

Are NZ Primary Schools SunSmart?

*A Baseline study,
prior to the implementation of the National SunSmart
Schools Accreditation Programme*

A report to the Cancer Society of New Zealand Inc.

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Executive Summary

Excess exposure to solar ultraviolet (UV) radiation is of considerable public health concern in New Zealand (NZ), and plays a key role in the development of skin cancers and eye diseases. There are about 1800 new melanoma cases diagnosed each year and, overall, skin cancers in NZ result in nearly 350 deaths annually, with about 250 of these from melanoma. It has been estimated that excess exposure to UV radiation is the cause of over 90% of all skin cancer cases in high UV environments like NZ in daylight saving months.

Skin cancer has been identified as an area of concern by the Ministry of Health and the NZ Cancer Control Trust. To help reduce excess exposure to UV radiation amongst children, a specific recommendation of the NZ Cancer Control Strategy was to encourage schools to adopt and implement the SunSmart Schools Accreditation Programme (SSAP).

The Cancer Society of NZ re-launched the previously regional SSAP as a nationwide programme in October 2005, with nationally coordinated administration and resources based around a comprehensive website¹, and with regional support for schools available from Cancer Society health promotion staff.

This report is prepared from a study commissioned by the Cancer Society to record baseline information about the sun protection policies and practices of NZ primary schools before the re-launch, in order to allow subsequent evaluation of the national SSAP programme.

Study methods

Principals at 242 schools completed surveys regarding school policies and practices, curriculum and environment pertaining to sun protection. Written documentation regarding sun protection, such as policies or student handbook excerpts, was requested from schools. Survey responses were evaluated according to the 12 minimum criteria of the SSAP. Each criterion could be 'attained', 'partially attained' or 'not addressed'. Schools were assigned a score from 0-12 for how many criteria they attained.

Key findings

The weaknesses found with regard to sun protection in schools completing the baseline survey were widespread. No school fully met all 12 accreditation criteria, based on their responses to the survey. Six schools fully attained 11 criteria, and another six fully attained 10. There were 21 schools which attained 3 or fewer criteria. Schools which reported that they had been previously accredited under the regionally administered SSAP met, on average, nearly one additional criterion over other schools, based on survey responses. Overall, the most common score achieved was 7 criteria. Role modeling and rescheduling were the two criteria for which schools were most likely to fully meet SSAP requirements. Relatively few schools met the more prescriptive minimum accreditation criteria for clothing or hats.

Most schools did not have documentation which adequately reflected all the sun protection measures being carried out in their school. Additionally, wording in school policies and other written material reflected a lack of understanding

¹ www.sunsmartschools.org.nz

amongst school management and Boards of Trustees (BOTs) of the issues around sun protection. This included, for example, inappropriate terms for sunscreens and reference to policy being implemented in *hot* weather, rather than in periods of high UV (11am-4pm during Terms 1 and 4). The inclusion of the sample policy on the SSAP website will be helpful to schools developing policies, provided this resource is brought to their attention.

There was a perception among some schools that the Maori and Pacific Island communities did not see sun protection as relevant. However, other schools specifically asked for Te Reo Maori resources to be developed for teaching about sun protection. The Cancer Society has a role to play in helping schools with high percentages of Maori and Pacific Island students to see that sun protection in Terms 1 and 4 is an issue that they should not ignore.

Nearly one third of schools indicated that they would use more sun protection teaching resources if these were available. This demonstrates a clear need for the additional curriculum development currently being undertaken by the Cancer Society and the SunSmart² partnership.

In the baseline survey only 23% of schools which used outdoor pools had water resistant sunscreen available for use at the pool. Rash shirt use was encouraged at 35% of these schools. While there is no specific requirement in the SSAP guidelines regarding the use of outdoor school pools, schools which use outdoor pools must be encouraged to develop procedures which protect students and staff from excess UV radiation exposure.

General conclusions

There are challenges to meet in promoting sun protective environments to primary schools. Continued support and adequate resources are needed to extend the implementation of the SSAP across NZ and to ensure that schools are encouraged to address the issue across the spectrum, including curriculum, practices, and environment; and through making a commitment through written policy.

When schools in the baseline survey were given the opportunity to suggest 'how the Cancer Society could better work with schools to promote sun protection', the comments were generally either positive or constructive, with a general respect for what the Cancer Society is attempting to do with regard to sun protection. However, the task is clearly an ongoing one.

The health promotion staff of the Cancer Society have a role to play in assisting schools to make progress towards SunSmart accreditation. The ability of schools to meet these needs may vary from region to region, but supportive information is available to all interested parties through the SSAP website.

Many schools will not be able to achieve accreditation without making significant changes to align their practices and policy documents to the sun protection accreditation criteria. Some schools may initially only partially meet the SSAP criteria, and will need to work towards incrementally increasing the level of sun protection compliance over several cycles of policy review. These schools will require ongoing support.

² SunSmart is the national brand for sun safety, adopted in 1993. It is trademarked to the Health Sponsorship Council, and funded by the Health Sponsorship Council and The Cancer Society of New Zealand, Inc.

Recommendations

1. **Communication:** That the HSC, the National Office of the Cancer Society and regional Cancer Society health promotion staff continue to raise awareness throughout the community of the need for children to be protected from excess UVR exposure, particularly between the hours of 11am and 4pm during daylight savings months (school terms 1 and 4).
2. **Promotion:** That the HSC, the National Office of the Cancer Society and regional Cancer Society health promotion staff continue to promote the SunSmart Schools Accreditation Program (SSAP), and encourage schools to lodge their details on the SunSmart Schools site, regardless of their current level of sun protective policies and practices.
3. **Implementation:** That support for schools, both nationally through the SunSmart website, and regionally by health promotion staff, should continue to be extended to schools to help move them along the continuum towards SunSmart accreditation. Improvement in levels of sun protection practices in all schools should be sought, even in those not accredited through the programme.
4. **Education:** That the National Office of the Cancer Society, in partnership with the HSC, continues upgrading sun protection educational resources for schools. Curriculum-linked resources should be developed for all primary and intermediate year levels (1-8), and made freely available through the SunSmart Schools website. Developing a curriculum linked to areas other than *Health and PE* (e.g. Science) is recommended, particularly for Years 7-8. Resources should also be developed specifically for schools which have high proportions of Maori and Pacific students, including in Te Reo Maori.
5. **Advocacy:** That the National Office of the Cancer Society, in partnership with the HSC, act as an advocate for schools towards the Ministries of Education and Health, Education Review Office, and NZ School Trustees Association to
 - raise the profile of sun protection in schools;
 - increase expectations of those schools that have not yet made sun protection their concern;
 - assist in obtaining adequate funding to implement the SSAP.
6. **Evaluation:** That the National Office of the Cancer Society and the HSC, as the SunSmart Partnership, commission a further survey, using methods similar to those reported here, in order to document progress along the continuum towards accreditation. Additionally, that in-depth evaluation be undertaken including on-site observation of sun protective practices in SSAP accredited schools; and qualitative data be collected from key stakeholders, including teachers, principals and parents.

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Development of the survey instrument was undertaken in cooperation with Dr. Judith Galtry and Mary Duignan of the National Office of the Cancer Society of NZ Inc. Additionally, as it was developed concurrently with the application form for the SunSmart Accreditation Programme (SSAP), input was sought from the SunSmart Accreditation Programme Operational Group of the Cancer Society of NZ, which includes health promotion staff from divisional offices around NZ.

Thanks to Andrew Gray for statistical expertise, Nathalie Huston for assistance in coding returned surveys and to Jacqui Smith and the staff of Standby Computing for data entry. Finally, we wish to acknowledge the principals and other school staff who took the time to complete the survey, and sent us documentation regarding sun protection in their schools.

Ethical approval

Ethical approval for this research was obtained at the Departmental level on 29 April 2005, and acknowledged by the University Ethics Committee July 5, 2005.

1. Introduction

1.1. Background

Overexposure to solar ultraviolet (UV) radiation is of considerable public health concern in NZ. It plays a key role in the development of skin cancers and some eye diseases. There are about 1800 new melanoma cases diagnosed each year, and overall, skin cancers in NZ result annually in nearly 350 deaths, with about 250 of these from melanoma (New Zealand Health Information Service, 2005). In NZ, one in five new melanomas are found in people younger than 45 years. It has also been estimated that, for every death from skin cancer, an average of 17.5 potential years of life are lost (O'Dea, 2000), therefore it is considered to be one of the most costly cancers in terms of years of life lost. In addition, direct costs to the health system are conservatively estimated at \$33 million per annum.

Skin cancer is potentially readily preventable, and it has been estimated that excess exposure to UV radiation is the cause of over 90% of all skin cancer cases in high UV environments (Armstrong, 2004). NZ is in a unique situation with summertime UV radiation levels being about 40% higher than levels experienced at similar latitudes in the northern hemisphere summer (McKenzie et al., 2006). The population of NZ is also predominately of European origin and more susceptible to the negative effects of UV radiation than groups indigenous to areas of comparably high UV. Additionally, since exposure to UV radiation does not immediately generate feelings of warmth, even when UV levels are high, people tend to stay outside in the sun for extended periods in milder temperatures. For example, an Australian publication on sun protection in schools indicated that students and staff were at risk of sunburn on 'milder' days, when the maximum temperature was between 19° and 27°C (SunSmart Schools Program, 1999). Summertime temperatures in NZ would rarely exceed this definition of 'mild'.

Skin cancer has been identified as an area of concern by the Ministry of Health and the NZ Cancer Control Trust (Ministry of Health & The New Zealand Cancer Control Trust, 2003). Specific strategies for addressing skin cancer are included in the *New Zealand Cancer Control Strategy: Action Plan 2005-2010*. (Ministry of Health, 2005) Objective 4 of Goal 1 (reduce the incidence of cancer through primary prevention) aims to 'reduce the number of people developing skin cancer due to UV radiation exposure'. One of the specific outcomes of this objective is to 'reduce exposure to UVR among children (12 years and under)' [NZCCS Outcome 18]. Encouraging schools to adopt and implement the SunSmart Schools Accreditation Programme is one of the specific actions identified by the Ministry of Health in the Action Plan to achieve this result [NZCCS Outcome 19].

Policy and practice that is based on knowledge of the role that UV radiation plays in human health should be encouraged as means of potentially protecting the health of New Zealanders. This would include both the avoidance of over exposure during high UV periods and awareness of the need for at least some exposure in order to maintain Vitamin D levels, especially in winter months. Recent research in NZ indicates that in winter months Vitamin D levels in children are less than ideal (Green et al., 2006).

1.2. The importance of school environments

Primary schools play an important part in the daily life of most NZ children, and are settings which can potentially have great influence on the health of their students. Providing supportive environments at school has the potential to

significantly reduce UV exposure and risk of skin cancer through improving sun protective behaviour. The school environment is amenable to regulation, and assisting schools to formulate sun protection policy can help move schools along a continuum towards an environment that is ultimately supportive of sun protection across many facets.

In addition to providing a supportive environment for making healthy choices, schools also offer education about many aspects of health. Schools can provide specific information about the dangers of excess sun exposure, and offer specific strategies for protection from the sun. Education of students and teachers about the importance of healthy choices can have a flow on effect to parents and others involved in the care of children.

A detailed examination of 'Sun protection and skin cancer prevention in New Zealand educational settings' was undertaken in 2003 by Dr. Judith Galtry of the Cancer Society of NZ (Galtry, 2004), and we will not duplicate her work here. The key goals and objectives emerging from that report include that the Cancer Society 'establish and deliver a nationally consistent and coordinated programme for sun protection and skin cancer prevention in primary and intermediate schools' (Goal 2); 'ensure effective programme delivery of the SunSmart Schools Accreditation programme among primary and intermediate schools' (Goal 4) and 'monitor adoption and implementation of the SSAP among primary and intermediate schools' (Goal 6).

