Ultraviolet Radiation Working Group of the
Toronto Cancer Prevention Coalition

A Survey and Recommendations of Current Sun-Safety Policies and Programs

Final Report

December, 2000

The Toronto Ultraviolet Radiation Working Group

of the Toronto Cancer Prevention Coalition
is a partnership of individuals and organizations concerned with
the impact of solar and artificial ultraviolet radiation (UVR) on human health.

Partner organizations include:

- Cancer Care Ontario
- Canadian Dermatology Association
- Canadian Red Cross, Ontario Zone
- Environment Canada, Ontario Region
- Health Canada, Ontario Region
- Lifesaving Society
- Toronto-Sunnybrook & Women's College Health Science Centre - Women's College Campus
- Toronto Children's Services
- Toronto District School Board
- Toronto Parks and Recreation Division
- Toronto Public Health
- Toronto-Sunnybrook Regional Cancer Centre
- Toronto Western Hospital

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Dr. Fred Ashbury of PICEPS Consultants, Inc. who did the research, conducted the survey and data analysis and wrote the initial draft under the auspices of the Toronto Cancer Prevention Coalition is acknowledged for his important contributions to the preparation of this report.

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I. Executive Summary

A. Background

Skin cancer is the most commonly diagnosed cancer in Canada. *The Report of the Ontario Task Force on the Primary Prevention of Cancer: Recommendations for the Primary Prevention of Cancer (1995)* states that repeated exposure to the ultraviolet radiation in sunlight, especially between the ages of one and 18, is the principal cause of all forms of skin cancer. Reducing overall exposure to sunlight and protecting exposed skin when outdoors are important measures to prevent skin cancer.

The Toronto Ultraviolet Radiation (UVR) Working Group of the Toronto Cancer Prevention Coalition has been meeting since September, 1999 to discuss the development of an action plan to reduce ultraviolet radiation exposure (from solar and non-solar sources) in the Toronto population. The UVR Working Group examined several reports published in Canada that give recommendations to reduce population exposure to ultraviolet radiation, including the following:

- *Report of the Ontario Task Force on the Primary Prevention of Cancer: Recommendations for the Primary Prevention of Cancer, March 1995.*
- *Proceedings of the Workshop on Atmospheric Ozone.* (Ontario Climate Advisory Committee, 1996).
- *The Middlesex-London Community Blueprint for the Primary Prevention of Cancer.* (Middlesex-London Health Unit, 1999).
- *Sun Exposure and Protective Behaviours, Ontario Report 1998*. (Ontario Sun Safety Working Group, 1998).
- *Solar and Artificial Ultraviolet Radiation: Health Effects and Protective Measures.* (Federal Provincial Territorial Radiation Protection Committee, 1999).
- *Ultraviolet Radiation in the Workplace.* (Ontario Ministry of Labour Radiation Protection Services, 1996).

After reviewing the selected reports listed above, the UVR Working Group chose to focus first on ultraviolet radiation from solar rather than non-solar sources. Dr. Fred Ashbury of PICEPS Consultants Inc. was contracted to identify and analyse sun-safety policies and programs in four sectors – day care, education, workplace, and recreation. The goals of this research were to:

a) determine recommendations for sun-safety policies and programs in these sectors world-wide
b) identify evidence-based UVR policies and programs world-wide
c) note gaps/issues in existing solar UVR policies and programs;
d) describe principles, strategies, and interventions to facilitate the successful implementation of UVR policies in municipalities and
e) identify the strategies, policies and programs to reduce solar UVR exposure currently in place in the City of Toronto.

Research strategies included a review of the documents listed above; a world-wide environmental scan supported by key informant interviews; and a survey of selected

organizations in the Greater Toronto Area regarding their sun-safety policies and practices in the daycare, recreation, education and workplace sectors.

B. Research Findings:

a) Areas of Recommendations for Sun-Safety Policies and Programs in the Daycare, Education, Workplace and Recreation Sectors

The following main areas of recommendations for policies and programs were identified:

- **Education/Training** Examples include public, professional, curricula in daycares, elementary and high schools, training programs for outdoor employees
- **Physical measures to reduce sun exposure** Examples include limiting sun exposure, shade initiatives, protective clothing, sunscreen, eyewear
- **Targeting of specific groups** Examples include youth, parents, employees working outdoors
- **Legislation** Examples include labelling clothing, amendments to Health and Safety Acts
- **Logistical measures** Such as scheduling outdoor events during non-peak UVR periods
- **Reinforcement mechanisms** to ensure appropriate implementation of sun-safety programs to support policies and to ensure appropriate observance of the parameters of the policies
- **Response mechanisms** that ensure that the workplace is adhering to Workplace Safety and Insurance Board (WSIB) regulation 1101 and documenting sunburn occurrences with recommendations for prevention
- **Audit/Monitoring mechanisms** For example, periodic UV safety audits - to evaluate the effectiveness of sun-safety policies and programs

b) Gaps/Issues

The review identified a number of actions needed to develop and implement local policies and programs:

- Get sun protection on the municipal agenda.
- Develop clear policy and the programs to support the policy.
- Develop a well-defined implementation plan for both policies and programs.
- Have reinforcement activities for policies and programs with consensus among all parties.
- Design and implement rigorous evaluation studies for policies and programs.
- Develop clear and specific indicators for monitoring and evaluating policies and programs; for example, shade, clothing.

c) Factors Critical for Successful Sun-Safety Policies and Programs at the Municipal Level

- Adopt community-based buy-in principles.
- Establish partnerships.
- Identify policies and programs that show promise for local adaptation.
- Develop, test and evaluate educational materials and guidelines.
- Develop the capacity for evaluation.

II. Recommendations for a Sun-Safety Action Plan for the City of Toronto

Based on research findings to date and in order to begin action toward reduction of solar ultraviolet radiation exposure in the Toronto population, the Toronto Ultraviolet Radiation Working Group recommends that:

- The City of Toronto act as a model employer by developing and implementing a cancer prevention strategy related to over-exposure to solar UVR for its employees through its Joint Health and Safety Committee(s). Such strategies should include education, environmental supports, written policy and evaluation.

- The Toronto City Council set, enforce and monitor shade provision in public facilities under its jurisdiction via municipal bylaws and urban design and planning.

- The Toronto City Council set, enforce and monitor tree protection via municipal by-laws.

- Toronto Public Health and the Toronto Cancer Prevention Coalition continue to work in collaboration with community stakeholders, partners and interested individuals to raise the level of political, public and sector commitment to developing and supporting a comprehensive skin cancer prevention action plan which includes, but is not limited to, increasing general and sector-specific (1) written sun-safety policies and (2) sun-safety programs to comprise increasing (a) environmental sun protective supports (such as shade provision, scheduling outside peak UV times, availability of sun protective gear and equipment), (b) educational training, (c) reinforcement activities with consensus, (d) evaluation initiatives.

- The Toronto Board of Health seek funding for the design and implementation of a multi-sectoral Toronto Sun-Safety Program modeled on programs with demonstrated effectiveness such as the SunSmart Community Program of Victoria, Australia.

- The Toronto Board of Health support and advocate for the establishment of an Evaluation Unit whose expertise can be utilized to evaluate municipal and community initiatives for sustained behavioural change outcomes in, but not limited to, the ultraviolet radiation area.

