REPORT PREPARED FOR THE SOUTH WEST PUBLIC HEALTH OBSERVATORY

SOCIAL MARKETING-BASED SUN PROTECTION INTERVENTIONS STRATEGY FOR CORNWALL PCT — A PILOT

Volume One

Professor Lynne Eagle
Dr Gillian Kemp
Simon Jones
Bristol Social Marketing Centre
Bristol Business School
UWE-Bristol

April 2009
# Table of Contents

Executive Summary ........................................................................................................4  
Summary of Recommendations .................................................................................8  
Introduction ................................................................................................................11  
Literature Review ........................................................................................................11  
  Key Findings from April 2008 Literature Review ..................................................12  
  Key Findings from Literature Review Update and Analysis of Secondary Data .......13  
Information Acquisition ............................................................................................13  
Unrealistic Optimism / Personal Risk Denial .............................................................13  
Message Framing / Message Appeals (including Fear Appeals) ................................14  
  Positive framing ...................................................................................................14  
  Negative framing .................................................................................................16  
Fear Appeals ...............................................................................................................17  
  Figure 1 Extended Parallel Process Model ..........................................................18  
Reactance Effects .......................................................................................................19  
Specific Challenges in Motivating Behaviour Change among Adolescents and Young Adults ...........................................................................................................20  
Social Norms ............................................................................................................20  
Recent Case Studies with specific relevance ..............................................................21  
  Integrated Child-Centred Intervention: ................................................................21  
  Appearance-based Interventions Targeting Adolescents / Young Adults ...........25  
Vitamin D Debate ......................................................................................................27  
News and Consumer Media Editorial Coverage .......................................................28  
  Key Findings from April 2008 Review of News Media Coverage .........................28  
  Key Findings from Update of News Media / Internet Coverage .........................29  
Conclusions: Media Coverage ...................................................................................34  
Communication Effectiveness Factors: Readability and Message Framing ............35  
  Readability Issues ................................................................................................35  
  Assessment of Existing Leaflet Material: Readability and Message Framing .......36  
Research Programme .................................................................................................38  
  Focus Groups and Depth Interviews ......................................................................38  
    Expert Interviews: Pharmacists ...........................................................................39  
    Local Knowledge and Concerns ..........................................................................40  
Findings .......................................................................................................................41  
  Theme 1: Attitudes and Beliefs Regarding Sun Tanning and Sun Protection Behaviours ...........................................................................................................41  
    Figure 2: Attitudes and Beliefs Regarding Sun Tanning and Sun Protection Behaviours (including home, work and holiday perspectives) .........................48  
  Theme 2: Attitudes regarding what Sun Tanning Behaviour is ‘About’ .................49  
    Figure 3: Attitudes regarding what Sun Tanning Behaviour is ‘About’ ...............51  
  Theme 3: Attitudes towards Personal Choices, Health Risks and Health-Related Concerns .............................................................................................................52  
    Figure 4: Attitudes towards Personal Choices, Health Risks and Health-Related Concerns .................................................................55
<table>
<thead>
<tr>
<th>Theme 4: Perceptions Regarding the Use of Artificial Tanning Products</th>
<th>56</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 5: Perceptions Regarding the Use of Artificial Tanning Products</td>
<td>57</td>
</tr>
<tr>
<td>Theme 5: Information Sources Used and Perception of Information in Existing Leaflets</td>
<td>58</td>
</tr>
<tr>
<td>Analysis of Existing Leaflets</td>
<td>61</td>
</tr>
<tr>
<td>Figure 6: Information Sources Used and Perception of Information in Existing Leaflets</td>
<td>67</td>
</tr>
<tr>
<td>Recommended Strategy and Tactics: Upstream Factors and Intervention Infrastructure</td>
<td>68</td>
</tr>
<tr>
<td>Recommended Communication Strategy and Tactics</td>
<td>70</td>
</tr>
<tr>
<td>Theoretical Underpinnings (Attitudes and Beliefs Underpinning Behaviours)</td>
<td>70</td>
</tr>
<tr>
<td>Behavioural, Normative and Control Beliefs</td>
<td>76</td>
</tr>
<tr>
<td>Specific Communications-focussed recommendations</td>
<td>77</td>
</tr>
<tr>
<td>Specific Skin Cancer Detection Strategies</td>
<td>78</td>
</tr>
<tr>
<td>Benchmark surveys</td>
<td>79</td>
</tr>
<tr>
<td>Evaluation and Review</td>
<td>80</td>
</tr>
<tr>
<td>Social marketing capacity building and training</td>
<td>83</td>
</tr>
<tr>
<td>References</td>
<td>84</td>
</tr>
<tr>
<td>Appendix One: EBSCO Resources: Key Elements</td>
<td>96</td>
</tr>
<tr>
<td>Appendix Two: Appendices Contained within Volume Two</td>
<td>98</td>
</tr>
</tbody>
</table>
Executive Summary

Rising melanoma rates in the South-West region require specific targeted action to address ways of improving sun protection strategies and early detection of skin cancers. Our initial phase of activity comprised a social marketing strategy report based on extant literature and a judgement regarding its relevance to the South-West region. This report was completed in April 2008 and provided an overview of relevant context and policy issues. The report identified confounding factors, particularly in relation to the vitamin D debate and the use of sunbeds. Relevant theoretical foundations were identified along with the characteristics of specific target segments and preliminary insights into probable behavioural triggers likely to ‘move and motivate’ members of each segment to change their behaviour. Further research was recommended in order to identify ‘actionable insights’ that could be used as the basis for developing interventions. In addition, a clear need to build social marketing capacity and expertise within the SWPHO region was identified.