The SunSmart Schools Accreditation Programme (SSAP) is closely modelled on the programme of the same name that was developed in Australia more than 10 years ago. It has been shown to be effective for motivating optimal sun protection policy and practice, and is recommended by the WHO as 'best practice' for addressing the issue of sun protection in schools (World Health Organisation, 2003).

1.3. Implementation of the SSAP

The baseline study reported here was initiated to help meet Goals 2, 4 and 6 in the Galtry report, outlined above. Preliminary results were made available directly to the Cancer Society of NZ (National Office) in October 2005, and to a group of Cancer Society regional health promoters in November 2005. These results have been used to shape and inform the SSAP through its development, and should help to make the SSAP more effective, efficient, and sustainable as a nationwide programme.

The programme was publicised directly to schools and through local Cancer Society Divisions, beginning in October 2005. Promotional material has directed schools to the SSAP website where the requirements for accreditation, application forms, sample policies and curriculum documents are available.³

³ www.sunsmartschools.org.nz

2. Methods

2.1. Sample selection

Two hundred primary schools were randomly selected from the Ministry of Education (MOE) database. This sample size was selected to be 10% of the state and state-integrated schools in NZ which cater for primary age children, including full primary⁴, composite and contributing schools, as well as Kura Kaupapa Maori. Twenty-seven additional schools were selected to raise the minimum sample size to 15 in each of 11 identified geographical regions. These regions correspond to the operational Divisions and Centres of the Cancer Society of NZ, and were as follows: Northland, Auckland, Waikato, Bay of Plenty, Gisborne/Hawkes Bay, Taranaki, Manawatu/Wanganui, Wellington, Nelson/Marlborough, Canterbury/Chatham/West Coast, and Otago/Southland.

In NZ all schools are given a Targeted Funding Educational Achievement (TFEA) decile number, depending on the socio-economic status of the area they serve. Approximately 10% of schools are allocated to each band, with 1 being the lowest and 10 the highest score available. We did not select schools based on their decile score, but recorded scores to check that schools returning surveys were representative, overall, with regard to decile distribution nationally.

2.2. Survey design

The survey instrument was designed to assess policy and practice in relation to sun protection in the surveyed schools. It was based on Australian precedents (Anti-Cancer Council of Victoria, 2002), but was adapted for NZ needs and conditions, and in conjunction with the SSAP application forms. The instrument collected some additional information, but was designed so that most data variables were comparable with the SSAP application form (as of June 2005)⁵. The survey instrument is included as Appendix A, and covers the areas of school policy, practices, curriculum and environment related to sun protection issues. Questions on obstacles to addressing sun protection at school, previous contact with the SSAP and other health promotion programmes, and a space for general comment on how the Cancer Society can best assist schools with sun protection were also included in the survey instrument.

2.3. Procedures

Each school was allocated an ID number to preserve anonymity for others than the named researchers. The surveys were mailed directly to the principal of each school selected. Principals' names were sought from school websites, or requested directly from the school via email, when there was an email address readily available. Principals' names were also requested directly from the MOE, but without success.

The surveys were initially mailed on 8 July, 2005, the final day of Term 2. It was thought that school principals may have had additional time for dealing with administrative issues during the break when students were not at school. The first reminder for non-responding schools was sent on 5 or 8 August, by email in most cases, though 6 were sent a reminder postcard, as either no email address was

⁴ *Full Primary Schools, Yrs 1-8 (age 5-13); Composite Schools, Yrs 1-15 (age 5-17); Contributing Schools, Yrs 1 – 6 (age 5-11); Kura Kaupapa, full immersion language nests.*

⁵ The refinement and development of the SSAP guidelines *after* the collection of baseline survey data means that some variables are not directly comparable with the minimum criteria as finalised. This is outlined in the text of the report whenever it occurs.

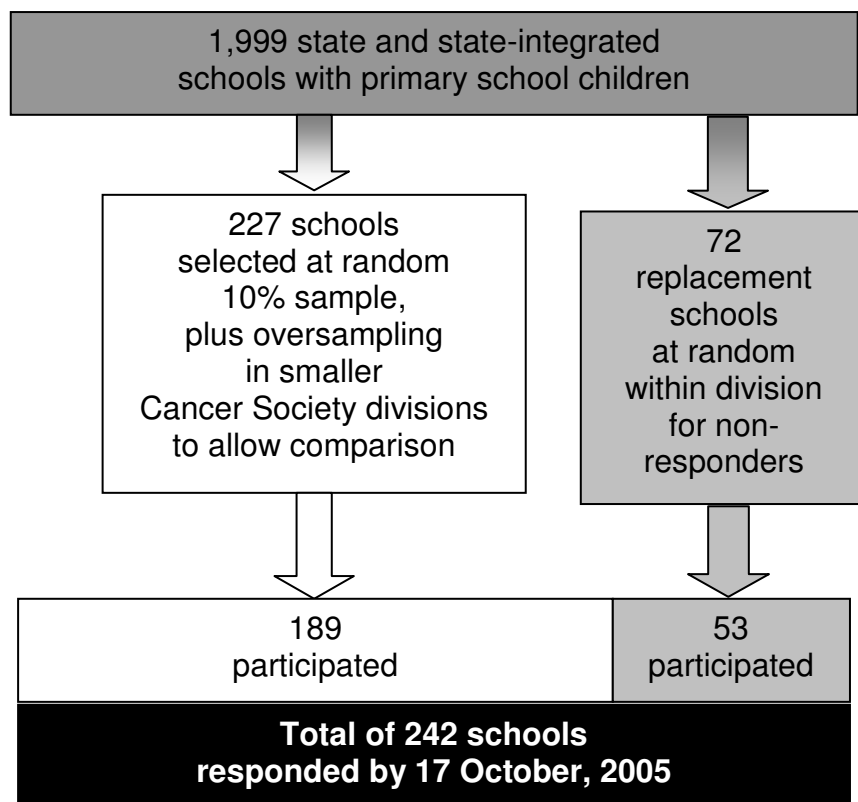
given in the MOE database, or the email was not deliverable. The second reminder for non-responding schools, which took place on 19 August, was the posting of a replacement questionnaire along with a reminder letter. Four schools had requested a replacement questionnaire prior to the second reminder.

Schools in the initial mailing which had not responded by Monday 5 September, 2005 were phoned during that week. Where possible, the principal was spoken with directly, and urged to complete the survey in order to allow us to present the most reliable summary of the situation in NZ primary schools with regard to sun protection.

Prior to the first mailing, replacement schools were selected for non-responding schools. Selection was, once again, at random within regions from the schools database. On 26 August, 72 surveys were sent out to 'replace' schools, matched by region, which had not sent a completed questionnaire prior to that date. The rate at which surveys were being returned had dropped dramatically, and we acted to maximise the likelihood of getting responses from at least 227 schools prior to 16 September, the date the SunSmart Schools website was initially scheduled to 'go live'.

The date for the SunSmart Schools website launch was delayed, and this allowed us to collect further responses. In total, 189 of the original 227 schools completed a survey, for a completion rate of 83%. Additionally, 53 of the 72 replacement schools (74%) returned a completed survey before the revised cut-off date of 17 October.

Figure 1. Flow chart of sample selection and response to the baseline survey of schools in NZ with primary aged children.



2.4. Analysis

The majority of the survey instrument consisted of fixed response questions. For twelve questions there was an 'other' option where schools could respond if their situation did not fit any of the fixed response options. The final item in the survey was open ended, with schools being asked for general comments or suggestions.

Responses to the 'other' options were collated into common 'themes' and coded as discrete responses in all cases. Nevertheless, the comments were recorded individually, and illustrative examples are reported in the results section. The open ended question was also coded by theme, but as the answers varied more considerably, they are reported using extended, anonymous quotations in Section 3.17.7.

Responses to the survey were coded by a research assistant, checked by one of the named researchers for consistency and accuracy, then entered into an electronic spreadsheet, checked for unidentified data entry errors, internal inconsistencies and missing data, cleaned and imported into SAS software for analysis.

2.5. SSAP accreditation criteria

The twelve criteria for SunSmart school accreditation, from the SunSmart Schools Website (sunsmartschools.org.nz), are listed in Table 1, along with an abbreviated name used in this report.

Table 1. Minimum criteria for SSAP accreditation.

Minimum criteria	Abbreviated name
1. The sun protection policy is implemented during terms 1 and 4, when ultraviolet radiation levels are most intense.	Policy
2. All staff, students and parents/caregivers are to be informed of the skin protection policy and its intended practices.	Information
3. All students wear a broad brimmed (minimum 7.5cm brim), legionnaire or bucket hat (minimum 6cm brim, deep crown) when outside.	Hats
4. Students not wearing a hat are required to play in allocated shade areas	Play in the Shade
5. The use of SPF 30+ broad spectrum sunscreen is encouraged.	Sunscreen
6. The use of sun protective clothing is encouraged (e.g. sleeves and collars).	Clothing
7. Staff are encouraged to act as role models by practising SunSmart behaviours.	Role Modelling
8. Sunsmart education programmes are included in the curriculum at all levels every year.	Curriculum
9. The sun protection policy is reflected in the planning of all outdoor events (e.g. camps, excursions, sporting events).	Planning
10. Outdoor activities are rescheduled, whenever possible, to minimise time outdoors between 11 am and 4 pm.	Rescheduling
11. The school has sufficient shade or is working towards increasing the number of trees and shade structures so as to provide adequate shade in the school grounds.	Shade Provision
12. The Board of Trustees and Principal review the sun protection policy regularly, including making suggestions or improvements at least once every three years.	Review

Scores were calculated using the twelve SSAP minimum criteria for all 242 schools which completed the survey. Responses to specific survey questions determined the 'attainment' of each of these criteria for each school. We also developed a 'partially attained' scoring for 9 areas. Criteria relating to *staff role modelling*, *outdoor event planning* and *policy review* could not be assessed as 'partially

attained'. Details of the requirements for each of the criterion are given in the following Sections 3.2 to 3.13 below.

Additional analysis was carried out on the schools which sent documentation with their completed surveys. The school sun protection policies, procedures, handbook extracts, or other written guidelines were compared against the twelve SSAP minimum criteria. Scores were calculated on documentation for 144 schools. Results based on documentation provided by schools are presented in Section 3.16.

Finally, schools were given a number from 0-12, which was the total number of accreditation criteria fully achieved, based on survey responses. Other scoring systems were investigated, such as assigning half points for 'partially achieved' criteria, or upgrading (or downgrading) scores based on written documentation supplied, but it was concluded that survey response alone would be used, as it was most similar to the SSAP application process. 'Partially achieved' scores, while interesting for baseline comparisons, are not adequate for schools to be accredited. Additionally, for accreditation criteria to be met, schools will be required to upgrade inadequate written documents to match satisfactory responses in the application form.

3. Results

3.1. Demographics

The 242 schools that participated were well spread throughout the geographical regions, which allowed us to make comparisons between Cancer Society Divisions. Overall, the responses are likely to provide a representative and comprehensive picture of sun protection practices across NZ primary schools. Descriptive data relating to the participating schools are presented in Table 2.

Table 2. Characteristics of schools in NZ with primary aged children, and of the schools participating in the baseline survey.