III. Research Project: A Survey of Current Sun-Safety Policies and Programs

A. Background and Objectives

Skin cancer is the most commonly diagnosed cancer in Canada, and its incidence has increased steadily over the past several decades.[1] During the period 1980-1991, 4,993 Ontario men (1,151 Toronto men) and 4,970 Ontario women (1,178 Toronto women) were diagnosed with melanoma.[2]

Sunlight is a major source of ultraviolet radiation. Ultraviolet radiation, which is also called ultraviolet light, is invisible electromagnetic radiation but has shorter wavelengths and higher energies than visible light. The International Agency for Research on Cancer has stated that solar ultraviolet radiation is carcinogenic to humans and causes cutaneous malignant melanoma and nonmelanocytic skin cancer in humans. [3] The season, time of day, atmospheric conditions and location influence the amount of solar UVR to which an individual can be exposed. The Report of the Ontario Task Force on the Primary Prevention of Cancer, *Recommendations for the Primary Prevention of Cancer,* 1995 stated that repeated exposure to the ultraviolet radiation in sunlight, especially between the ages of one and 18, is the principal cause of all forms of skin cancer.[4] Reducing overall exposure to sunlight and protecting exposed skin when outdoors are important measures toward prevention.

A major stumbling block for skin cancer prevention initiatives is the dearth of evidence-based policies and practices that can be implemented in a timely, efficient and effective manner.[5,6] The Ultraviolet Radiation Working Group (UVRWG) of the Toronto Cancer Prevention Coalition has been meeting since September, 1999, to discuss the development of an action plan to reduce ultraviolet radiation exposure in the Toronto population. The UVRWG identified the absence of and critical need for such policies and practices at the municipal level. In response to this need, PICEPS Consultants, Inc. was contracted by the Toronto Cancer Prevention Coalition to undertake a project to identify and describe:

- Recommendations for Sun-Safety Policies and Programs in the Day care, Education, Workplace and Recreation Sectors;
- Evidence-based UVR policies and practices;
- Gaps/Issues in Sun-Safety Policies and Programming;
- Principles, strategies, and interventions to facilitate the successful implementation of UVR policies in municipalities; and
- the strategies, policies and programs to reduce solar UVR exposure currently in place in the City of Toronto.

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[1] National Cancer Institute of Canada: *Canadian Cancer Statistics 1999.* Toronto, Canada, 1999.
[2] Data supplied by Dr. L. Marrett, Cancer Care Ontario, February, 2000.
[3] IARC Working Group on the Evaluation of Carcinogenic Risks to Humans (1992). Solar and Ultraviolet Radiation. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, 55.
[4] The Report of the Ontario Task Force on the Primary Prevention of Cancer. *Recommendations for the Primary Prevention of Cancer*. Toronto, Ontario: Queen's Printer for Ontario. March, 1995.
[5] Ashbury FD, Rootman I. Workshop report: research, policy and program planning on sun protective behaviours. *Cancer Prevention & Control* 1998;2(3):129-132.
[6] Mills CJ, Jackson S. Workshop report: publication education messages for reducing health risks for ultraviolet radiation National Cancer Institute of Canada, Canadian Cancer Statistics, 1999. Toronto: NCIC, 1999.. *Chronic Diseases in Canada* 1995;16(1):33-36.

B. Methodology

The project had three main activities:

1. a review of selected Canadian documents recommended by the UVRWG;
2. an environmental scan of policies and practices (supported by selected key informant interviews); and
3. a survey of representatives in the Greater Toronto Area responsible for UV radiation policies and programs in the daycare, schools, recreation, and/or workplace sectors.

This document is a progress report on each of the project activities. Members of the UVRWG advised and played active roles in the data collection and interpretation phases.

1. Selected Documents Review

The UVRWG recommended the following Canadian documents be reviewed by the consultant:

- *The Report of the Ontario Task Force on the Primary Prevention of Cancer: Recommendations for the Primary Prevention of Cancer, March 1995.*[7]
- *Proceedings of the Workshop on Atmospheric Ozone.* (Ontario Climate Advisory Committee, 1996)[8]
- *The Middlesex-London Community Blueprint for the Primary Prevention of Cancer.* (Middlesex-London Health Unit, 1999)[9]
- *Sun Exposure and Protective Behaviours, Ontario Report 1998*. (Ontario Sun Safety Working Group, 1998)[10]
- *Solar and Artificial Ultraviolet Radiation: Health Effects and Protective Measures.* (Federal Provincial Territorial Radiation Protection Committee, 1999)[11]
- *Ultraviolet Radiation in the Workplace.* (Ontario Ministry of Labour Radiation Protection Services, 1996)[12]

These documents were examined to identify policy recommendations, and to determine if the recommendations were general or sector-specific.

2. International Environmental Scan

The environmental scan activity involved three specific tasks:

1. contacting senior professionals in jurisdictions committing significant resources to sun-safety policies and programs, or who are conducting behavioural research and evaluation studies on sun-

[7] The Report of the Ontario Task Force on the Primary Prevention of Cancer. *Recommendations for the Primary Prevention of Cancer*. Toronto, Ontario: Queen's Printer for Ontario, March 1995

[8] Ontario Climate Advisory Committee. *Proceedings of the Workshop on Atmospheric Ozone;* 1996 Sept 30-Oct 1; Downsview, Ontario. March 1997.

[9] Middlesex-London Health Unit. *The Middlesex-London Community Blueprint for the Primary Prevention of Cancer.* London, Ontario: Middlesex-London Health Unit, 1999.

[10] Ontario Sun Safety Working Group. *Sun Exposure and Protective Behaviours: Ontario Report 1998.* Toronto: Canadian Cancer Society (Ontario Division), 1998.

[11] Federal Provincial Territorial Radiation Protection Committee. *Solar and Artificial Ultraviolet Radiation: Health Effects and Protective Measures*, Position Statement and Overview. Ottawa: FPTRPC, 1999.

[12] Ontario Ministry of Labour Radiation Protection Services. *Ultraviolet Radiation in the Workplace.* Toronto, Ontario: Queen's Printer for Ontario, 1996.

safety policies and/or programs, to obtain their advice on the conduct of the environmental scan and to obtain materials and related resources to assist our understanding of the status of sun-safety policies and programs world-wide;

2. a literature search to identify relevant published literature on UVR policies and practices; and

3. an INTERNET search to identify relevant organizational websites.

a) Key Informant Interviews

Interviews were conducted with the following individuals:

- Dr. David Hill, Australia
- Dr. Hein de Vries, Netherlands
- Dr. David Buller, United States
- Dr. Christina Mills, Canada
- Brian Hyndman, Canada

All key informants provided advice on potential sources for solar ultraviolet radiation policies and practices. In addition, key informants suggested other organizational and professional contact names (including contact information), and two key informants sent packages of reviews and related materials on UVR policies and practices.

b) Literature Search

In addition to reviewing the sources recommended by the UVRWG, MEDLINE and CANCERLIT databases were searched to identify peer-reviewed publications (in the last five years) pertaining to UVR policies and practices. The CANCERNET database was also searched, without restriction on year of publication. The search phrases included:

- ultraviolet
- ultraviolet radiation
- ultraviolet radiation and policy
- skin neoplasms
- skin neoplasms and policy
- skin neoplasms and schools and policy
- skin neoplasms and workplace and policy
- skin neoplasms and day care and policy
- skin neoplasms and recreation and policy

- skin neoplasms and prevention
- skin neoplasm and prevention and policy
- additional searches using the phrases: melanoma, solar, sun, sun safety, and sun exposure and the related expressions above.

c) Internet Search

The search began with the following websites, then related links were visited.

- www.accv.org.au (Anti-Cancer Council of Victoria)
- www.sunsmart.com.au (SunSmart Program of Australia)
- www.gov.on.ca/LAB/ohs/uvrade.htm (Ontario Government Website)
- www.hc-sc.gc.ca/hbp/lcdc (Laboratory Centre for Disease Control, Ottawa)
- www.arandaps.act.edu_au/environment/activity/healthy/sunsmart.htm
- www.wce.ac.nz/cancer/lifestyles_sun (New Zealand)
- www.regional.niagara.on.ca (Niagara Falls, Ontario)
- www.epa.gov (US)
- www.health.gov/healthypeople/
- www.cdc.gov/cancer/partners.htm (Centres for Disease Control, US)
- www.aloha.com/~lifeguards/sun.html (Lifeguard Skin Cancer Protection website)
- http://cnetdb.nci.nih.gov/cancerlit.html (National Institutes of Health, US)
- http://www.ec.gc.ca/envhome.html (Environment Canada)
- http://www.ijc.org/ijcweb-e.html (International Joint Commission - Canada/US)
- www.cancer.ca (Canadian Cancer Society)

Some sector-specific organizational websites suggested by members of the UVRWG were also visited to identify the extent and nature of sun-safety policy and program related information. These included websites in the recreation and workplace sectors.

