ensure compliance of the Public Health (Sunbeds) Act 2014 by sunbed operators, the HSE has a test purchasing programme using volunteer minors. Test purchase procedures is an integral part of the overall EHS enforcement programme dealing with sunbed legislation. The participation of persons aged 15 years to 17 years of age in test purchasing procedures helps to identify the number of operators who are in breach of legislation by selling sunbed sessions to those under the age of 18.

Figure 4 below highlights the total sunbed inspection infringements recorded. It is important to note that there can be multiple infringements recorded in each inspection based on each legislative requirement assessed. 2020 shows a marked drop in the number of infringements, most likely due to Covid 19.

Total sunbed inspection infringements recorded for all inspection types.

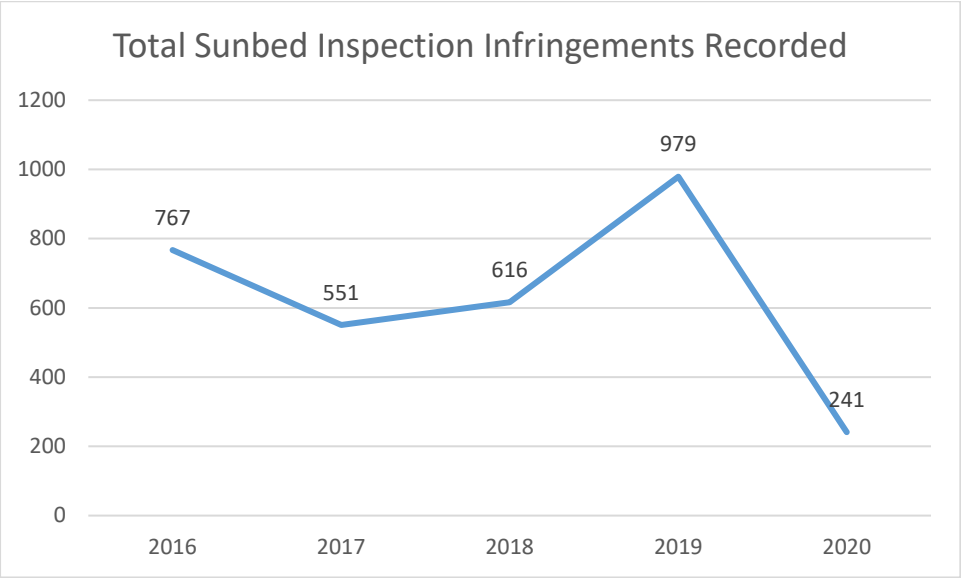

Figure 4: Total sunbed inspection infringements recorded for all inspection types.

Figure 5 below shows the number of sunbed inspection infringements recorded during mystery shopper inspections. Mystery shopper inspection is conducted to test the compliance of a sunbed business with some parts of the legislation that may not be verified satisfactorily during a physical inspection. It is important to note that there can be multiple infringements recorded in each inspection based on each legislative requirement assessed. The drop in inspection infringements in 2020 was due to a drop in all types of inspections being carried out due to Covid-19 limitations on all HSE services and operation of some sunbed businesses

Total sunbed inspection infringements recorded during a mystery shopper inspection

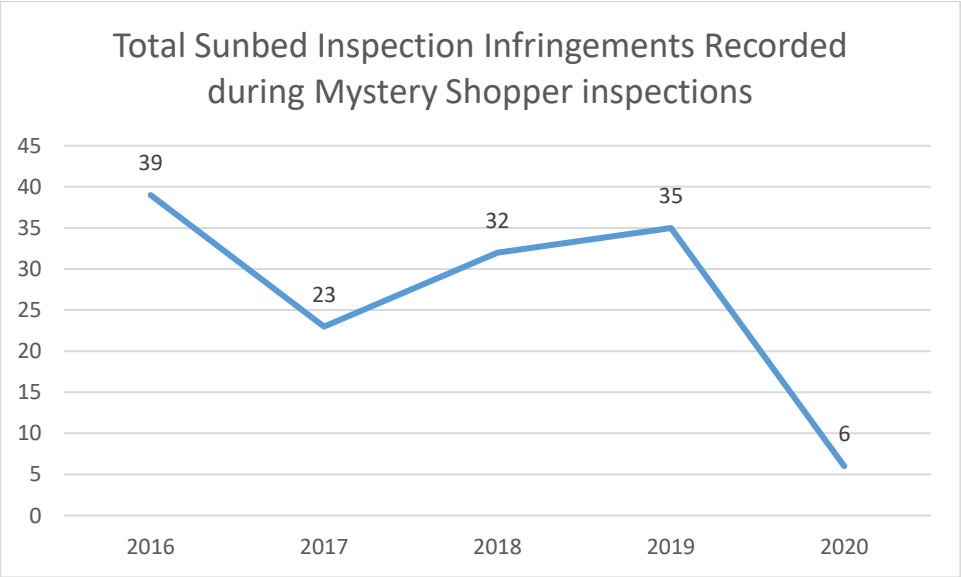

Figure 5: Total sunbed inspection infringements recorded during a mystery shopper inspection.