School Characteristic	NZ schools with primary age children %	Baseline schools participating %	Baseline schools participating n (Total = 242)
State	87	80	194
State-integrated	13	20	48
Decile			
1	11	11	26
2	11	10	23
3	10	12	28
4	10	13	31
5	9	9	22
6	9	9	21
7	10	10	23
8	9	10	23
9	11	9	22
10	10	10	23
Full primary			
Full primary	55	55	132
Contributing	40	40	98
Composite	4	5	12
Region			
Auckland	18	17	40
Bay of Plenty	6	7	16
Canterbury/West Coast	14	13	31
Gisborne/Hawkes Bay	8	7	18
Manawatu/Wanganui	9	8	19
Nelson/Marlborough	4	6	14
Northland Region	6	8	19
Otago/Southland	10	8	20
Taranaki	4	7	16
Waikato	13	11	27
Wellington	9	9	22
School size⁶			
<50	18	17	40
51-100	16	16	39
101-150	13	14	33
151-200	10	16	38
201-300	16	14	34
301-400	11	9	22
>401	13	12	30

⁶ School size was not included in the MOE database for 6 schools.

The participating schools did not differ significantly from schools nationally in either decile or school type. A higher percentage of state-integrated schools participated in the survey, but they fully met the same number of accreditation criteria, overall, as state schools.

A wide variety of school sizes were represented by participating schools, with the largest school having more than 750 students. Overall, the size of schools participating was representative of the distribution of NZ primary school size.

3.2. Sun protection policy

When asked if they had a sun protection policy, 59% of schools replied 'yes', and a further 18% indicated that 'one is under development'. Five percent of schools had a 'section on sun protection in our Health and Safety Policy', while 7% had 'written guidelines regarding sun protection'. Thirty-three percent of schools mentioned sun protection in their school prospectus.

Accreditation Criterion 1. Policy:

"The sun protection policy is implemented during terms 1 and 4, when ultraviolet radiation levels are most intense."

Fully attained = 51% Partially attained = 25% Not addressed = 24%

In order to meet this criterion, schools had to have a sun protection policy. If schools provided us with a copy of the policy we granted 'attained' status for this criterion. Most policies did, in fact, indicate that the policy was for Terms 1 and 4.

The overall quality of the policies is a separate issue. When we evaluated the policy content, no schools fully met the requirements of the SSAP. The issue of policy content is explored further in section 3.16.

Schools partially attained the policy criterion if they indicated in the survey that they were developing a sun protection policy (43 schools) or if they supplied other written documentation on sun protection (17 schools), for example, extracts from student handbooks, school prospectus or uniform guidelines.

3.3. Information

Schools were asked to indicate which things parents/caregivers were told during enrolment about sun protection at the school. The instructions were to 'tick all that apply', so the percentages add to more than 100% as a result. Six percent marked that 'no information is given'. In 81% of schools the requirement for children to wear hats when outside is raised, while 50% of schools relay the 'encouragement to wear clothing that protects the skin from the sun'. Forty-four percent of schools encouraged parents/caregivers to send children to school with sunscreen, while 37% encouraged adults to practice sun protective behaviours when involved with the school.

Schools were also asked to indicate how messages about sun protection were conveyed at school. Again, the instructions were to 'tick all that apply', so the percentages add to more than 100% as a result. The results are presented in Table 3.

Table 3. Methods of conveying messages about sun protection at school, ranked by frequency of reporting.

Method of conveying information about sun protection	Schools reporting n	Schools reporting %
Reminders about sun protection are given:		
In class regularly during Terms 1 and 4	197	81
In assemblies regularly during Terms 1 and 4	166	69
In assemblies at the beginning of Terms 1 and 4	149	62
In newsletters regularly in Terms 1 and 4	140	58
Posters about sun protection are displayed around the school	131	54
Reminders about sun protection are given:		
At staff meetings	128	53
In newsletters once or twice a year	111	46
The Ultraviolet index (UVI) is measured at school and displayed on a monitor	3	1
The maximum predicted clear sky UVI for the day is displayed	0	0

Accreditation Criterion 2. Information:

"All staff, students and parents/caregivers are to be informed of the skin protection policy and its intended practices."

Fully attained = 81% Partially attained = 10% Not addressed = 9%

Attainment of this criterion was a combination of the two items reported above; i.e. that some information about sun protection was given to parents/caregivers at enrolment, and that a variety of methods (at least 3 from Table 3) was used to convey general sun protection messages at school. Schools which gave no information at enrolment, or employed none of the listed methods for conveying sun protection messages at school, were deemed to have not addressed this criterion.

3.4. Hats

Hat wearing was enforced in 74% of surveyed schools. In an additional 25%, hat wearing was not enforced, but encouraged. The remaining 1% of schools indicated that they 'neither enforced nor encouraged' the wearing of hats at school.

Schools were also asked about the types of hats worn by the students. Multiple responses were permitted. In just over half of schools (52%) students wore 'broad-brimmed hats (at least 7.5 cm brim)'. One hundred and six schools (44%) only chose the protective options of: broad-brimmed hats, legionnaire hats, or bucket hats (at least 6 cm brim and deep crown). The remaining schools may have also chosen those protective options, but also chose one of the options unacceptable for accreditation, such as; 'any hat' (41%) or 'bucket hats (less than 6 cm brim)' (15%). The 'other' category attracted 14% response, with most (12%) writing in 'caps'.

When the enforcement of hat wearing was re-examined in light of the types of hats worn, a more realistic picture of protection emerged. Of the 74% of schools

reportedly enforcing the wearing of hats, nearly half were enforcing the wearing of hats that did not meet the criterion for accreditation. Overall, 40% of participating schools were enforcing the wearing of broad-brimmed, legionnaire, or big bucket hats.

Schools were asked to indicate 'on a typical Term 1 or Term 4 day at your school, what percentage of students would wear either a broad brimmed, legionnaire or bucket hat at morning and lunch break?' Fifty-one percent of schools indicated that at least 90% of students would do so.

Accreditation Criterion 3. Hats:

"All students wear a broad brimmed (minimum 7.5cm brim), legionnaire or bucket hat (minimum 6cm brim, deep crown) when outside."

Fully attained = 30% Partially attained = 67% Not addressed = 3%

Replies from three separate questions in the survey were taken into account in assessing this criterion. First, hat wearing had to be enforced, not simply encouraged at the school. Secondly, the types of hats worn at school had to be broad-brimmed, legionnaires or bucket hats. If it was indicated that 'any hat' could be used, or if 'caps' was written in, then schools could not fully attain this criterion.

The third part of meeting the hat criterion was the percentage of students wearing protective hats outdoors on a typical day in Term 1 or 4. The benchmark for full accreditation was 90%. Schools were deemed to have not addressed this criterion if none of the three questions were answered as outlined.

3.5. Play in the Shade

Only 14% of schools indicated that there was 'no restriction or consequence' for a student not wearing a hat when outside. The most common consequence was 'must play in the shade', which was the case in 73% of schools. Other consequences that schools selected from a list of four fixed item responses included; 'they must play indoors' (13%) and 'they must wear a hat from school spare hats' (29%). Write-in responses of punitive measures such as 'time out' or exclusion from PE class (4%), sitting in the shade with *no play* allowed (3%), and encouragement to wear a hat 'next time' (2%) made up the 'other' category. More than one response was allowed, so the specific category percentages add to more than 100%, overall.

Accreditation Criterion 4. Play in the Shade:

"Students not wearing a hat are required to play in allocated shade areas."

Fully attained = 69% Partially attained = 11% Not addressed = 20%

With regard to this criterion, we did not penalise schools again for the type of hats being worn. Schools did need to indicate that hat wearing was enforced, not merely encouraged. In addition, they were required to have practical consequences for students not wearing a hat when outdoors in Terms 1 and 4.

3.6. Sunscreen

Regarding the use of sunscreen at surveyed schools, 82% reported that 'students are actively encouraged to use sunscreen'. Sunscreen was available for students in all classrooms at 52% of schools, while it was available 'at various points

around the school' in 36% of schools. Fifty-three percent of schools indicated that 'parents are encouraged to provide sunscreen'. The majority of schools (64%) indicated that 'sunscreen is available for student use on specific occasions (e.g. PE, school trips)'. In 10% of schools, sunscreen was not supplied. In 3% of schools sunscreen was not supplied, *and* parents were not particularly encouraged to provide it for their children.

Time was given for the application of sunscreen before the lunch break in only 16% of surveyed schools. This was a requirement for accreditation in the Australian SunSmart Programme, but has not been retained in the NZ accreditation criteria.

The most common type of sunscreen available at school was SPF30+ (74%), while 14% of schools had SPF 15 sunscreen. Three schools indicated that they would use whatever sunscreen they were given.

Accreditation Criterion 5. Sunscreen:

"The use of SPF 30+ broad spectrum sunscreen is encouraged."

Fully attained = 65% Partially attained = 20% Not addressed = 15%

To attain this criterion, schools needed to indicate that students were 'actively encouraged' to use sunscreen, and to have SPF 30+ sunscreen available at school.

3.7. Clothing

The access that students had to protective clothing other than hats was explored in three questions around the school uniform or dress code. Thirty-seven percent of schools in the baseline survey reported having a school uniform. Ninety-four percent of those with a school uniform had a shirt with a collar (a polo-type shirt) as part of the summer uniform. Twenty-nine percent had an option that included elbow length sleeves or longer. In 33% of schools male students were required to 'wear shorts that fall above the knee', and in 27%, female students were required to 'wear shorts or skirts that fall above the knee'; that is, they did not have a more sun protective option.

For schools with no uniform we assumed that students would have no restriction on the wearing of protective clothing such as longer sleeves or leg coverings in summer months, but for both uniform and non-uniform schools we were interested whether students were 'encouraged to wear shirts with collars and longer sleeves'. This was reported in only 35% of schools which fully answered the three questions relating to clothing (217 schools). The wearing of singlets or 'spaghetti-strap' tops was forbidden in 34% of these schools, while 38% indicated that students must not show midriffs.

Overall, only 49% of schools reported that 'students must wear shirts for PE or other outdoor activities'. Students were reportedly allowed to wear sunglasses at 46% of schools. There were variations between uniform and non-uniform schools in levels of these clothing expectations. These are presented in Table 4, overleaf.

Table 4. Percentages of uniformed and non-uniformed schools meeting various clothing expectations or dress code options.*

Clothing guidelines at school	uniform schools %	non-uniform schools %	Total %
Students encouraged to wear shirts with collars & longer sleeves	40	33	35
Students allowed to wear sunglasses	38	50	46
Wearing of singlets or 'spaghetti-strap' tops is forbidden	57	19	34
Students must not show midriffs	57	26	38
Students must wear shirts for PE or other outdoor activities	69	36	49
None of the above	6	24	17

* percentages calculated based on 217 schools with complete data for uniform/dress code questions.

Accreditation Criterion 6. Clothing:

"The use of sun protective clothing is encouraged (e.g. sleeves and collars)."

Fully attained = 25% Partially attained = 44% Not addressed = 31%

Analysis of this criterion from the baseline questionnaire was complex. In schools which had a uniform, we required the summer uniform to include a shirt with a collar, a shirt with elbow length sleeves or longer, and not to require students to wear shorts or skirts that fell above the knee without giving a more sun protective option. In schools with no uniform, in order to ensure approximately this same level of protection, schools needed to indicate that they banned singlet or spaghetti-strap tops, and required midriffs to be covered.

All schools, both with and without uniforms, were required to indicate that 'students are encouraged to wear shirts with collars and longer sleeves' in order to meet the clothing accreditation criterion.

3.8. Role Modelling

Teachers and staff were encouraged to wear a broad-brimmed, bucket or legionnaire hat during school outdoor activities and breaks during Terms 1 and 4 in 90% of schools. This was the only question that directly addressed role modelling. Schools which answered 'yes' were deemed to have fully attained this criterion, with no measure for partial attainment.

Accreditation Criterion 7. Role Modelling:

"Staff are encouraged to act as role models by practising SunSmart behaviours."