3. Local Survey of Ultraviolet Radiation Policies and Programs: Greater Toronto Area

Working with the UVRWG, PICEPS Consultants, Inc., designed, implemented, documented and reported on a survey of sector-specific organizations in the Greater Toronto Area. The purpose of the survey, which received ethics approval through Toronto Public Health, was to catalogue the type of sun-safety policies and programs that are currently implemented in the day care, schools, workplace, and recreation sectors. The results of this survey may be used to identify areas for further enquiry, and/or to identify possible stakeholder sun-safety policy and program needs/issues. Members of the UVRWG contacted these organizations, where possible, to confirm the most appropriate individual to whom the survey should be sent. However, in the event an individual received the survey and determined she/he was not the appropriate respondent, we invited the person to pass the survey to an individual in her/his organization that would be appropriate. We also sought permission to follow up with respondents if we needed to clarify the responses they provided. Organizational representatives were informed that the responses they provided would be held in the strictest confidence. Surveys were sent out at the end of January, 2000, and follow up telephone calls were made in mid February, 2000, to confirm receipt and potential participation, in order to optimize the response rate.

C. Project Results

1. International Sun-Safety Policies and Programs: Results of Document Review and Environmental Scan

From the INTERNET sites, either specific policies on UVR or sun safety were downloaded or contact information was identified, so that it would be possible to follow up to obtain policies and programs. It was noted that several policies may have broader or multi-sectoral applications. The following is a list, by sector, of the identified programs. (An * indicates a formal policy with supporting programs, and a ✓ indicates we think the policy and/or programs have been evaluated based on the website or related information.)

National Non-Sector-Specific Efforts
The National Skin Cancer Prevention Education Program (Centers for Disease Control, US): *✓ [13]

School Policies/Programs
- Sun Smart Schools Program (Australia): *✓
- Sunwise School Program (National Safety Council, US)
- Sun Safety (The Regional Municipality of Niagara Public Health Department)
- Lifestyle and the Sun: Shady School Policy for Primary and Secondary Schools (New Zealand)
- Living with Sunshine (Canadian Cancer Society) *✓
- Sun awareness and safety calendar distributed to schools (Environment Canada)

Day Care Centres Policies/Programs
- SunSmart (Australia): *
- Lifestyle and the Sun: Shady School Policy (New Zealand): *
- Sun Safety (The Regional Municipality of Niagara Public Health Department)

Recreation Policies/Programs
- Sunsmart and Shade Development Policy, Australia: *
- Sun Safety (Regional Niagara Public Health)

Workplace Policies/Programs
- Health and Safety Guidelines, UV Radiation in the Workplace (Radiation Protection Services, Ontario Ministry of Labour): *
- Sunsmart and Shade Development Policy, Australia: *
- Sun Safety (Regional Niagara Public Health)
- Lifeguard Association*

It should be pointed out that the majority of the government websites made recommendations about healthy living in relation to sun exposure.

The information presented in these Internet sites, together with related information, were reviewed and synthesized to identify general and sector-specific sun-safety policies. These data were combined with the review of the selected Canadian documents identified by the UVRWG and related materials

[13] See also, Graffunder CM, Wyatt SW, Bewerse B, Hall I, Reilley B, Lee-Pethel R. Skin cancer prevention: the problem, responses, and lessons learned. *Heath Education &Behavior* 1999;26(3):308-16.

to form the list of recommendations below for inclusion in general and sector-specific sun-safety policies and programs.

a) General Recommendations for Sun-Safety Policies and Programs

- **Education/Training:** Many of the suggested documents make general recommendations for public education and general recommendations for educational initiatives directed at audiences within the day care, workplace, schools, and recreational sectors. For example, there are numerous recommendations for public education campaigns. Professional training programs offered through colleges and universities have also been suggested.

- **Physical measures to reduce sun exposure** include such examples as planting more shade trees in parks, school grounds and other outdoor areas and workplaces. These also include the use of sunscreens, protective clothing and protective eyewear.

- **Targeting specific groups**: There are recommendations for policies and programs directed at particular groups, such as children, youth, and people of fairer complexion.

- **Legislation:** Approaches are recommended that involve adopting, modifying or implementing new UVR-related legislation. Some have recommended legislation that requires clothing manufacturers to implement a labelling system to indicate the degree of UV protection offered by the clothing material. Policy opportunities include amending appropriate legislation for textile manufacturers. These approaches also point to the need for the involvement of all levels of government, non-government organizations (NGOs) and consumer groups to facilitate the legislative process.

b) Sector-Specific Recommendations for Sun-Safety Policies and Programs

Day Care Sector

- **Education/training**: Introducing sun-safety curricula for day care children; training of day care educators; application of the UV-index.

- **Physical measures**: For example, shade trees and shaded areas in all outdoor play areas; required use of protective gear including hats, long-sleeved shirts, protective eyewear; required use of sunscreens with a SPF value of 15 or higher when children are outdoors.

- **Logistical measures**: For example, scheduling outdoor events earlier or later in the day (outside the peak UVR period).

Recreation Sector

- **Education/training**: Examples are training camp counsellors, lifeguards and other recreational personnel in sun-safety practices and responses, such as firstaid for persons who have been overexposed; posting the UV index in outdoor places.

- **Physical measures**: Examples are shade trees and shaded areas in all outdoor spaces such as parks, beaches, playgrounds; providing access to sunscreens, protective clothing, eyewear at recreational facilities.

- **Logistical measures**: For instance, scheduling outdoor events earlier or later in the day (outside the peak UVR period), in recreational areas.

Education Sector

- **Education/training**: Including the health effects of solar radiation and skin cancer prevention practices in health curriculum, teacher training programs, professional training initiatives at the post-secondary level; application of the UV-index.

- **Physical measures**: Examples include shade trees and shaded areas in all school yards; require the use of sunscreens (SPF value of 15 or higher) when students are outdoors; requiring long-sleeved clothing, hats, protective eyewear.

- **Logistical measures**: For example, scheduling outdoor events earlier or later in the day (outside the peak UVR period).

Workplace Sector

- **Physical measures**: Examples include shade trees and shaded areas in all outdoor workplaces; requiring equipment used outside to have adequate shading—for example, tractor cabs with tinted glass; requiring use of sunscreens and lip screens with an SPF of 15 or higher; requiring wide-brimmed hats (where practicable).

- **Legislation**: Amending Health and Safety Acts to include skin cancer prevention measures; advocating for enforcement initiatives—for example, in Ontario, the Occupational Health and Safety Act's provisions (sec 25(2)(h) enforce the threshold limit values (TLVs) recommended by the American Conference of Government Industrial Hygienists for occupational exposure to UVR. Enforcement activities also include trained personnel to determine exposure levels.

- **Logistical measures:** Applying workflow/workplace activity measures; for instance, when practicable, confining UV radiation to restricted areas; limiting workers' exposure times; posting warning signs.

- **Response mechanisms**: For instance, ensuring that the workplace is following the Workplace Safety and Insurance Board's regulation 1101[14] to deliver first aid in the event of sunburn and to write an incident report with each occurrence with recommendations for prevention.

- **Audit/Monitoring mechanisms**: Examples include 1) conducting periodic UV safety audits and evaluations of sun-safety programs and controls; 2) needs assessments to identify further sun exposure reduction opportunities; 3) environmental scans to identify innovations to reduce sun exposure.