Table 1 below shows there are currently 369 establishments operating sunbeds. The business type is broken down via hiring, selling and using sunbeds at licenced premises.

Breakdown of sunbed premise by business type (April 2022)

Business Type	**No of premises**
Hire	
Beauty Salon	6
Gym	1
Leisure Centre	1
Mobile Unit	4
Stand Alone Commercial	5
Stand Alone Domestic	1
Total	**18**
Sale	
Beauty Salon	4
Gym	2
Stand Alone Commercial	3
Total	**9**
Use	
Beauty Salon	211
Beauty Salon, Hairdresser/Barber	10
Gym	5
Gym, Stand Alone Commercial	1
Hairdresser/Barber	34
Hotel	1
Hotel, Leisure Centre, Beauty Salon, Gym, Mobile Unit, Launderette, Stand Alone Domestic, Stand Alone Commercial	1
Leisure Centre	5
Stand Alone Commercial	67
Stand Alone Domestic	2
Currently not assigned	5
Total	**342**
Grand Total	**369**

Table 1: Breakdown of sunbed premise by business type (April 2022)

Surveys conducted in Ireland have shown current data on what sunbed usage in Ireland currently looks like.

The Healthy Ireland 2019[16] survey found that:

- 3% of the Irish population use sunbeds either regularly or from time-to-time. Usage among women is higher than among men (4% and 1% respectively).
- Usage is highest among women aged 25 to 34 (7%). 5% of women aged 15 to 24 and the same proportion of women aged 35 to 44 use sunbeds.
- Usage of sunbeds is higher in Dublin (5%) than outside Dublin (2%). It is also higher in more deprived areas (4%) than in more affluent areas (2%).

A Skin Cancer Prevention Survey carried out by National Cancer Control Programme (NCCP) in 2019[19] found that:

- Females were more aware of the risks associated with sunbeds compared to males. Three quarters (76%) of respondents (n= 1,051) were aware of the risk of skin cancer from sunbeds -higher among females (80%) than males (71%).
- A higher proportion of females were aware of the risk of skin ageing from sunbeds compared to males (63% vs 46%).
- 40% of all respondents had used a sunbed in their lifetime (29% of males and 49% of females).
- 5% of males and 6% of females currently use sunbeds.

Consultations with young people on skin cancer prevention behaviours[20] report found with young people from the Traveller community that:

- The reasons young people gave for using sunbeds echoed their responses for not using sunscreen including getting a tan and to look good;
- Depicted having a tan as part of their outfit, and several of the young people (males and females) described the importance of having a tan to attract the other sex;
- The young people talked about how people feel after using sunbeds, with some people referencing the importance to self-esteem and self-confidence.

Section 6: Economic burden of skin cancer in Ireland

Melanoma is the fourth commonest cancer among other invasive cancers, excluding non-melanoma skin cancer. Melanoma places increasing financial pressure on healthcare systems, due to rising incidence and increasing patient care costs[21]. Furthermore, where is has metastasised, additional high cost chemotherapy, immunotherapies or targeted therapies may be required.

Skin cancer is one of the most preventable cancers by protecting skin from ultraviolet radiation from the sun and artificial sources such as sunbeds. The Australian SunSmart programme, which aims to prevent skin cancers, has reported to have prevented more than 43,000 skin cancers between 1988 and 2010, a net cost saving of $92 million.[22] Skin cancer treatment in public hospitals ($9.20~$10.39 per head/year) was 30-times greater than current public funding in skin cancer prevention ($0.37 per head/year)[22].

A recent research study[23] conducted in Ireland has shown for the first time the economic burden of melanoma in an Irish healthcare setting. Patients with the best prognosis (stage IA) were the least costly to treat and manage compared to those with the worst prognosis (stage IV). The study found

that the cost of managing a case of melanoma diagnosed at stage IV was more than 25 times more expensive than managing a case diagnosed at stage IA (stage IV €122,985 versus stage IA €4,269). Given the rising incidence of melanoma, an aging population and health price inflation, management of melanoma will continue to present a substantial economic burden.