Fully attained = 90% Partially attained = n/a Not addressed = 10%

3.9. Curriculum

The survey explored the frequency of teaching about sun protection in the curriculum. Forty-nine percent of schools indicated that 'an extended session on sun protection was taught as part of the health/PE curriculum' yearly, with a further 24% indicating this was done every second year. Fourteen percent of schools did not respond at all to this health curriculum question. The most common 'other' response given for the frequency of teaching a health/PE

curriculum session on sun protection was *as needed* (4%), while other schools noted that the teaching was *incidental* (2%), *in short sessions* (2%) *for juniors only* (1%) or *less often than every 2 years* (1%).

In addition, schools could indicate each year level that had 'an extended session in sun protection' presented as part of the science curriculum. This was reasonably constant over the year levels Yr 0 to Yr 8, varying within the range of 25-30%.

Accreditation Criterion 8. Curriculum:

"SunSmart education programmes are included in the curriculum at all levels every year."

Fully attained = 55% Partially attained = 21% Not addressed = 23%

The questions regarding curriculum specifically asked if an *extended* session on sun protection was taught as part of either the Science or Health/PE curriculum. This was to differentiate accredited schools from schools that simply gave reminders about putting on hats or using sunscreen; which was covered by the 'Information' criterion. To fully meet this curriculum criterion, schools needed to indicate that the *extended* teaching was to be at *all* levels and taught every year. Most schools attaining this criterion did so through the Health and PE curriculum (48%), and an additional 7% that didn't qualify through Health and PE did so in Science.

3.10. Planning

There was not a single specific question in the baseline survey (or in the SSAP application form) that was related directly to the planning of outdoor events, but several questions addressed related issues.

Accreditation Criterion 9. Planning:

"The sun protection policy is reflected in the planning of all outdoor events (e.g. camps, excursions, sporting events)."

Fully attained = 72% Partially attained = n/a Not addressed = 28%

In order to attain this criterion for the baseline study, schools needed to have indicated that at least *one* of the following was true:

- Sunscreen is available for student use on specific occasions (e.g. PE, school trips)
- Sports days are held before 11am or after school
- Outdoor excursions are scheduled early in the day where possible.

We required an indication with regard to only one of these statements, as evidence of consideration of sun protection in planning outdoor events. It was, therefore, not possible to 'partially attain' this criterion.

3.11. Rescheduling

Schools were asked about the practices by means of which time spent outside between 11am and 3pm in Terms 1 and 4 was minimised. The indicated responses, and percentage of schools responding are listed in Table 5, overleaf.

Table 5. Percentages of schools practicing rescheduling to minimise time spent outside between 11 am -4pm in Terms 1 and 4.

Rescheduling practices indicated by schools:	Schools %
Assemblies are either held indoors, or, if outdoors, are held under shade or before 11am	86
Lunch is eaten in shaded areas ⁷	86
Teachers are requested to use shade for outdoor classes after 11am	25
PE classes are held before 11am	23
Lunch is eaten indoors ⁷	19
Outdoor excursions are scheduled early in the day where possible	17
Children are allowed to stay indoors during breaks on fine days	16
Sports days are held before 11am or after school	14
There is an extended morning tea break and a shortened lunch break	8

In 7% of schools, neither the shaded lunch nor the indoor lunch options were marked.

Accreditation Criterion 10. Rescheduling:

*"Outdoor activities are rescheduled, whenever possible, to minimise time outdoors between 11 am and 4 pm."*⁸

Fully attained = 89% Partially attained = 9% Not addressed = 2%

In order to fully attain this criterion, schools must have indicated that they met at least two of the eight⁵ options listed above with regard to rescheduling. Those which marked only one of the options were deemed to have partially attained this criterion.

3.12. Shade Provision

Schools were asked if they had ever done an assessment of available shade at school, and 68% responded that they had 'no documented assessment of shade provision'. Five percent had done a 'formal shade inventory or shade audit'; while 24% had done a 'less formal, but written, assessment of shade provision'. There was not a formal requirement with regard to the type of assessment undertaken for schools to become accredited.

⁷ For accreditation, 'lunch is eaten indoors' and 'lunch is eaten in shaded areas' were combined into one option (as they are on the SSAP application form); that is, schools needed to indicate a rescheduling practice other than these two in order to attain the rescheduling criterion.

⁸ When the baseline questionnaire was developed in July 2005, this SSAP accreditation criterion was worded to include times from '11am to 3pm'. Subsequently, the guidelines have been changed to include '11am to 4pm', in line with all other Cancer Society of NZ, Health Sponsorship Council and SunSmart recommendations.

When indicating the 'situation at your school with respect to shade', 10% noted that there was 'substantial shade available for both passive and active activities', the most protective option available. Two percent admitted that there was 'inadequate shade for students to use for any activity'. An additional 26% indicated that there was 'some useful shade, but insufficient for most activities', while the majority of schools (60%) indicated 'sufficient existing shade for most students to sit under for passive activity'. This includes areas for eating lunch and sitting in shade for outdoor classroom activities.

The 10% of schools with 'substantial shade' were eliminated from the analysis of the following question regarding shade. Thirty-six percent of the schools without substantial shade noted that they had 'definite plans to increase shade in the next 12 months', while 23% indicated that 'providing shade is not currently a priority area'. Thirty nine percent of schools currently lacking substantial shade indicated that increasing shade 'poses funding concerns' for their school. Twelve percent of schools made other comments about future plans for increasing shade: providing a history of shade provision (4%), outlining specifics of shade planned (3%), indicating that they had definite plans, but longer term than 12 months (3%), or giving reasons that they will not be proceeding with additional shade (1%).

Accreditation Criterion 11. Shade Provision:

"The school has sufficient shade or is working towards increasing the number of trees and shade structures so as to provide adequate shade in the school grounds."

Fully attained = 43% Partially attained = 54% Not addressed = 3%

The 10% of schools that indicated they had 'substantial shade available for both passive and active activities' were deemed to have fully attained this criterion. An additional 33% that indicated they had 'definite plans to increase shade in the next 12 months', were also deemed to have fully met this criterion.

Three percent of all schools had inadequate shade for students to use for any activity, and had no definite plans for increasing shade in the next 12 months. These schools were considered to have 'not addressed' the shade criterion. The majority of schools (54%) had some useful shade, or sufficient shade for passive pursuits like eating lunch, but not enough to protect play equipment or more extensive play areas. We considered that these schools had 'partially attained' the shade criterion, as they lacked definite plans to increase shade in the next 12 months.

3.13. Review

There was no question in the survey instrument dealing directly with the regular 'review' of policy documents. Therefore the assessment of this criterion simply reflects those schools which had a sun protection policy. Schools with policies relating to health and safety are generally required to demonstrate to the *Education Review Office* (ERO) that these policies are on a 3-yearly review cycle (Education Review Office, 2006).

Accreditation Criterion 12. Review:

"The Board of Trustees and Principal review the sun protection policy regularly, including making suggestions or improvements at least once every three years."

Fully attained = 51% Partially attained = n/a Not addressed = 49%

3.14. Frequency distribution of total accreditation scores

No school fully attained all 12 criteria, based on their responses to the survey. Six schools fully attained 11 criteria, and another six fully attained 10. There were 21 schools which attained 3 or fewer criteria. Full details are given in Table 6 below.

Table 6. Frequency of schools achieving total accreditation scores 12-1, based on survey responses.

Total accreditation score	Number of schools fully achieving
12	0
11	6
10	6
9	25
8	41
7	56
6	36
5	29
4	22
3	15
2	5
1	1

3.15. Total accreditation score by region, roll, type & decile

Modelling the total accreditation score was undertaken, using only fully but not partially attained criteria. Variables investigated included region, school roll, institution type, and school decile. Institution type was not significant ($p=0.12$ after controlling for differences in roll, region, and decile) in preliminary modelling and was dropped from further analysis. The small number of composite schools in the sample meant that it was difficult to accurately assess any effect due to this characteristic. Contributing and full primary schools did not differ significantly from one another in total accreditation score.

There was a significant roll, or school size, effect. This is best represented as a linear relationship, with $p=0.01$ and a slope of 0.0024 (95% CI 0.0006 to 0.0041). Larger schools were more likely to have a higher accreditation score, with a 1 point higher score overall corresponding to a roll increase of 425 students.

There was also a significant decile effect, again best represented as a linear relationship, with $p=0.01$ and a slope of 0.118 (95% CI 0.028 to 0.208). Higher decile schools were more likely to have a higher accreditation score with, roughly, a 0.1 increase in score for each decile, or a 1 point difference between decile 1 and decile 10 schools.

Accreditation scores varied significantly by region, with the least squares (adjusted) means of scores in the 'best' region being nearly 3 points higher than in the region with lowest accreditation scores (8.36 vs. 5.52). There was not a clear

pattern of scores being different between the more urban and rural regions, or between North and South Island regions.

3.16. Accreditation score based on written material provided

As noted in section 3.2, policies and other written documentation provided by 144 schools were scored against the twelve minimum accreditation criteria. Schools were given a score of 'not addressed', 'partially attained' or 'attained' for each item, based on the documentation provided. Schools which returned no written material with their survey are not included in the percentages presented in Table 7. Percentages of attainment for all schools, based only on survey responses (a summary of sections 3.2 to 3.13), are included for comparison.

Assessment of the twelve areas was similar to that reported in sections 3.2 to 3.13 for the survey responses, but was necessarily more subjective. In general, the written documentation did not adequately describe the protective practices that principals indicated by their survey response were carried out in schools.

Table 7. Percentage of schools attaining, partially attaining, and not addressing each of 12 criteria of the SSAP, based on survey responses or written documentation provided.

Accreditation Criteria	Survey results (n=242)			Documentation provided (n=144)		
	Attained (%)	Partially attained (%)	Not addressed (%)	Attained (%)	Partially attained (%)	Not addressed (%)
1. Policy	51	25	24	65	15	20
2. Information	81	10	9	50	31	19
3. Hats	30	67	3	45	53	2
4. Play in the Shade	69	11	20	42	15	43
5. Sunscreen	65	20	15	6	82	12
6. Clothing	25	44	31	31	7	62
7. Role Modelling	90	n/a	10	65	1	33
8. Curriculum	55	21	23	9	68	23
9. Planning	72	n/a	28	44	27	28
10. Rescheduling	89	9	2	41	3	56
11. Shade	43	54	3	78	4	18
12. Review	51	n/a	49	33	26	41

Of interest with regard to written material provided by schools are statements that occurred in the documents that perpetuate myths surrounding the issue of sun protection. Several examples are included (offending wording in **bold**). Health promotion staff in the Cancer Society can watch for statements such as these when they evaluate policies, and ensure they are not included.

Inappropriate terms for sunscreens:

- 'every teacher be issued with **suntan lotions** at the commencement of the summer months.'
- '**Suntan lotion** is freely available at school for all children.'

- 'Caregivers will be expected to make sure their children are protected with a waterproof **sunblock**.'
- 'children to have access to **suncream**'

Inappropriate use of 'hot' or 'fine' as dictating when the policy is enforced:

- 'Present shade areas will be maintained, and children will be encouraged to use these areas during **hot** weather.'
- 'Teachers to encourage children to wear a hat during the **hot** months.'
- 'Lunches are to be eaten underneath the shade areas during **fine** weather.'

Excuses provided for not enforcing policy:

- 'there will be though, some days when wearing a hat could cause inconvenience. Staff must set the role model.'
- 'Children will wear hats at break times and for outdoor activities, unless overhead conditions at the time do not warrant this.'
- 'sunscreen must not be applied immediately prior to a swimming lesson or swimming sports as it upsets the chemical balance of the pool causing the water to become cloudy. (Cloudy water=children cannot be seen on the bottom of the pool = pool has to be closed till chemical balance re-established and water clears.)'
- 'Children should wear sun hats provided by parents which are of a style that their parents feel provide adequate sun protection.'