The extent to which a sector-specific organization has all or some of these sun-safety policies and programs varies considerably. In addition, it is challenging to interpret precisely what is meant by expressions in some of the language used in these policies and programs, such as adequate shade, wide-brimmed hats, and avoiding the sun. It is more challenging to determine the strategies used to facilitate the implementation of the policies. There appears to be a heavy

[14] Ontario Workplace Safety & Insurance Board. (January, 2000). First Aid Requirements: Regulation 1101. Retrieved June 7, 2000 from the worldwide web: http://www.wsib.on.ca/wsib/wsibsite.nsf/Public/FAP

reliance on education as the primary mechanism to disseminate sun-protection messages. Educational interventions can clearly facilitate knowledge and awareness, and they can motivate individuals to change behaviours, although the evidence of sustained behaviour change from an educational intervention has not been demonstrated.[15] By themselves, therefore, educational interventions are necessary, but not sufficient, mechanisms to facilitate adoption and implementation of sun-protective behaviours. Furthermore, it is difficult to determine how policy adoption has been reinforced, and the extent to which the policies and programs have been evaluated.

2. Local Sun-Safety Policies and Programs: Results of Survey of the Greater Toronto Area

This section presents the results of the survey of sector-specific organizations in the Greater Toronto Area. As described previously, the purpose of this survey is to identify and document sun-safety policies and programs in these organizations. The results can be used to identify opportunities for policy and program interventions.

Survey Response Rate

A total of 38 organizations identified by members of the Working Group were contacted, and follow up telephone calls were made by members of the UVRWG to optimize the response rate. Twenty completed surveys were returned, yielding a response rate of 53%. Refer to Appendix I for the survey report and overall description of the responses to the survey. Unfortunately, only one representative from the day care and school sectors completed surveys. It is therefore not possible to give a meaningful interpretation of the survey results according to sector.

Overview of Survey Results

Of those who responded to the survey (n=20), 11 organizational representatives reported they had either sun-safety policies or programs. Of those who apparently do not have either sun-safety policies or programs, several reasons were suggested. Some indicated the employer feels it is an individual's responsibility to protect her or himself from the sun, or that there is an unwritten policy supported by educational interventions. Help with policy development and implementation was identified as an area of need by some of the respondents.

Overall, organizations responding to the survey indicated they had sun-safety policies pertaining to: wearing hats, sunscreen use, appropriate clothing (long-sleeved shirts, uniforms), education policies and eyewear. Of interest is the absence of specific policies pertaining to shaded areas. Reinforcement[16] for policies appears also to be very limited. Some of those who responded indicated that resources for policy reinforcement are limited, and that they rely on individuals' willingness to comply with the policies. However, some respondents did speak to employee discipline initiatives for workers who do not comply (e.g., employees told they could not work on the site). It was noted that one of the problems to be overcome is the harmonization of sun-safety policy reinforcement activities for the new City of Toronto. Reminder education appears to be a primary mechanism for policy reinforcement. Finally, the survey responses indicate that

[15] Green LW, Kreuter MW. *Health Promotion Planning: An Educational and Environmental Approach*. Second Edition, Mountain View, CA: Mayfield Publishing Company.

[16] We are substituting the term reinforcement for the expression "enforcement". UVRWG members and some key informants did comment on the negative connotation (punitive nature) of the latter term. Reinforcement strategies can include positive incentives to facilitate policy compliance and behaviour change.

there has been limited attention to policy evaluation. Without evaluation it is impossible to ascertain if the policies have been implemented appropriately, or to determine if the policies are affecting knowledge, attitudes and behaviours. Respondents were asked to describe performance indicators that were or could be used to monitor sun-safety policy initiatives; however, responses were sketchy. It appears there is an opportunity to do considerable work to identify appropriate indicators to measure policy performance.

The survey suggests there are sun-safety programs in place in the GTA. The data suggest that there are, in fact, more programs than there are policies. The sun-safety programs described by respondents include supplying sunscreen, hats and uniforms, as well as educational interventions. One respondent commented on providing umbrellas as an intervention to facilitate employees' sun safety. With sun-safety programs, as with policies, there has been very limited evaluation. An opportunity therefore exists to facilitate evaluation planning, data collection, and analyses to identify opportunities for program improvements and to determine the impact of these programs on knowledge, attitudes, and behaviours.

Resource limitations may be a key reason for the limited number of sun-safety policies and programs, reinforcement strategies and/or evaluation activities. Only nine respondents indicated that their organizations had personnel whose job it is to develop, deliver, or evaluate sun-safety policies and programs. It is important to note that the personnel were not solely dedicated to sun-safety policies and programs in all cases; rather, the responsibilities for this area were subsumed within a job description that included other health and safety activities.

Respondents were also asked to comment on the availability and type of other resources to support sun-safety policies and programs. The options included information systems, partnerships, having a dedicated budget, promotion such as websites, public and professional education materials, management support, and union/employee support. Respondents were also invited to comment on other kinds of supports, and the responses mainly referred to obtaining resources from other organizations. The data suggest that, overall, support mechanisms were extremely limited.

D. Discussion

While producing limited results, the GTA survey, environmental scan, and selected document review do point to an increased recognition of the need for sun-safety policies and programs. The GTA survey suggests that this recognition has occurred mainly over the past few years.

1. Gaps/Issues in Sun-Safety Policies and Programs

In spite of some recent recognition, sun-safety policies and programs do not appear to be a high priority, and thus steps must be taken to identify and support sun safety as a priority health area.

There is an urgent need to get sun protection on the municipal agenda. The literature review, environmental scan and GTA survey did not produce many examples of sun-safety policies that are operationalized at the municipal level and that have been demonstrated to work.

There is a need to develop clear support and programs. Where sun- safety policy has been written, there are few examples of programs to support the policies. Sometimes there are sun-safety programs that have been implemented in the absence of clear policies. There are sun-safety policies within the day care, schools, recreation and workplace sectors, and there are sun-

safety programs within these sectors. There appears, however, to be comparatively few examples of policies and programs formally linked; that is, there are examples of policies with no programs or reinforcement strategies to support those policies, and there are programs implemented in the absence of policies.

There is a need for a well-defined implementation plan for both policies and programs. In some cases where there were policies or programs, there were no detailed work plans (or poorly defined plans) to facilitate the implementation of the sun-safety policies or programs.

There is a need for reinforcement activities with consensus among all parties.

There is a need for rigorous evaluation studies. There has been limited evaluation of either policies or programs to identify opportunities to improve performance or to determine the impact of the policies or programs. Evaluation of existing programs has focused largely on process outcomes (changes in knowledge level and attitudes); and less on outcome/impact evaluation (movement in intention to change and sustain behavioural change).

There is a need for clear and specific indicators for monitoring and evaluation. Clear definitions of what constitutes an adequate ratio of shade to non-shade or acceptable clothing are absent from most policies. Without these and other related definitions, evaluation of the efficacy of sun-safety policies and programs will not be possible.

There are few models of evaluated municipal-level policies.

2. Factors Critical for Successful Sun-Safety Policies and Programs at the Municipal Level

The results of this project suggest that for successful local sun-safety policies and programming it is important to do the following:

- Adopt community-based buy-in principles.
- Establish partnerships.
- Identify policies and programs that show promise for local adaptation.
- Develop, test and evaluate educational materials and guidelines.
- Develop the capacity for evaluation.