As previously discussed skin cancers are largely preventable with sun protective behaviours. A recent systematic review by Gordon and Rowell (2015)[21] concluded that prevention initiatives and screening interventions were highly cost-effective and potentially cost saving. Since 2020, the NCCP has initiated the SunSmart Skin Cancer prevention campaign. This campaign focuses on primary prevention of skin cancer which aims to inform people on how to protect themselves from ultraviolet radiation (UV) from the sun. It is a multi-pronged approach including specific targeting of high-risk groups and a national media campaign which runs from April to September each year.

Section 7: Conclusion

The European Commission and its independent Scientific Committee on Health, Environmental and Emerging Risks (SCHEER)[6] published that there is strong evidence that UV radiation from sunbeds causes skin cancer, both melanoma and non-melanoma skin cancer. This includes a form of eye cancer called ocular melanoma. SCHEER found that there is no safe limit of exposure to UV radiation from sunbeds[6]. Despite the evidence of the harmful effects of sunbeds as well as the high number of young people utilising sunbeds, many of whom are at high risk of skin cancer because of fair skin, no country in Europe has an outright ban in place on sunbeds.

After the International Agency for Research on Cancer released a statement classified indoor tanning devices as carcinogenic in 2009, sunbed use dramatically reduced worldwide between 2007–2012 and 2013–2018 in adolescents (22.0% to 6.5%) and adults (18.2% to 10.4%) [24]. A complete ban of commercial sunbeds, could see high economic cost savings of US $31.1 billion in North America and €21.1 billion (US $15.9 billion) in Europe while also producing 888 000 additional life-years and cost savings for society for the next generation of youths and young adults[25].

Many countries have a number of regulations in place, for example to prohibit unsupervised access, restrict use by certain 'high risk' individuals, and impose taxes and ban marketing and promotion of sunbeds. However, studies[33] [34, 35] have shown that regulation alone has proved to be inefficient and has failed to prevent high-risk individuals from using sunbeds.

A study conducted in Belgium showed that a total ban on sunbed use in Belgium would be more cost-effective than other primary prevention efforts as altering behaviours through an awareness campaign could be very challenging[31].

The success of an outright ban on commercial sunbeds in Australia except the Northern Territory, where there are no commercial tanning businesses was assisted by the government making legislative and educational efforts to reduce the health impacts of sunbed use. Strong public support also made the outright ban on commercial sunbeds easier with little resistance from the sunbed industry and the public.

There is good evidence in favour of an outright ban on commercial sunbeds. However, consideration should be given to how to mitigate against potential consequences, such as increased sale of domestic devices and use of unsupervised tanning services. There is also a greater need for targeted awareness of the dangers of sunbeds among certain subgroups who continue to use sunbeds, for instance in adolescents[35, 36].

There is very little data available on home use/private hiring of sunbeds here in Ireland. This is of concern as there is no control over the duration of use or frequency of use, or ability to monitor trends in usage. This requires review, both in the context of knowing the overall harm due to sunbed use and to informing policy in relation to an outright ban.

Public health campaigns can serve to effectively target those most likely to use sunbeds, as well as to garner public support for policy in relation to the elimination of sunbed use. The findings of the Healthy Ireland Survey 2019[16] are consistent with international studies in that female adults and adolescents more commonly use sunbeds than their male counterparts[26, 27]. Two studies conducted[28, 29] in USA also highlight gay and bisexual men as a high-risk population for skin cancer compared with heterosexual males.

Research with the Irish Traveller community has found significantly different views in relation to cancer, skin care and specifically in relation to the use of sunbeds[37]. One example from the study found that while there was an acknowledgement that sunbeds were linked to skin cancer, the participants planned their continued use as it was more important to 'look beautiful'. This finding was echoed in Rattigan's study[38] who found low levels of awareness of the risks of sunbeds among Irish Traveller communities compared to the majority population. The women in the study linked tanned skin with health, beauty, and happiness, with some believing sunbed use was good for health, having a positive effect on conditions such as arthritis and psoriasis. The consultation with young people conducted in Ireland 2021[20] also showed young people use sunbeds to get a tan and to look good. Young males and females described the importance of having a tan to attract the other sex while also impacting on their self-esteem and confidence.

It is important to include all high-risk populations of sunbed usage in current and future educational campaigns including hard to reach groups. A public awareness campaign in Denmark showed a marked reduction in sunbed use following the campaign[30]. Combining both a ban on indoor sunbeds with a public health campaign to support it could provide health gains for young adults as well as cost saving for the health service.

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