Demonstrating misunderstanding of UV issues:

- 'The long sunlight hours we enjoy in Auckland make sun sense precautions at school particularly necessary.'
- 'Sun protection is a health and safety issue and the school has a responsibility to protect the children from sunburn by: reducing outdoor activities as far as practicable in the summer months'. (*The goal should be to reschedule, not reduce.*)

Demonstrating inappropriate hats are being worn

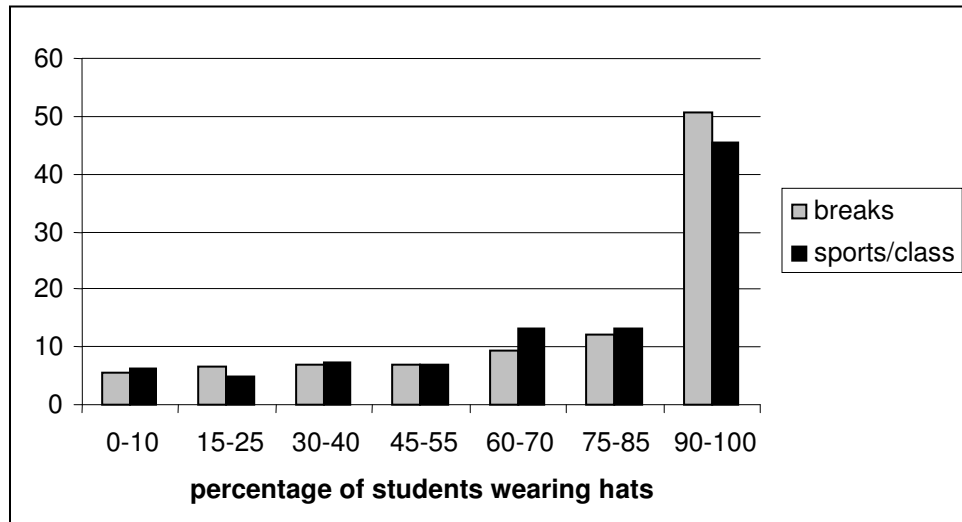
- 'During the hot summer months, all students are to wear sunhats (worn the right way around) while in the sun.' (*the caps that kids can wear the wrong way around are not sunhats!*)

3.17. Survey results not directly related to accreditation

3.17.1. Hat wearing percentages for outdoor activities

As reported in section 3.4, schools were asked to indicate 'on a typical Term 1 or Term 4 day at your school, what percentage of students would wear either a broad brimmed, legionnaire or bucket hat at morning and lunch break?' Fifty-one percent of schools indicated that at least 90% of students would do so. In response to a similar question for 'outdoor sports or other outdoor class activities that take place between 11am and 3pm', 46% schools indicated that at least 90% of students would wear protective hats. Full results for these questions are presented graphically in Figure 2, below.

Figure 2. Percentages of students wearing sun protective hats at morning and lunch break, or during outdoor sports or other outdoor class activities.



3.17.2. Outdoor school swimming

Thirty percent of schools noted that they 'do not use an outdoor pool'. The rest of the responses about outdoor swimming, reported here, relate to the 162 schools that did use outdoor pools. Most (90%) of the outdoor pools were sited within the school grounds. Seventy percent of schools had 'shade near the pool', with 86% indicating that they 'encourage non-swimming students to use available shade'. Relatively few schools (23%) had 'water-resistant sunscreen available for use at the pool', with 22% indicating that they encouraged the use of water-resistant sunscreen and allowed time for its application. In 35% of schools the use of rash shirts was encouraged. Schools were given the opportunity to comment on 'other' practices related to outdoor swimming. In 2% of schools the use of a t-shirt or rash shirt was allowed, but not particularly encouraged. In 1% of schools sunbathing was discouraged.

3.17.3. Adequacy of teaching resources

Schools were asked to indicate whether they had 'adequate educational resources to teach about sun protection'. Forty-two percent indicated that they 'have all the resources we need to teach sun protection effectively.' while 53% indicated that they 'know we can get the resources we need easily'. Twenty-eight percent of schools 'would use more resources if they were available.' while 2% of schools indicated that they 'have no resources for teaching about sun protection'. Schools could indicate more than one response, so the totals add to more than 100%, overall.

The pattern of responses to this question in relation to attainment of the curriculum criterion (criterion number 8) was interesting, as schools which didn't attain this criterion were equally as likely as those which did to indicate that they had all the teaching resources they needed to teach sun protection effectively.

3.17.4. Obstacles to addressing sun protection

A list of obstacles to 'addressing sun protection at school' was presented and the obstacle most commonly selected was the 'cost of shade development' (52%).

Other obstacles frequently encountered included 'cost of sunscreen' (28%), 'limited support by parents' (23%), and limited student cooperation (19%).

3.17.5. Previous contact with SSAP

Fifty-six percent of surveyed schools had heard of the 'SunSmart' Schools Accreditation Programme, with 13% being previous applicants, and 12% previously accredited. In fact, schools which had been accredited previously did attain, on average, nearly one additional accreditation criterion, based on survey responses, but none met all of the criteria based on current accreditation requirements.

3.17.6. Input from health promoters

We asked schools to indicate the source of input to their school regarding sun protection policy and/or procedures at their school. The most common agency used was The Cancer Society of NZ (62%), with local public health nurses (55%) and Health Promoting Schools (34%) also being of assistance. One school mentioned help from a local Iwi Authority. Schools could indicate more than one source of assistance, so the total adds to more than 100%, as a result.

3.17.7. Other comments

The final item in the questionnaire invited schools to 'make any suggestions or comments about how the Cancer Society of NZ could better work with schools to promote sun protection.' Thirty two schools took this opportunity, with some schools providing more than one comment. Responses were grouped into nine themes [number of comments to theme], with most common responses listed first; resources, teaching/curriculum [5], resources, sunscreen/hats [5], Maori/Pacific issues [5], general positive comment [5], resources, shade [3], funding issues [3], education in the community [3], accreditation priorities 'wrong' [2], and responses that were irrelevant to the question asked [3]. Overall, the comments were generally either positive or constructive, with a general respect for what the Cancer Society is attempting to do with regard to sun protection; even though some schools would like more assistance in several areas.

Teaching and curricular resources

Specific examples of the 5 comments relating to teaching and curricular resources included a positive comment to 'keep the posters coming', but primarily asked more of the Cancer Society. One school wanted 'more posters and videos to show children', while another noted that 'units of work prepared for schools are always welcome'. There was a general request to 'have an accredited person come in to talk to children', and a more specific comment that; 'I think we would be better served if the Cancer Society focused on one aspect of cancer per year and provided schools with the necessary resources to deliver worthwhile programmes.'

Sunscreen and hats

There were a variety of comments relating to sunscreen and hats. One school requested that there should be discount 'sunblock' available to schools at the start of each Term 4 and Term 1 for every classroom. Other schools went further, requesting that the Cancer Society 'supply sunscreen' or give 'free sunblock to each SunSmart school'. Again, with regard to hats, there was a plea for handouts: either 'supply sunhats to every new entrant when they begin school' or 'paper sunhats to issue to all children who don't bring their own to school'.

Maori/Pacific Island issues

Schools noted that the issues were different for Maori and Pacific Island communities. Three comments were directed towards resources needing to be developed specifically for Maori: 'more information for students in Te Reo Maori', 'one of our key difficulties is finding resources that are in Te Reo Maori as this school is 100% immersion', and 'need to provide information and approach that is pertinent and relevant to Pacific Island and Maori people'. The other two comments with regard to these groups revealed the perceived significance of sun protection was low in these school communities; 'We are a low decile 70% Maori school and children and parents see our sunsafe policy as unimportant, it is hard to police', and 'our school is 95% Maori and Pacific Island, it is very difficult to get parental cooperation because they don't see the risk for their children'.

General positive comment

The five general positive comments about current or past interaction with the Cancer Society included that the 'Cancer Society rep is often at school', 'current programmes seem to be working effectively' and 'I think they are doing an excellent job in their promotion of SunSmart schools and practices'. One school also noted that they 'have had Undercover Cody visit'⁹.

Shade resources

Comments on shade were more varied, with one school specifically requesting that the Cancer Society 'show us where to go to get lots of \$\$ for shade awnings'. Another school commented that they had applied to the Cancer Society for funding for sun umbrellas but were turned down. The third comment relating specifically to shade noted that 'on sports days we have used Cancer Society gazebos and sunscreen outlets for children and adults present'.

Funding issues

Financial issues not directly related to the resourcing categories of teaching/curriculum, sunscreen/hats, or shade were grouped together as 'funding issues', including one general comment to 'provide funding'. A more specific request was for 'getting sponsorship for either individual school UV monitors or for regional UV monitoring advertised on radio and newspaper'. The final comment relating to funding was that 'The Cancer Society of NZ, like so many other organisations requiring financial assistance, are asking schools to help them with their fundraising. There should be no call on schools to fundraise for groups unless they desire to do so as part of a social studies unit.'

Education in the community

The issue of general education in the community was raised by 3 schools which wanted support for their role. Included was a general comment to 'raise public awareness' and a more detailed observation that 'I feel that you have to educate parents/caregivers firstly – not always target school staff to try to achieve this goal of SunSmart kids'. The remaining education comment shied away from enforcing rules: 'need to convince the children, we have enough to do without becoming SunSmart police at breaks. Encourage the use of education rather than compulsion'.

⁹ Undercover Cody is a regional sun protection programme for 4-10 year olds in the Waikato/Bay of Plenty area, administered by their local division of the Cancer Society of New Zealand. More details available at: http://www.undercovercody.co.nz/links_uc/cody_1_1.php

Accreditation priorities

Two schools made specific comments that the priorities or the process of the SSAP did not suit them. One school commented that: 'We believe we work hard to encourage children to be sunsafe but have become frustrated at being turned down for accreditation due to not having correct wording. Accreditation should be based on observing what's happening.' The other school noted that: 'We only have 10 students. Encouraging them to wear hats is not a problem. Establishing procedures, guidelines, is not a great priority. We just do it!'

Three comments were not related to '*how the Cancer Society could better work with schools to promote sun protection*' and are, therefore, not reported here.

4. Conclusions and recommendations

In this section we discuss the findings of the baseline study, and the implications for schools, and for the Cancer Society of NZ. The baseline results showed clearly that a comprehensive approach to sun protection in NZ primary schools is lacking. However, if schools take advantage of the provisions made through the SSAP, it is likely that progress can be made towards addressing this deficiency.

4.1. Methods

One limitation of this study is that, due to financial constraints, it was conducted completely by mail. We did not make direct observations at schools, and could not verify statements about the sun protection practices carried out at schools participating in the study. It was primarily a survey of school principals, as they were deemed to have been most likely to be able to provide an overall perspective of the various issues. A survey carried out in Western Australia in 1995 as part of the baseline study for the Kidskin Programme found that principals had a tendency to overestimate the prevalence of hat use or percentage of shade coverage in the school grounds, when compared with direct measurement by aerial photography and video taping (Milne et al., 1999b). In a more recent study of 27 NZ primary and intermediate schools that included week long on-site visits, observed sun protective behaviour generally was not as protective as that described in documentation provided by schools with sun protective policies (C. Wright, personal communication).

However, comparable survey methods for assessing sun protective policies and practices in primary schools have been used in Victoria (Dobbinson et al., 2000), and New South Wales (Schofield et al., 1997), and will allow comparisons with baseline data if the survey is repeated in the future.

4.2. Sun protection policy

Just over half of surveyed schools (51%) met the accreditation criterion relating to sun protection policy based on their response to the question: 'Does your school have a written sun protection policy?' This is lower than in another recent study where 63% of visited NZ primary and intermediate schools had a sun protection policy (C. Wright, personal communication). Additionally, when documentation from these 123 schools was examined further, none of those fully met the SSAP minimum requirements for a sun protection policy. A large number of schools (43) in the baseline study indicated that their policy on sun protection was under development. The SSAP is in a good position to assist with the development of policy in schools which have not fully met the criteria, and also those in the policy development phase. The inclusion of the sample policy on the SSAP website will be helpful to these schools if it is drawn to their attention.