Adopt Community-Based Buy-In Principles

The literature on buy-in (including the research on diffusion/dissemination) to facilitate program planning and implementation identifies a number of guiding principles.[17,18,19] These principles include:

- The policy or program recommendation must exist in response to a recognized problem, and all potential partners and the target audience must accept that the problem is significant and requires action.
- Local support can be facilitated using a linkages approach through which a credible,

[17] Health Communication Unit. Making the Case. Centre for Health Promotion, University of Toronto, 1998.
[18] Canadian Health Services Research Foundation. Issues in Linkage and Exchange Between Researchers and Decision-Makers. CHSRF, May, 1999.
[19] Orlandi M. Health promotion technology transfer: organizational perspectives. *Can J Pub Health* 1996;87(suppl 2):s60-s62.

recognized body facilitates communication and implementation between the policy-makers/program designers and those implementing and receiving (the beneficiaries of) policy/programs.

- Barriers to and facilitators of policy or program implementation should be clearly specified and strategies developed to bridge the barriers.
- Opinion leaders and champions are required for successful buy-in and implementation. These people should have a stake in the policy or program at the political level, health services delivery level, or community level, for example.
- Multiple strategies to develop buy-in are required. Emphasis must be placed beyond education and information initiatives but not exclude education and information.
- Strategies should be directed at more than one audience.

Establish Partnerships

Partnerships are required because the different potential components of successful interventions may be controlled by different organizations. For example, educational interventions may become the domain of not-for-profit organizations, employee representatives, and public health; data for feedback and audit may be the domain of local government and computer systems. Local governments can set, reinforce and monitor shade provision in public facilities under their jurisdiction. They can provide sun protection for their own staff and, in turn, these staff may become role models to facilitate sun protective behaviours in the general public. Through the mandate of public health (and possibly other departments), local government can initiate, support and sustain collaborative community action to build and evaluate policies and programs that address skin cancer prevention.

For sun-safety interventions to work successfully, these organizations would have to work together in a coordinated fashion. Partnerships are also required to facilitate the sustainability of initiatives, as an ongoing resource and/or to advocate for resources. Local adaptation and buy- in are key elements to successful intervention implementation. The audiences for whom policies and programs are intended need to be active partners in the design and implementation of strategies. The development of partnerships should be an important aspect of health promotion initiatives. While such partnerships should be truly collaborative, their development and sustenance is difficult without core support for a program.

Identify Policies and Programs that Show Promise

The environmental scan, consultation with key informants, and GTA survey results suggest that, while possibly few in number, there are sun safety policies and programs that should be reviewed to determine how they could be adopted and adapted. The Anti-Cancer Council of Victoria's SunSmart program[20] has established policies, program activities and evaluation studies with demonstrated impact on community adoption of sun safety.

As a general rule, four criteria can be used to assess the extent to which a policy or program could be promising:

1) the policy or program has community buy-in;

[20] Anti-Cancer Council of Victoria. (1998.) *SunSmart.* Retrieved December, 1999 from the worldwide web: http://www.sunsmart.com.au

2) the policy or program is based on a needs assessment of local conditions, barriers and facilitators;
3) the policy or program has implemented rigorous evaluation studies to improve it and to demonstrate its impact; and
4) the cost to operationalize the sun-safety initiative is not a burden upon existing resources.

A detailed analysis of policies and programs that met these criteria might identify some as opportunities to be emulated and built upon. It may be necessary to work with the organizations that have such policies and programs to determine if there is an opportunity to disseminate them more broadly.

Finally, the extent to which the cost of running a sun-safety policy/program is prohibitive can be a subjective interpretation. Unfortunately, there are no cost-effectiveness studies from which guiding principles can be gleaned. Nevertheless, as previously stated, the fact that the incidence of skin cancer has escalated over the past decade, and the costs of treating cancer have also grown substantially, are off-setting considerations.

Develop, Test and Evaluate Educational Materials and Guidelines

To optimize the design and the implementation of educational materials for sun safety, the following key principles are recommended:

- Materials development must meet needs, and must include audience participation in the design, dissemination, and evaluation of the materials to make content relevant.
- Materials must be audience specific and culturally sensitive.
- Messages must be presented in a way that does not provoke anxiety, and provide messages of hope to balance, as much as possible, the prevailing negative messages about cancer.
- Materials must present information in plain language. However, if medical jargon cannot be avoided, definitions should be included.
- Active strategies to provide materials directly to the public are more successful. Passive strategies such as brochures in display racks are less successful than presenting education/information materials during interactive encounters with health care providers.
- Materials should present a balanced account of available options, and facilitate communication with health care providers and representatives of agencies and groups providing services and programs regarding sun safety, public health, cancer prevention.
- Communication vehicles other than print (for example CD-ROM, video, audio cassette) can be beneficial. There is an explosion of information available on the Internet and a substantial increase in the number of people who access this informational source. However, while exciting, the Internet must be approached cautiously to determine if a source is credible and to evaluate the quality of the information provided.
- Multiple dissemination strategies are more effective than single strategies. For example, mass media combined with organizational initiatives and provider-based activities will be more successful than a single strategy.

Risk communication studies have identified a number of very useful principles that should be adopted when designing educational materials and disseminating them to audiences. Some of these key principles are:

- Recognizing that numeracy skills of the general population are limited: generally, people are limited in their understanding of numbers and their relevance.

- Identifying appropriate mechanisms to influence a risk decision (highlighting facts; what and what not to present; describing uncertainty (what is not known) and sequence of information; comparing one risk to another risk—for instance, the risk of cancer vs. risk of being in a car accident; listing arguments to support desirable options; using recognized authorities to endorse a desired option; using appropriate appeals to emotion; using non-technical terms and defining terms that are unavoidable, such as scientific terms for which no other term is possible.
- Using absolute rather than relative risk comparisons. If the underlying risk of dying from a disease is known, it is beneficial to convert the relative benefit of an intervention (chance of dying is reduced by 80% over the next year) to an absolute benefit (80 out of`100 people who receive an intervention will live as a result).
- Avoiding discussions of possible multiple risks; explaining the seriousness of the risk; defining who is at risk; describing steps to reduce/avoid the risk. According to Kreuter, Strecher and Glassman, it may also be useful to include content that compares one person's actions to another's. This concept is based on the tendency for people to assume that others similar to them are not taking the same precautionary actions. Thus, it may be beneficial to compare data on individual actions to the referent population's actions.[21]
- Using intense, explicit messages in public education materials. [22]

Develop the Capacity for Evaluation

The organizations forming the sun-safety partnership would benefit from skills and resources to facilitate policy and program planning, especially in implementation planning, identifying program needs, and evaluating process, implementation, and outcomes/impacts. An important issue for epidemiologic research is the ability to capture objective data to measure sun exposure. Measuring sun exposure objectively has, to date, been a major challenge. A recent national workshop[23] has attempted to address this issue, and has identified six core items for measuring sun-related behaviours to be included in questionnaires designed for epidemiologic and behavioural research. The core items pertain to measuring sunburn, indirect measures of sun exposure, protective behaviours, and phenotype. The workshop panel concluded that these measures should be pilot tested to assess their validity and reliability (and we would add responsiveness). These measures could be an important source for evaluation activities.

Intervention research on sun-safety policies and programs is very limited. The few studies that combined behavioural and objective measures of sun protection using more rigorous evaluation techniques concentrated on schools or day care centres. These are reported here, as they can provide important principles to guide monitoring and evaluation activities across any setting.

Schofield, Edwards and Pearce,[24] in a study of sun-protection policy in New South Wales, Australia, identified several criteria to assess the effectiveness of dissemination strategies for sun-safety policies. These criteria include measures of the extent to which the school increased the amount of shade on the property in the past 12 months, the extent to which the schools had sun-protection policies, the type of

[21] Kreute MW, Strecher VJ, Glassman B. One size does not fit all: the case for tailoring print materials. *Ann Behav Med* 1999;21(4):276-83.

[22] Buller DB, Burgoon M, Hall JR, Levine N, Taylor AM, Beach BH, Melcher C, Buller MK, Bowen SL, Husaker FG, Bergen A. Using language intensity to increase the success of a family intervention to protect children from ultraviolet radiation: predictions from language expectancy theory. *Prev Med* 2000; 30:108-114.

[23] Lovato C, Shoveller J, Mills and an Expert Panel. Workshop Report - Canadian national workshop on measurement of sun-related behaviours. C*hronic Diseases in Canada* 1999;20(2):96-100.

[24] Schofield MJ, Edwards K, Pearce R. Effectiveness of two strategies for dissemination of sun-protection policy in New south Wales primary and secondary schools. Australian and New Zealand Journal of Public Health 1997;21(7):743-50.

school uniform (day-use and sports uniforms, hats) worn by boys and girls, whether or not teachers wore sun-protective clothing, the extent to which teachers encouraged students to play in shaded areas, the presence (or absence) of sun-protection curricula, the frequency of reminding students about sun safety according to specific events (for example, sports events, outings, physical education training, lunch breaks, recess), and the extent of senior faculty and other supports for sun-safety policies. These authors reported that, while further research is needed, primary schools seem more likely to adopt and implement sun-safety policies and programs compared to high schools.

Milne and colleagues attempted to find a direct measurement of sun protection in primary schools.[25] Video surveillance of children on school premises was used to collect data on sun-protection behaviours, and aerial photographs were used to estimate the available proportion of play area that was shaded. The research team also employed special software (geographical information system software called ARC/INFO to measure the area of various physical spaces to calculate the percentage of shade available in each of the observed schools). Children were also asked to wear ambient badges to determine their amounts of UVR exposure. They found that the schools' "no hat no play" policies did have some effect, with 9 out of 10 children wearing hats. However, they also found that the types of hats worn by the children varied tremendously, and that older children were more likely to wear hats that offered less protection (see also Schofield et al.[26]).

While the average amount of shade on school premises was approximately 15 per cent of the total play area, the study concluded that because the schools' sun-safety policies do not specify what constitutes adequate shade, it not possible to comment on the adequacy of this proportion of shade. The children did appear to seek out shade when the ambient UVR was high. The children did know they were being observed, and the authors commented this might have affected their behaviour. Repeated measures to de-sensitize the audience to being observed are needed to determine the impact of policies and programs on the children's sun-safety behaviours. The authors concluded that principals' estimates of shade provision, or the self-reported sun-protective behaviours of children, should not be used to evaluate the level of sun protection activities in schools.

Crane and colleagues[27] evaluated an intervention targeting staff of child care centres. The intervention was designed to increase sun-protection practices of children attending the centres, and targeted staff, parents and the children; however, the primary target audience was staff. The intervention was based on the health belief model, and was designed to increase individual beliefs in susceptibility and risk for skin cancer, as well as the benefits of sun protection, and to reduce barriers to the practice of sun safety. The slogan for the intervention was "Block the Sun, Not the Fun." The intervention involved two main components: a three-hour staff workshop, and parent information/activity packets that contained brochures, learning activities to be completed with the child, sunscreen samples, and a slogan-based kitchen magnet.

Parents were required to give permission for day care staff to apply sunscreen to their children, to provide individual containers of sunscreen to the staff for use with their children, and to apply sunscreen to their children prior to being dropped off at the centre. Interviews were conducted with staff, the settings were observed, and written policies were reviewed (before and following the introduction of the intervention). Parents were surveyed. The intervention did not affect sun-safety practices of parents, shade provision or clothing use at the centres. However, it did produce

[25] Milne E, English DR, Corti B, Cross D, Borland R, Gies P, Costa C, Johnston R. Direct measurement of sun protection in primary schools. *Prev Med* 1999;29:45-52.

[26] Schofield MJ, Tripodi A, Girgis A, Sanson-Fisher RW. Solar protection issues for schools: policy, practice and recommendations. *Australian Journal of Public Health* 1999;15(2):135-41.

[27] Crane LA, Schneider LS, Yohn JJ, Morelli JG, Plomer KD. 'Block the sun, not the fun': evaluation of a skin cancer prevention program for child care centers. *Am J Prev* Med 1999;17(1):31-7.

significant, positive changes in both knowledge and attitudes toward sun protection on the part of staff. The use of sunscreen in the centres was also positively influenced by the intervention. This is an example of a low-intensity intervention that can affect sun-safety knowledge, attitudes and practices.

Conclusion

Skin cancer is a preventable form of cancer. At present, a reduction in exposure to the sun is the most important health behaviour to reduce an individual's risk for skin cancer. It is incumbent upon public health, health providers, employers, employee representatives, health care organizations, and health-related community-based organizations to ensure that the message of sun safety is framed and disseminated in ways that meet the needs of the public (including sub-groups and hard-to-reach groups), and that policies and programs with appropriate resources exist to reduce the burden of this disease.

IV. References

Anti-Cancer Council of Victoria. (1998.) *SunSmart.* Retrieved November, 1999 from the worldwide web: http://www.sunsmart.com.au

Ashbury FD, Rootman I. Workshop report: research, policy and program planning on sun protective behaviours. *Cancer Prevention & Control* 1998;2(3):129-132.

Buller DB, Burgoon M, Hall JR, Levine N, Taylor AM, Beach BH, Melcher C, Buller MK, Bowen SL, Husaker FG, Bergen A. Using language intensity to increase the success of a family intervention to protect children from ultraviolet radiation: predictions from language expectancy theory. *Prev Med* 2000; 30:108-114.

Canadian Health Services Research Foundation. Issues in Linkage and Exchange Between Researchers and Decision-Makers. CHSRF, May, 1999.

Crane LA, Schneider LS, Yohn JJ, Morelli JG, Plomer KD. 'Block the sun, not the fun': evaluation of a skin cancer prevention program for child care centers. *Am J Prev* Med 1999;17(1):31-7.

Federal Provincial Territorial Radiation Protection Committee. *Solar and Artificial Ultraviolet Radiation: Health Effects and Protective Measures. Position Statement and Overview.* Ottawa: FPTRPC, 1999.

Graffunder CM, Wyatt SW, Bewerse B, Hall I, Reilley B, Lee-Pethel R. Skin cancer prevention: the problem, responses, and lessons learned. *Heath Education &Behavior* 1999;26(3):308-16.

Green LW, Kreuter MW. *Health Promotion Planning: An Educational and Environmental Approach.* Second Edition, Mountain View, CA: Mayfield Publishing Company.

Health Communication Unit. Making the Case. Centre for Health Promotion, University of Toronto, 1998.

IARC Working Group on the Evaluation of Carcinogenic Risks to Humans (1992). Solar and Ultraviolet Radiation. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, 55.

Kreute MW, Strecher VJ, Glassman B. One size does not fit all: the case for tailoring print materials. *Ann Behav Med* 1999;21(4):276-83.

Lovato C, Shoveller J, Mills and an Expert Panel. Workshop Report - Canadian national workshop on measurement of sun-related behaviours. C*hronic Diseases in Canada* 1999;20(2):96-100.

Malenka DJ, Baron JA, Johansen S, Wahrenberger JW, Ross JM. The framing effect of relative and absolute risk. *J Gen Intern Med* 1993;8:543-8.

Middlesex-London Health Unit. *The Middlesex-London Community Blueprint for the Primary Prevention of Cancer*. London, Ontario: Middlesex-London Health Unit, 1999.
Mills CJ, Jackson S. Workshop report: publication education messages for reducing health risks for ultraviolet radiation National Cancer Institute of Canada, Canadian Cancer Statistics, 1999. Toronto: NCIC, 1999.. *Chronic Diseases in Canada* 1995;16(1):33-36.

Milne E, English DR, Corti B, Cross D, Borland R, Gies P, Costa C, Johnston R. Direct measurement of sun protection in primary schools. *Prev Med* 1999;29:45-52.

National Cancer Institute of Canada: *Canadian Cancer Statistics 1999.* Toronto, Canada, 1999.