When the written documentation was initially examined in relation to the policy criterion, one of the requirements for attainment was that the supplied paperwork be clearly designated a policy. Subsequent development of the SSAP has clarified that the programme will require documentation that outlines all of the requirements of the SSAP, but that it need not be a 'policy'. Some schools may have procedural guidelines or supporting documents to the health and safety policy. In terms of the review process, the ERO require evidence of a 3-yearly self-review of both policy and procedures (Education Review Office, 2006). Ideally, the BOT and management should be involved in drafting documents to support the accreditation process.

The sample sun protection policy on the SSAP website is a comprehensive one. There could be more acknowledgement on the website that schools may not be able to adopt such a policy immediately. Involving parents and students in the policy development process is important to secure their support and improve their understanding of the need for sun protection strategies. Actually having any sun protection policy expresses a school's commitment to sun protection. The document adopted by a school may, in fact, be one that is deficient in several areas, with regard to accreditation, but still represents a step forward for that particular school. The review process (addressed further in section 4.13) can be helpful in encouraging schools to progress towards accreditation, even if they are currently not close to meeting all criteria.

It also should be noted that in some schools, particular staff or even parent groups may have initiated, or been struggling to implement sun protection practices. In this case, the process of enacting a policy could be one way to help with compliance and informing the wider school community. Again, the comprehensiveness of the policy may be less than the accreditation criteria, at least initially, but this should not dissuade interested parties from beginning the process.

4.3. Information

A high percentage of schools (81%) attained the information criterion, as schools generally reported using a wide variety of methods for conveying information about sun protection.

Consistent information and support to students from family, the school, and the wider community is helpful in reinforcing the sun protection message. While some children may be encouraged in sun protection behaviours by their parents, the reverse may also be true, with students taking messages and sun protective practices home to their families. Additionally, messages in the community, for example through the media campaigns undertaken by the SunSmart partnership, may reinforce the messages received at school. Schools may be able to make use of members of the community with personal health problems relating to excess UV radiation exposure, and who may be willing to discuss the issue with groups of students.

Only three of the 242 schools surveyed displayed the Ultraviolet Index (UVI) in any way. Daily predictions and measurements of UVI are provided free by the National Institute of Water and Atmospheric Research (NIWA), along with behavioural recommendations.¹⁰ It is hoped that increased publicity around the UVI, and availability of smaller, more affordable meters for real-time UVI display, will increase its use in the future. The educational value of these meters can be extended beyond sun protection applications into various aspects of the science and mathematics curricula.

It is pertinent to note here that schools which have UVI display meters should not use them to determine whether hats should be worn during a particular lunch time, for example. The SunSmart guidelines must be enforced as a blanket policy throughout Terms 4 and 1 for accreditation to be granted.

¹⁰ www.niwascience.co.nz/services/uvozone

4.4. Hats

Less than one third of schools fully attained the accreditation criterion relating to hats. Schools most often failed to meet this criterion by allowing unsuitable hats, including caps or 'any hat'. Since the administration of the baseline survey, the guidelines regarding hats for accreditation have been incorporated into a document for schools. (Cancer Society of New Zealand, 2006), and clearly state that the requirement is for students to wear a broad-brimmed hat with a 7.5cm brim, a bucket hat with a 6cm brim that sits low on the head, or a legionnaire style hat.

The divisional offices of the Cancer Society can help schools obtain access to suitable hats, and continue to work with suppliers to provide hats that meet SSAP specifications. The continued availability of Cancer Society of NZ endorsed broad-brimmed hats through a variety of retail outlets makes an important contribution.

4.5. Play in the shade

More than half of surveyed schools (69%) met the criterion for requiring students to play in the shade if they were not wearing a hat while outside during Terms 4 and 1. Schools were not denied accreditation for this criterion if they allowed less protective hat options. Of course, schools with inadequate shade resources will have difficulty making this work, in practice, as the 'play in the shade' guidelines can seem to conflict with schools encouraging students to engage in physical activity. This highlights the need for schools to work towards improving shade provision within their grounds.

4.6. Sunscreen

Many schools were denied full attainment of the sunscreen criterion because of the use of sunscreens that were not SPF 30+. Nearly one third of schools identified the cost of sunscreen as an obstacle to addressing the issue of sun protection at school, and some schools noted that they would use whatever sunscreens they are given. The Cancer Society should continue to advocate for SPF 30+ sunscreens in all of its work with schools.

As noted in section 3.6, the requirement in Australian SunSmart accreditation programmes to allow time for the application of sunscreen before breaks has been dropped from the NZ programme. Feedback provided by school principals to Cancer Society National Office staff in a cluster group meeting, and through regional Cancer Society health promotion staff deemed the application-time requirement to be 'impractical' (personal communication J. Galtry). The fact remains that sunscreen is more effective if time is given for application 20 minutes before going out into the sun. This reality should be retained in the documentation which is sent to schools so that school staff are reminded of it. Some schools may want to schedule a group reading time or another activity that can happen concurrently with sunscreen application in the time directly prior to breaks in Terms 1 and 4.

4.7. Clothing

It was apparently difficult for schools to meet the clothing criterion, as only 25% fully attained this measure. Uniform and non-uniform schools face different issues with regard to this criterion. In schools with a uniform (37% of schools in our survey) the students are generally required to wear a shirt that has a collar, but seldom had an option of a shirt with an elbow length sleeve or longer. In roughly one third of these schools, students were also required to wear short skirts or

trousers without the option of a more protective $\frac{3}{4}$ or long trouser or skirt. It is desirable that these schools examine their uniform policies to remove barriers to more sun protective uniform options, particularly for students with fair skin as the clothing policy places them at greater risk of damage due to overexposure to UV radiation. Current fashion for longer, baggier clothing is an advantage in terms of sun protection.

In non-uniform schools, students generally had more options for sun protective clothing, but additionally more freedom to make non-protective clothing choices. Students in these schools were much more likely to be able to show their midriffs or shoulders, and less likely to be required to wear a shirt for PE or other outdoor activities. Clearly, these issues could be addressed through a dress policy as well as, or in addition to, their inclusion in a sun protection policy.

Clothing used in sporting activities is especially important, as students may spend a considerable amount of time outdoors playing sport, and schools may have difficulty rescheduling all sport to outside of peak UV radiation times. Students should be required to wear a shirt for all outdoor activities. If a sports uniform is specified, then collars are very important; as are practical, protective hat styles.

4.8. Role modeling

Role modeling is a potentially vital element with respect to educating both students and parents, as well as helping to protect staff from excess sun exposure. This criterion was met in most of the schools surveyed, and was also included in two thirds of written documentation provided by schools. Clearly the challenge for schools is to ensure that role modeling is part of the day-to-day culture of the school. Special events such as sports days, school fairs and field trips provide additional opportunities for schools staff to demonstrate sun protective practices and to provide role models for the community.

4.9. Curriculum

Just over half of surveyed schools attained the curriculum criterion by indicating they taught an extended session on sun protection yearly at every level, in either science or health/PE. The curriculum criterion as we assessed it could be interpreted as being more demanding than the requirement in the SSAP to incorporate sun protection education at all year levels when 'delivering the curriculum'. Our inclusion of the 'extended session' wording in the baseline survey was, as indicated in section 3.9, to distinguish it from brief, incidental reminders. It is hoped that staff completing the SSAP application form will not consider that they would meet 'curriculum' requirements simply through issuing brief reminders regarding sun protection.

Many of the schools which partially met this criterion taught sun protection less frequently than at every year level. This may, at least in part, be due to a lack of resources, and the fact that 28% of schools indicated that they would use more resources if these were available shows a clear need for additional curriculum development.

The World Health Organisation notes that teachers may be more willing to participate in sun protection programmes if teaching resources are available that are clearly linked to the curriculum (World Health Organisation, 2003). The Cancer Society of NZ is developing resources for Years 1 & 2 and 3 & 4 (in the final stages of development); and Years 7 & 8 (to be completed during term 3, 2006). Curriculum units for Years 5 & 6 were developed in 2005.

In her report on sun protection in NZ educational settings, Galtry noted that there is anecdotal evidence that some principals and teachers do not regard sun protection as an important issue, which may be exacerbated by the oft-noted 'crowded curriculum' in NZ schools (Galtry, 2004). Teachers are pressured to accomplish the core curriculum first, and may not address issues they see as less important.

Developing sun protection teaching resources that address the issue of sun protection from a variety of angles may be one way to overcome this perceived barrier. Resources which work with graphical representation of the UVI throughout the day, or year, for example, may help give students a mathematical understanding of this useful health promotion tool. Studies in environmental science about the importance of trees for human use can include the use of shade for sun protection. Overall commitment to helping students develop positive attitudes towards risk reduction and to promote responsible decision making in a variety of areas related to general health and well being is important. Teachers may address such diverse subjects as hygiene, road safety, and sun protection with these issues in mind. Reinforcement of the sun protection message from other disciplines can complement the content of the health curriculum.

4.10. Planning

Assessing the planning criterion was problematic, as there is no question specific to planning in the SSAP application form. Our assessment, as stated in section 3.10, drew from 3 questions. Nearly three quarters of surveyed schools met the planning criterion, as we assessed it. This is encouraging, as extended outings such as camps and excursions offer the potential for longer periods of sun exposure than would occur during a typical school day. Schools are required under the Health and Safety in Employment Act 1992 to identify hazards for staff, and to take steps to eliminate, isolate and/or minimise them. In addition, staff overseeing outdoor programmes are required to use appropriate safety equipment and clothing (Ministry of Education, 2003), which could include wearing sun protective clothing, hats and sunscreen. These requirements undoubtedly assist the Cancer Society in encouraging schools to plan outdoor events with sun protection in mind.

Some local Cancer Society Divisions have initiated schemes where they make portable shade structures available for outdoor events, and this will further assist schools as they plan for outdoor events.

4.11. Rescheduling

As noted in section 3.11, the SSAP criterion for rescheduling has been reworded since baseline survey data collection. Times outdoors were previously noted as 'between 11am and 3pm', but have been altered to 'between 11am and 4pm'. However, it is unlikely that this change would have affected the response to the question relating to rescheduling, as schools are seldom responsible for students after 3pm. The change was made in order to standardise the messages given to schools with those presented to the general public.

The disclaimer 'whenever possible' was included in the criterion to assist schools in planning outdoor activities with sun protection in mind, but not to completely eliminate them, which would be unrealistic. In fact, schedule changes may be difficult for schools to implement, as many would not have the resources to accommodate all the outdoor activities undertaken on the school grounds in the time before 11am during Terms 1 and 4. However, it is worthwhile that schools consider some rescheduling. It is a low-cost option, compared with shade

construction; and can enable vigorous outdoor physical activity without compromising sun protection. An extension of the morning tea break and shortening of the noon break in Terms 1 and 4 is another relatively easy way to reduce the risk of excess student UV radiation exposure at times of peak risk, and at no cost.

4.12. Shade provision

The shade criterion was attained fully by less than half of schools. In fact, even the attainment of this criterion does not signify that schools have good shade resources, but that if they don't, they had indicated they had definite plans to increase shade in the next 12 months. This is another criterion that has been altered since the baseline survey was conducted. The revised time frame for increasing shade that the SSAP is asking schools to work towards is 3 years, instead of 12 months. It was acknowledged that it is unrealistic to expect schools to plan and implement additional shade in a 12 month period, especially considering that local fundraising is often involved to meet shortfalls in finance through Ministry of Education allowances. Procedures for SSAP three yearly review are yet to be finalised, but part of meeting the requirements of the review will be that schools have made progress with regard to shade provision within the three year review period.

Some schools may actually have shade available on their grounds that they do not presently use as efficiently as possible (Jopson & Reeder, 2004). In the baseline study 68% of schools had no documented assessment of shade provision. Health promotion staff can assist schools to document all current shade resources, look at patterns of use, and explore ways to improve the utilisation of current shade. Guidelines to assist with this are available in the publication *UnderCover* (Greenwood et al., 2000), which is available through the Cancer Society website.¹¹ A formally completed shade audit or shade inventory may also assist schools applying to funding bodies for grants to enable shade construction.

The most common obstacle to addressing sun protection which schools identified was the cost of shade development. The construction of permanent shade structures can be very expensive. The Cancer Society of NZ has an ongoing role to play in advocating to the Ministry of Education on behalf of schools to encourage the inclusion of shade in the design of new school buildings, and in renovation and upgrades of existing buildings and grounds; and to provide adequate funding. Information on shading properties of various materials and trees and on effective and affordable shade structure designs is needed by schools. Architectural investigation into shade provided by 29 different shade structures on NZ primary school grounds in 2001 (McKay, 2004) resulted in specific guidelines being produced for the Cancer Society, which are available on the SunSmart website.¹² There is also some information in the *UnderCover* publication mentioned above, and the primary author of *UnderCover* is developing a more interactive computer-based resource, *Webshade*, which may be a useful planning tool for schools.

While shade development is often costly, it can be incorporated into a broader environmental programme. For example, tree planting can be promoted not only as a means of improving shade, but also of enhancing the school surroundings. Exploring options such as 'warm shade' provided by a structure with a

¹¹ <http://www.cancernz.org.nz/HealthPromotion/SkinCancerControl/Shade/>

¹² <http://www.sunsmart.co.nz/sunschools.asp>

polycarbonate or laminated glass that provides both rain and UV protection, and also transmits the warmth of the sun may be an option for many NZ schools.

Fundraising for shade can also foster parental participation and provide students with practical experience in working towards shared goals.

4.13. Review

Just over half of schools met the review criterion; all schools with sun protection policies. The review that is required by ERO was deemed to be adequate for this baseline study. However, the review criterion will be able to be more rigorously assessed once the SSAP has been running for more than 3 years, and SSAP-specific review procedures have been developed. Schools that are accredited will be required to show that they have examined the policy at the BOT level, and in consultation with their school community, and made suggestions and improvements at least once every 3 years. As mentioned above (section 4.12), this will include the implementation of any plans to increase available shade in the school grounds.

Additionally, the review criterion is important for schools that may not have been accredited through the SSAP. Health promotion staff can work with schools to encourage them along a path towards accreditation, regardless of how many criteria they may have attained. As mentioned in section 4.2 above, some school communities may initially come to the conclusion that accreditation is not important for them, but that they will enforce a somewhat lower degree of sun protective practices, which is acceptable to their community. The review process will help school communities to assess their policy at least once every three years, and perhaps increase the level of protection expected.

4.14. Outdoor swimming

While there is no specific requirement in the SSAP for regulations around the use of outdoor school pools, schools which use such pools can incorporate criteria 5 (Sunscreen), 6 (Clothing), 7 (Role modeling), 9 (Planning), 10 (Rescheduling) and 11 (Shade) into developing procedures around pool use. In the baseline survey, only 23% of schools which used outdoor pools had water resistant sunscreen available for use at the pool. Rash shirt use was encouraged in 35% of these schools. There is clearly room for improvement in both areas, and health promotion staff can work with schools to encourage changes.

4.15. Obstacles to addressing sun protection

When schools were asked to identify obstacles to addressing sun protection at school, the most commonly identified were the cost of shade development and the cost of sunscreen, which were discussed in sections 4.12 and 4.6 above. Resource allocation is an ongoing problem at schools. Real needs for library books, staff training, and cleaning supplies may override purchase of sunscreen and planning for shade structures when budgets are tight and sun protection is seen as a relatively low priority, or indeed 'someone else's problem'. However, it is important for schools to be encouraged to start with small, feasible changes, and not wait until adequate resources become available to address all facets of sun protection simultaneously.

Other obstacles frequently indicated included 'limited support by parents' and 'limited student cooperation'. The approach to addressing these concerns is clearly broad, and involves the national media campaigns of the Cancer Society and the SunSmart partnership. A shift in attitudes away from tanning and towards

sun protection is needed, but this will take time and involve a concerted, multi-pronged approach, of which the SSAP is a vital part. These obstacles also overlap with the issue of ethnicity and sun protection, which is discussed below.

4.15.1. Ethnicity

There was a perception among some of the surveyed schools that the Maori and Pacific Island communities did not see sun protection as relevant. However, it is important to note that the issue is more one of skin type than of ethnicity, with people who self-identify as Maori self-reporting almost the full spectrum of skin types (Reeder, 2001). In a study of NZ primary and intermediate age school children carried out in 2004-05, students who self-identified as Maori or Pacific Island were assessed by trained researchers to have Fitzpatrick skin types ranging from Type II to Type V (C. Wright, unpublished data). Skin type II is described as 'very sun sensitive, burns easily, tans minimally' (Fitzpatrick, 1988).

It is true that fair-skinned people have more reason for concern about over-exposure to the sun, as a higher level of melanin in the skin of darker people reduces their risk of common skin cancers. However, though the incidence is lower, cancers that do occur in darker skinned people are often detected at a later, more dangerous, stage (Byrd et al., 2004), (Hu et al., 2006). Furthermore, the risk of eye damage, premature ageing of the skin and immunosuppression is independent of skin colour.

The Cancer Society has a role to play in helping schools with high percentages of Maori and Pacific Island students to see that protection against excess solar UV radiation during terms 1 and 4 is an issue that they should not ignore. The inclusion of some Maori language resources, as specifically requested by 3 schools in the baseline survey is one way that the Cancer Society can assist these communities. Additionally, comments relating to the families of Maori and Pacific Island students point to the need for general media campaigns to address the issues for these populations, including obtaining adequate levels of sunlight exposure in order to maintain adequate Vitamin D¹³ levels through the winter months.

4.15.2. Knowledge of UV radiation

An obstacle we identified through the examination of sun protection policies and other documentation sent in by schools is the sometimes inadequate general knowledge about UV radiation among school management and BOTs. For example, it appears that there is some misunderstanding about the relations between temperature and UV radiation levels, as demonstrated in text of sun protection policies which specifically mentioned that shade use would be encouraged in 'hot' weather, or that hat use would be encouraged during the 'hot' months. Even the statement that lunches were to be eaten under shade in 'fine' weather shows a lack of understanding of the prime importance that the time of day and season of the year should have in influencing which behaviours should be recommended. The Cancer Society can take steps to assist school staff in understanding these issues more completely.

4.16. Contact with SSAP and health promoters

It was encouraging to see that 62% of schools had previously received assistance from the Cancer Society regarding sun protection policy and/or procedures, and

¹³ www.sunsmart.co.nz/sunvitamin.asp

also that there is support in some areas from Health Promoting Schools and local public health nurses. The SSAP also had a reasonable level of recognition, with more than half of schools having previously heard of the programme. The ability of local Divisions to meet the needs of schools should be enhanced by the SunSmart Schools website.

4.17. Regional variation

As noted in section 3.15 there were regional differences in the numbers of criteria 'fully attained'. Many factors may come into play to account for these differences, including the resources available to the local Cancer Society Divisions, perceived risk in the community (related to predominant skin type), general weather statistics (including temperature and wind patterns) and socioeconomic characteristics.

The structure of the Cancer Society, with Divisions dependent on local fundraising efforts for the delivery of local programmes, means that some Divisions will struggle to liaise with individual schools to help implement the SSAP fully in their areas.

4.18. Accreditation priorities

Two schools made specific comments that the SSAP paperwork was more of an obstacle for them than the day-to-day encouragement of sun protective practices amongst their students, and that observation would be a better method of evaluation for inclusion in the programme. Self-report by schools does have disadvantages when compared to a programme which could include on-site observation for accreditation. Unfortunately, for routine use in the programme, this is unrealistic in terms of resources for the Cancer Society of New Zealand.

The SSAP programme is voluntary, so schools are not likely to come into the programme unless they are concerned about sun protection, perhaps because of pressure from within their school community. Many schools will not have the desire for full accreditation, but this does not mean that the programme will be of no use to them. However, if accreditation is the goal, then practices and policy will need to be modified to match the requirements of the programme. Schools are unlikely to write voluntary policy that they will subsequently have difficulty meeting. The three yearly self-review process should help schools determine if they are in fact following the guidelines they have set for themselves through their sun protection policies.

4.19. Future programme evaluation

The commissioning of the baseline study, reported here, is a preliminary step in evaluating the SSAP over time. It is recommended that an initial follow-up study using similar methods should be carried out in 2008 or 2009.

Additionally, regular monitoring of the SSAP will be possible through the 'Monitoring and Evaluation database' which was initiated with the SunSmart Schools website. That database incorporates information about all schools which have applied for and/or achieved accreditation. It will also enable the generation of reports on other aspects of the SSAP. For example, staff will be able to identify the criteria least likely to be met by schools which apply for the programme but do not achieve accreditation.

Results available through both the baseline study/follow-up, and the 'Monitoring and Evaluation database' offer very useful, but crude measurements on the

percentage of schools achieving certain criteria, based on self-report. Similar SunSmart Schools programmes run in Australia and throughout the world have also included the collection of observational data. For example, the 'Kidskin' project in Western Australia was evaluated by videotaping children in selected school play areas during lunch time to assess the proportion of children wearing various types of hats; through use of aerial photographs of schools to estimate the proportion of shade in play areas available to children at lunchtime; and through the use of polysulphone film badges to measure the amount of UV-B exposure individual students received during one lunch period (Milne et al., 1999a). Specific technologies employed in relation to the current programme may differ, but on-site objective measurements would enable a much more specific evaluation of behavioural and environmental changes occurring through the implementation of the SSAP.

Further studies are also warranted to evaluate the SSAP in a qualitative way. Periodic interviews with school principals, teachers, members of BOTs and health promotion staff should assess how successfully the programme is being delivered; how high is the awareness of the programme; whether the programme is valued; and how the programme could be improved.

4.20. Support and Resources

Current funding for the SSAP is primarily through the SunSmart Partnership at the national level, and through the Cancer Society Divisions at the regional level. As indicated above (section 4.17), there will be variability throughout the Divisions in their ability to deliver the SSAP. A suggested means of overcoming this in some regions may be to obtain more active involvement of regional Public Health Units to assist with programme delivery. In fact, the *New Zealand Cancer Control Strategy; Action Plan 2005-2010* identifies several milestones for measuring achievement towards the objective of reducing excess exposure to UVR among children. They include 'increased investment by national organisations' and 'sun safety included in all DHB public health plans'(Ministry of Health, 2005). Clearly, progress towards these milestones will assist the implementation of the SSAP across New Zealand.

4.21. General conclusions

Sun protection for school age children is paramount for reducing the skin cancer burden in NZ. The World Health Organisation advocates recognising each school's effort through an award system, similar to the SSAP (World Health Organisation, 2003). This multi-faceted approach is required to address school policy and practices, education of parents and caregivers involved with the schools, and the teaching in the classroom.

Most NZ primary schools are addressing the issue of sun protection in some way, but there is considerable room for improvement in many schools, particularly in breadth of approach and in development of sun protection policy. The SSAP is well placed to assist schools, since there is strength in the organisation of the programme through a national framework with regional support from health promotion staff.

The extent to which particular schools successfully address sun protection is ultimately dependent on the school management and community. However, the SSAP has been designed to both encourage and enable schools to move along the continuum towards accreditation. Evaluation of the SSAP in several years' time will show whether or not the programme was able to meet these needs for NZ primary schools.