Ontario Climate Advisory Committee. *Proceedings of the Workshop on Atmospheric Ozone*; 1996 Sept 30-Oct 1; Downsview, Ontario. March 1997.

Ontario Ministry of Labour, Radiation Protection Services (1996). *Ultraviolet Radiation in the Workplace.* Toronto, ON: Queen's Printer for Ontario, 1996.

Ontario Sun Safety Working Group. *Sun Exposure and Protective Behaviours: Ontario Report 1998.* Toronto: Canadian Cancer Society (Ontario Division), 1998.

Ontario Workplace Safety & Insurance Board. (January, 2000). First Aid Requirements: Regulation 1101. Retrieved June 7, 2000 from the worldwide web: http://www.wsib.on.ca/wsib/wsibsite.nsf/Public/FAP

Orlandi M. Health promotion technology transfer: organizational perspectives. *Can J Pub Health* 1996;87(suppl 2):s60-s62.
Report of the Ontario Task Force on the Primary Prevention of Cancer – Recommendations for the Primary Prevention of Cancer (March 1995), Toronto, ON: Queen's Printer for Ontario.

Schofield MJ, Edwards K, Pearce R. Effectiveness of two strategies for dissemination of sun-protection policy in New south Wales primary and secondary schools. Australian and New Zealand Journal of Public Health 1997;21(7):743-50.

Schofield MJ, Tripodi A, Girgis A, Sanson-Fisher RW. Solar protection issues for schools: policy, practice and recommendations. *Australian Journal of Public Health* 1999;15(2):135-41.

V. Appendix I

A Survey to Identify Sun-Safety Policies and Programs in the Greater Toronto Area: Descriptive Results March 31, 2000

A Survey to Identify Sun-Safety Policies and Programs In the Greater Toronto Area

Descriptive Results to March 31, 2000

Under contract to the Toronto Cancer Prevention Coalition, PICEPS Consultants, Inc. worked with the Ultraviolet Radiation Working Group, to develop, disseminate, record, analyze, and report on the results of a survey of stakeholders in the Greater Toronto Area. The purpose of the survey (which received ethics approval through Toronto Public Health) was to catalogue the type of sun-safety policies and programs that are currently implemented in the day care, school, workplace, and recreation sectors. A total of 38 organizations identified by members of the Working Group were contacted, and follow-up telephone calls were made to optimize the response rate. Sixteen completed surveys were returned, yielding a response rate of 42%. This report presents a description of the responses to the survey, which included closed-ended questions (with fixed response options from which the participant could select), and open-ended questions (to be completed by the respondent using her/his own words). Respondents' remarks were transcribed *verbatim*.

Please note that the ID labels provided in the charts delineating respondents' open-ended remarks are for administrative purposes only. These were added after by the consultant to facilitate tracking individual respondent's remarks throughout the document. Respondents were promised confidentiality, and as such, no names are provided in this report; these ID labels cannot be linked to individuals. Where respondents did not provide an answer, we coded these as missing data.

Given the small number of responses, only the number of respondents is given for each of the response options to the closed-ended questions; percentages are not provided as this is not meaningful (for example, a change of 1 or 2 from one response option to another would produce a 5-10% change in the proportion of respondents who responded to the different options). The results of this survey may be used to identify areas for further enquiry, and/or to identify possible stakeholder sun-safety policy and program needs/issues.

GTA SUN-SAFETY POLICY/PROGRAM SURVEY RESULTS

Q 1 - Does your organization currently have sun-safety policies or programs?

Yes	❒	**n=14**
No	❒	**n=6**

➳ **If No, could you please tell us why not, *and then go to Question 7.***

ID	
C	Although we do not have at this date a written sun-safety policy in place, we do like the health department sun-safety resource binder for training sessions for all our staff.
D	The company maintains that it is the responsibility of our employees to take care of their own situation.
E	At this point we did not see that it was important. We have a sun protection permission form that parents complete so that we can put sunscreen on kids during all outdoor play.
G	Policy is not written. It is a policy through education and awareness of sun-safety practices.
H	Policy is being redone for the new Mega city. I would like a stronger policy with education.
I	The city presently has a draft policy on heat stress. They will be working with us to finalize it. They are working on ultraviolet radiation.
J	Each member of our association works for separate employers and organizations. Policies and programs would be developed within the context of each individual's workplace.
K	Employees work indoors except maintenance people who may be outdoors with some job functions. Sunscreen recommended very strongly while outdoors.

Q 2 - In which sector(s) are you applying these sun-safety policies? (please check all that apply)

Daycare	❒	**n=1**	Recreation	❒	**n=6**
Schools	❒	**n=1**	Workplace	❒	**n=16**

Four completed surveys identified more than one sector as their areas of responsibility.

Q 3a - Please list below (print clearly) the sun-safety <u>policies</u> for your organization (if possible, would you please attach a copy of each of the policies you list at the end of the survey). Also, please list the year in which the policies were first implemented, and indicate with a check mark if the policy has been formally evaluated.

Overall, organizations responding to this survey indicated they had sun-safety policies that dealt with the following areas (more than one area could be specified). (NOTE: where open-ended remarks were provided, we present this in the chart following these summary results.)

- Wearing of hats N=4
- Wearing of sunscreen N=7
- Clothing policy (e.g., uniforms) N=2
- Education N=4
- Eyewear N=2
- Umbrellas/Shade N=1
- Drink Water N=1

- Minimum exposure during peak hours N=1

Organization's Sun-Safety Policies	Year of Implementation
ID L- The odd newsletter	
ID M- Education - Part of Orientation	1997
ID N - Aquatic Staff: -Suntan lotion, shirts are supplied -All guards wear hats as they see fit -If over-exposure occurs, they are sent home without pay. If they show up with over-exposure they are sent home. Aquatic camps & playground- sunglasses are mandatory when on duty. -we encourage water bottles while on duty. Participants are reminded to drink throughout the day.	Approximately 1990
ID O - Parks and Recreation Division will endeavour to provide the necessary education and information to staff and participants who may be at risk as a result of exposure to the sun. New City of Toronto, Parks & Recreation harmonized UVR policy completed, as part of the first alert risk management policy harmonization.	Never formally evaluated.
ID-P-None	
ID Q-Sun sense awareness	1997
ID R-Health & safety standard section 5.15 : Sunscreen protection from ultraviolet radiation (attached).	1996
ID S-See attached	1995
ID H -City of Toronto (old city) Supplying sunscreen (SPF 15) Supplying hats (outside workers)	Believe 1993

For those respondents who did provide data on the year in which the policies were implemented, the vast majority of these policies appear to have been implemented in the past five years. Respondents were also asked to comment on whether their sun-safety policies (if any) were evaluated. Of those who responded to this question (n=7), two (2) indicated they had been evaluated, although the details (e.g., evaluations plans or performance indicators) were not provided by most. One respondent indicated the organization used administrative records to monitor, for example, the number of employees who reported any form of skin cancer. Another individual reported that the organization's senior management is given annual reports regarding sun-safety policies in place. Finally, one respondent indicated that the amount of sunscreen lotion used was a performance measure.

Q 3b - Please list below (print clearly) the sun-safety <u>programs</u> for your organization (e.g, supplying hats to outdoor workers, providing educational sessions on sun safety). Also, please list the year in which the programs were first implemented, and indicate with a check mark if the program has been evaluated. If the program was evaluated, we ask if you would please include a copy of the evaluation report, when you return the questionnaire.

Overall, organizations responding to this survey indicated they had sun-safety programs that dealt with the following areas (more than one area could be specified). (NOTE: where open-ended remarks were provided, we present this in the chart following these summary results.)