The issue of capacity within the Cancer Society to provide sufficient support to schools may also need to be addressed through continued advocacy in support of the programme, and skin cancer prevention in general, to the Ministries of Health and of Education.

Specific recommendations to the Cancer Society for the SSAP are included in the Executive Summary at the front of this report. (p.ii)

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Appendix A

Schools Baseline Questionnaire

*If your school is a composite (area) school,
please answer the questions
in relation to your **primary** students.

All the following questions are related to the time between
11am and 3pm in Terms 1 and 4.

1. Is hat wearing enforced at your school?

- 1 Yes – enforced
- 2 No – not enforced, but encouraged
- 3 No – neither enforced nor encouraged

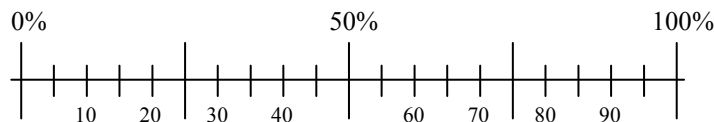
2. Which types of hats do your students wear? *(please tick all that apply)*

- 1 Broad-brimmed hats (at least 7.5 cm brim)
- 2 Legionnaire hats (cap with flaps)
- 3 Bucket hats (at least 6 cm brim and deep crown)
- 4 Bucket hats (less than 6 cm brim)
- 5 Any hat
- 6 Other (please specify type or types _____)

3. On a typical Term 1 or Term 4 day at your school, what percentage of students would wear either a broad brimmed, legionnaire or bucket hat:

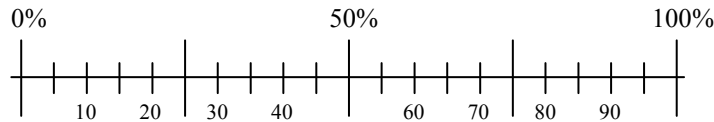
a. at morning and lunch break?

(please estimate by marking with a cross somewhere on the following scale)



b. during outdoor sports or other outdoor class activities that take place between 11am and 3pm?

(please estimate by marking with a cross somewhere on the following scale)



4. What are the consequences for a student not wearing a hat when outside?

(please tick all that apply)

- 1 They must play in the shade
- 2 They must play indoors
- 3 They must wear a hat from school spare hats
- 4 No restriction or consequence
- 5 Other (please specify _____)

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1-4

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5

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8-9

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10-11

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14-16

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17-19

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20-21

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22-23

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24-25

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5. Does your school encourage teachers/staff to wear broad-brimmed, bucket or legionnaire hats during school outdoor activities and breaks during Terms 1 and 4?
 1 Yes
 2 No 26
6. Which of the following best describes the clothing that students wear to school?
 1 We have a school uniform (*go to Q 7*)
 2 We have a dress code, but no school uniform (*go to Q 8*) 27
7. Which of the following are true of your SUMMER school uniform?
(please tick all that apply)
- 1 Includes a shirt with collar (polo-type shirt) 28-29
 2 Includes a shirt with elbow length sleeves or longer
 3 Male students are required to wear shorts that fall above the knee 30-31
 4 Female students are required to wear shorts or skirts that fall above the knee
 5 Other uniform policy that affects sun protection (please specify) 32-33

8. Which of the following clothing expectations or dress code options are true?
(please tick all that apply)
- 1 Students are encouraged to wear shirts with collars and longer sleeves 34-35
 2 Students are allowed to wear sunglasses
 3 Wearing of singlets or 'spaghetti-strap' tops is forbidden
 4 Students must not show midriffs 36-37
 5 Students must wear shirts for PE or other outdoor activities
 6 None of the above 38-39
9. What happens at your school regarding the use of sunscreen?
(please tick all that apply)
- 1 Students are actively encouraged to use sunscreen 40-41
 2 Sunscreen is available for students in all classrooms
 3 Sunscreen is available for student use on specific occasions
 (eg. PE, school trips)
 4 Sunscreen is available at various points around the school
 (eg. school office) 42-43
 5 Time is given for the application of sunscreen before the lunch break
 6 Parents are encouraged to provide sunscreen 44-45
 7 Sunscreen is not supplied 46
10. Which type of sunscreen is available at school?
- 1 SPF 30+ 47-48
 2 SPF 15
 3 Other (please specify _____)
 4 No sunscreen available at school 49-50
 51

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11. Which of the following practices does your school endeavour to do to minimise time spent outside between 11am – 3pm in Terms 1 and 4? *(please tick all that apply)*

- 1 Assemblies are held indoors, or if outdoors are held under shade or before 11am
- 2 PE classes are held before 11am
- 3 Teachers are requested to use shade for outdoor classes after 11am
- 4 Sports days are held before 11am or after school
- 5 Outdoor excursions are scheduled early in the day where possible
- 6 Lunch is eaten indoors
- 7 Lunch is eaten in shaded areas
- 8 Children are allowed to stay indoors during breaks on fine days
- 9 There is an extended morning tea and shortened lunch break
- 10 Other (please specify _____)

<input type="checkbox"/>	<input type="checkbox"/>	52-53
<input type="checkbox"/>	<input type="checkbox"/>	54-55
<input type="checkbox"/>	<input type="checkbox"/>	56-57
<input type="checkbox"/>	<input type="checkbox"/>	58-59
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		60-62

12. With respect to **outdoor** school swimming, please tick all that apply.

- 1 We do not use an outdoor pool *(continue to Q 13)*
- 2 We use an outdoor pool **off** site
- 3 We use an outdoor pool **on** site
- 4 There is shade near the pool
- 5 We encourage non-swimming students to use available shade
- 6 We have water-resistant sunscreen available for use at the pool
- 7 We encourage the use of water-resistant sunscreen and allow time for its application
- 8 We encourage the use of rash shirts
- 9 Other (please specify _____)

<input type="checkbox"/>	<input type="checkbox"/>	63-64
<input type="checkbox"/>	<input type="checkbox"/>	65-66
<input type="checkbox"/>	<input type="checkbox"/>	67-68
<input type="checkbox"/>	<input type="checkbox"/>	69-70
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		71-72

13. Has your school ever done an assessment of available shade at school?

- 1 Yes, a formal shade inventory or shade audit*
- 2 Yes, a less formal, but written, assessment of shade provision
- 3 No documented assessment of shade provision
- 4 Other (please specify _____)

<input type="checkbox"/>	<input type="checkbox"/>	73-74
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		75-77

14. Considering trees, covered or sheltered areas and portable shade, describe the situation at your school with respect to shade. *(choose only ONE answer)*

- 1 Inadequate shade for students to use for any activity
- 2 Some useful shade but insufficient for most activities
- 3 Sufficient existing shade for most students to sit under for passive activity
(eg; eating lunch, outdoor classroom activities)
- 4 Substantial shade available for both passive and active activities

<input type="checkbox"/>	<input type="checkbox"/>	78-79
<input type="checkbox"/>	<input type="checkbox"/>	80-81

15. What future plans does your school have for increasing shade?

- 1 We have definite plans to increase shade in the next 12 months
- 2 Providing shade is not currently a priority area
- 3 Increasing shade poses funding concerns for our school
- 4 Other (please specify _____)

<input type="checkbox"/>	<input type="checkbox"/>	82-83
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		84-86

* As defined in the publication 'Undercover', available through the Cancer Society of New Zealand Inc.

16. Which of the following are parents/caregivers told about sun protection at your school at enrolment? *(please tick all that apply)*

- 1 Requirement for children to wear hats when outside
- 2 Encouragement to wear clothing that protects the skin from the sun
- 3 Encouragement to supply their children with sunscreen to take to school
- 4 Encouragement for adults to practice sun protective behaviours when involved with the school
- 5 No information is given
- 6 Other (please specify _____)

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<input type="checkbox"/>	<input type="checkbox"/>	87-88
<input type="checkbox"/>	<input type="checkbox"/>	89-90
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		91-93

17. How are messages about sun protection conveyed at school?

(please tick all that apply)

Reminders about sun protection are given

- 1 in **assemblies** at the beginning of Terms 1 and 4
- 2 in **assemblies** regularly during Terms 1 and 4
- 3 in **newsletters** once or twice a year
- 4 in **newsletters** regularly in Terms 1 and 4
- 5 in **class** regularly during Terms 1 and 4
- 6 at **staff** meetings
- 7 Posters about sun protection are displayed around the school
- 8 The Ultraviolet index (UVI) is measured at school and displayed on a monitor*
- 9 The maximum predicted clear sky UVI is displayed**

<input type="checkbox"/>	<input type="checkbox"/>	94-95
<input type="checkbox"/>	<input type="checkbox"/>	96-97
<input type="checkbox"/>	<input type="checkbox"/>	98-99
<input type="checkbox"/>	<input type="checkbox"/>	100-101
<input type="checkbox"/>		102

18. An extended session on sun protection is taught as part of the **health/PE** curriculum

- 1 yearly
- 2 every second year
- 3 other (please specify _____)

<input type="checkbox"/>	<input type="checkbox"/>	103-104
<input type="checkbox"/>	<input type="checkbox"/>	105-106

19. An extended session in sun protection is taught as part of the **science** curriculum

(please tick all years taught)

- Yr 0 Yr 1 Yr 2
- Yr 3 Yr 4 Yr 5
- Yr 6 Yr 7 Yr 8

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	107-115
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

20. Does your school have adequate educational resources to teach about sun protection?

(please tick all that apply)

- 1 We have all the resources we need to teach sun protection effectively
- 2 We know we can get the resources we need easily
- 3 We would use more resources if they were available
- 4 We have no resources for teaching about sun protection

<input type="checkbox"/>	<input type="checkbox"/>	116-117
<input type="checkbox"/>	<input type="checkbox"/>	118-119

21. Does your school have a written sun protection policy?

- 1 Yes *(please attach a copy of your policy)*
- 2 No, but one is under development
- 3 No, but we have a section on sun protection in our Health and Safety Policy *(please attach a copy of your policy)*
- 4 No, but we have written guidelines regarding sun protection *(please attach any relevant guidelines)*

<input type="checkbox"/>	120
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* These monitors are available through the National Institute of Water and Atmospheric Research (NIWA)

** As published in most major daily newspapers

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22. Is sun protection mentioned in your school prospectus?

- 1 No
- 2 Yes *(please attach copies of appropriate page or pages)*
- 3 Don't have a school prospectus

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23. What obstacles (if any) has your school encountered in addressing sun protection at school *(please tick all that apply)*

- 1 Limited support by principal
- 2 Limited support by teachers/staff
- 3 Limited support by parents
- 4 Limited student cooperation
- 5 Cost of sunscreen
- 6 Cost of shade development
- 7 Insufficient information on policy content
- 8 Not a priority for Board of Trustees
- 9 Other (please specify _____)

122-123

124-125

126-127

128-129

130-131

24. Has your school ever heard of the 'SunSmart' Schools Accreditation Programme?

- 1 Yes
- 2 No

132

25. Has your school ever applied for 'SunSmart' Schools Accreditation?

- 1 Yes
- 2 No

133

26. Has your school been granted 'SunSmart' Schools Accreditation?

- 1 Yes
- 2 No

134

27. Has your school had input from any of the following regarding sun protection policy and/or procedures at your school?

- Health Promoting Schools 1 Yes 2 No
- Local public health nurses 1 Yes 2 No
- The Cancer Society of NZ 1 Yes 2 No
- Other (please specify _____) 1 Yes 2 No

135-136

137-139

Would you like to make any suggestions or comments about how the Cancer Society of NZ could better work with schools to promote sun protection?

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141

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Have you copied your policy or procedural documents for us?

- Yes

THANK YOU VERY MUCH FOR YOUR TIME

Please return this Questionnaire and copies of any relevant documents in the pre-paid envelope that has been supplied.

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