- Wearing of hats N=8
- Wearing of sunscreen N=8

- Clothing policy (e.g., uniforms) N=2
- Education N=7
- Physical structures (i.e., shade) N=2

These data from this survey suggest that there are more programs than there are policies; it also appears that the programs have been implemented for a period, on average, that is longer than the policies. This suggests an opportunity to use program data to leverage policies on which the programs can be based. Again, as the chart below indicates, the majority of these programs have not been evaluated. An opportunity thus exists to facilitate the development of sun-safety policies in organizations for which there are programs in the absence of policies. Furthermore, if organizations are willing to evaluate their programs (and a few commented they recognized the need to do so), this may present the Working Group with an opportunity to follow up with those organizations to evaluate and identify opportunities for program improvements.

Organization's Sun-Safety Programs	Year of Implementation	Check if the Program has been Evaluated
ID M-Ed. Program recommends hats, sunscreen etc.		
ID N-We provide umbrellas on each guard tower for lifeguards. Sun-Safety Awareness Sessions are run for all staff.	Approx. 1990 Approx. 1994	 Updated each year.
ID O- Lifeguard uniform optional- Tilley-style hats -permitting staff to wear white long-sleeved shirts beneath tank top Providing sunscreen to staff free of charge	1999	
ID A- Provision of sunscreen to outdoor workers Provision of hats to outdoor workers Provision of umbrellas for lifeguards who work outside Provision of baseball hats to ambulance workers for use during outdoor activities Installation of sun canopies during outdoor activities on all ride-on equipment under certain conditions	1993 N/Available N/Available N/Available	No No No No
ID P- hats for employees outdoors Sunscreen available Education sessions & material	1957 1996 1995	No skin cancer has been reported as work related. No
ID Q - Sunscreen supplied - Awareness sessions	1997	Yes
ID R - Hats are supplied to outdoor workers.	1990	
ID T - Teachers manual	1995	No
ID F - hats for outdoor work - Sunscreen for outdoor work	Unknown Unknown	
ID U-Availability of cloth hood to protect outdoor workers	1999	By whom? A needs assessment program was performed to establish the program.
ID G-Supply hats Education Provide lotion	1994 1994 1994	Yes Yes Yes
ID H-City of Toronto (old city): to staff they give sunscreen or hats, but no education to staff. The health department educated the public.	Believe 1993	Don't believe it has been evaluated.

Q 4a - Is there a person in your organization whose job it is to develop, deliver, or evaluate sun-safety policies and/or programs in your organization?

YES N=11 *NO* N=4 Missing Data = 5

Six (6) respondents indicated they had one person in their organization who was responsible for the design, implementation, and/or evaluation of sun-safety policies/programs. One respondent reported having four employees with these responsibilities; one reported there were 7 employees with these responsibilities, and another respondent reported having 36 persons in their organization who would have at least some responsibility for sun-safety policies/programs. Employees were not necessarily dedicated solely to the sun-safety area, but these responsibilities were described as part of the employee's overall organizational activities (see the comments below).

If yes, please provide the number in terms of full-time equivalents:

ID	
M	Part of health and safety
A	A number of health and safety staff with responsibilities for specific service areas.
P	1
Q	36
U	4 (but for other safety issues as well)
G	1
H	Management has the health and safety section do this.

Q 4b - What other resources/supports do you have in your organization to support sun-safety policies and programs? ***Please check as many of the following as apply to your situation:***

Information system(s) (e.g., electronic database)	❒	**N=1**
Partnerships	❒	**N=0**
Dedicated budget	❒	**N=1**
Promotion (e.g., websites, public and professional education materials)	❒	**N=4**
Management support	❒	**N=5**
Union/employee support	❒	**N=4**
Other, please specify	❒	**N=5**

The type of other supports/resources are described in the chart below:

ID	Other
L	Principals and teachers focus mainly on children. Phone weather number to get warnings.
N	Cancer Society, Canadian Dermatology Association. I am unsure of any other support as Human Resources is presently working on a Corporate Sun-Safety Policy.
P	Wellness program
S	Children's Services, Health Department
G	Material from Toronto Public Health

Q 5 - What does your organization do to enforce sun-safety policies and programs. Please print clearly.

Nothing	N=5
Uniform is mandatory	N=2
Mandatory parent contract (day care)	N=1
Staff discipline	N=3

Other activities were described as enforcement:

Sunscreen use is voluntary	N=1
Advise/educate	N=5

ENFORCEMENT ACTIVITIES

ID	
L	None
N	-Aquatic staff are sent home. -Sun-safe stickers and pamphlets to staff and public -Camp programs send a parent information letter which advises parents on sun-safety practices.
O	For program participants (registered)
A	Due to amalgamation it is unlikely that a consistent approach to enforcement exists. It is likely that protective equipment or devices are provided, but little follow-up in terms of its use takes place.
P	Voluntary only use of sunscreen Hats are part of uniform, therefore mandatory.
Q	No enforcement/can only give advice.
R	Periodic review of policy compliance at operational level.
S	Parent contract. Parent must sign teachers manual - reviewed annually and signed by staff.
F	A reminder to the membership to apply sunscreen and wear sun hats during the applicable seasons.
U	No enforcement mainly due to no specific policies related to sun safety.
G	Enforce wearing of hats when patrolling park, and mandatory orientation program for all staff.
H	No enforcement activities Need education to members.

Q 6 - If applicable, for any sun-safety <u>policies and program(s)</u> that your organization has evaluated, what measures did you use to assess the program (i.e., to determine if it is working)?

ID	
L	Encouraging schools to apply for funding (Canada Trust, Evergreen) to plant trees in school yard for shade.
P	No evaluation has been conducted. No incidents of work-related skin cancer have been reported since 1957.
Q	Monitoring sunscreen usage.
U	This will be done this summer.
H	No evaluation Only evaluation ever used was how much sun tan lotion was used.

Q7 - What areas of need, if any, has your organization identified for sun-safety policy and programs?

ID	
L	Advisories for weather conditions (checked with Toronto Public Health. Toronto Public Health is quite possibly the best receptive organization to provide information/guidelines. Health nurses will provide materials for general use to school staff.
N	Human Resources is working on a corporate sun-safety policy and is about to launch it.
O	Staff uniforms: long-sleeved options for lifeguard apparel and camp staff Must still be functional (e.g. not inhibit rescue ability) Increase public education and city promotion of UV index.
A	There is need for a corporate sun-safety policy and/or guidelines. Until now, there has not been a post-amalgamation approval mechanism for such a policy. It is anticipated that such a policy will be in place within the next year.
C	Where workers are working in outdoor locations
P	All outside workers
D	We have technicians working in the field who are exposed to sun for approximately 8 hours and up per day. The company's position is to dress and cover accordingly.
E	Would like to add sun-safety policies and outdoor play in hot weather to our policy for outdoor play in cold weather. Would also include statement on air quality, etc.
S	Develop sun safety in our daily program. Parent meetings. Workshops.
U	Sunscreen is not issued because it is a potential allergen. However employees are encouraged to use their own brand.
H	Please contact the City of Toronto Health and Safety Section regarding new policy for Mega City.
I	Ultraviolet radiation - heat stress/exhaustion/stroke
J	None at present
K	Maintenance people need sunscreen while working outdoors.

If you would like to add any information, please use the space below.

ID	
L	Would like recommendations to include tree planting, shade provision in school yards. Black asphalt playgrounds do not allow much room.
O	Currently, there is no cohesive policy/programs/ processes for evaluation that are consistent across all city departments. Policy/health and safety professionals within each department coordinate UVR initiatives in relative isolation; for example, Corporate Services, TTC, Parks & Recreation, Public Health. Through harmonization, the best practices of the former municipalities have been reviewed to come up with new citywide policy.
P	Long-sleeved shirts are optional for employees who work outside during high-risk periods as an alternative means of protection.
B	Outside workers may receive EUSA's sun-safety program this year.
D	"The company has offered for technicians to buy their own personal protection and submit kind of official policy or program."
S	Develop a sun-safety manual to be used for all day cares in the City of Toronto.