For the second phase of activity, the literature review of both academic and consumer literature was updated with literature published since the completion of the initial report, along with a review of relevant material relating to message framing / fear appeals, health literacy. The following points are noted:

- The significance of the use of positive versus negative message framing
- The potential impact of appearance based interventions with adolescents and young adults
- Passive versus Active information acquisition. Disinterest in relation to health risks
- Unrealistic optimism regarding personal health risks, leading to denial of the risks of personal behaviours.

The strength of social norms regarding the desirability of acquiring a suntan are so substantial across all sectors of the population, but particularly among teenagers and young adults, that messages challenging tanning behaviour are likely to be rejected. In the short term, it is recommended that the focus for young people should be on strategies for tanning safely.

Social norms cannot be changed in the short term. Therefore, a coordinated, long-term, national, regional and local strategy that addresses the role of popular media and the influence of organisations such as the fashion industry needs to be developed.

**Vitamin D:** the debate has grown considerably since the 2008 report and greater emphasis is being placed not only on the range of medical conditions that Vitamin D is claimed to cure or alleviate, but also on claims of a “Vitamin D deficiency crisis”, with some evidence of media coverage of the topic adversely impacting on sun protection messages in Australia. There is a need for clear and unambiguous statements regarding the balancing of Vitamin D acquisition and sensible sun exposure.
Sunbeds: coverage continues to be mixed, with both positive claims for their use coupled with reports of young people getting burnt from excessive use and claims of direct links between sunbed use and skin cancer increase.

Both the Vitamin D and Sunbed issues have the potential to adversely impact on sun protection interventions and need to be addressed at a national level, with supplementary support to reinforce this at a regional level.

Qualitative Research
In order to obtain specific data to inform the review and possible revision of existing strategies, a research programme was developed. This program was comprised of a series of focus groups in the Cornwall region, covering a range of topics relating to past sun protection behaviours and future intentions; knowledge, attitudes and beliefs regarding sun protection and skin cancer detection strategies; perceived norms, and influences; information sources and preferences as well as a critique of existing sun protection / skin cancer prevention and detection material (including possible evaluation of alternative message framing).

The focus groups were supported by depth interviews both with members of the public and with pharmacists in order to provide greater depth of data.

Findings indicated a close correspondence with what was expected from the review of the academic literature, including key theoretical models that can be used to guide the development of future interventions.

Key findings include the following:

- In the Cornwall region, there are major concerns regarding the potential negative impact of ‘scary’ messages on holiday makers and other visitors to the region. In addition there are concerns that resources may be diverted away from local health provision to support ‘visitors’.

- Social norms are very strong in regard to the perceived benefits of acquiring a suntan. While these are strongest among adolescents and young adults and weaken somewhat with age, they still impact on adult behaviour, with parents tending to use less protective strategies for themselves than for their children.

- There was widespread evidence of unrealistic optimism regarding personal risk from sun exposure and the risk of future skin cancer for parent’s own children, as opposed to somewhat vaguely defined ‘other people’ was not recognised.

- A significant problem exists in relation to a perceived conflict between the SPF factors recommended by health sources and by commercial marketing sources. ‘SPF15 or more’ recommendations are made in the range of existing leaflets provided by Cancer Research UK, the Cornwall PCT and other health
organisations. In relation to children, ‘SPF30+’ recommendations are made by major brands. This perceived conflict causes all other information in the health organisation leaflets to be disregarded as they are seen to lack credibility.

- Additionally, the leaflets were found to be somewhat patronising and a clear preference was expressed for tips and helpful advice for sun protection strategies (particularly for children) and for information to be made available in signage or poster format.

- There is a need to ensure that all activity, including that from other relevant organisations is integrated to provide message clarity and consistency. This should include messages from strong manufacturer and retailer brands.

- Action is needed to correct misunderstandings such as the perceived necessity to burn before tanning and moisturisers providing protection against skin damage.

- A greater role for schools in disseminating sensible sun protection messages and helping to model and support appropriate behaviours was seen as desirable, including getting active participation from children in terms of message design and delivery. Stronger links with the resources available via the Cancer Research UK SunSmart website should be encouraged. In addition, consistency in school policies, shade provision and sun protection strategies are strongly supported.

- Outdoor workers are fatalistic regarding the risk of excessive sun exposure, but would welcome clearer guidance and enforceable policy being available. For those working with children in outdoor activities, enforceable means of being able to ensure sun protection is available and used by children were also welcomed, with concerns evident about worker’s inability under current legislation and regulation to assist children to apply sun cream effectively.

- An additional major concern was evident among employers of outdoor workers: firstly in relation to the potential to be sued for not taking adequate steps to provide employees with sun protection.

Quantitative Research
A benchmark quantitative survey of attitudes, beliefs and actual sun protection / skin cancer detection behaviours was developed in conjunction with SWPHO staff. This built on the pilot study conducted with UWE students in 2008 and also aligned the questions with wider national research. The survey is currently underway; data will be analysed and a report prepared as soon as sufficient responses have been obtained, to highlight any implications from significant variances across population segments and to provide recommendations for fine-tuning current and future interventions.
Capacity and Expertise Building
In order to meet the need to build social marketing capacity and expertise within the SWPHO region, the Bristol Social Marketing Centre’s 3-day Continuing Professional Development Programme *Social Marketing Principles and Practice* was delivered in Cornwall in March 2009. This programme contributes towards the annual CPD requirement for staff.

To further build capacity and expertise within the region, workshop training will be provided in the near future for Cornwall PCT staff on conducting future focus groups. Workshop training will include the strengths and weaknesses of focus group-based research; recruitment strategies; development of moderator guides; participant information and consent processes; data gathering (e.g. audio recording); transcription and data analysis. The data analysis section will provide an overview of the main computer-based analysis packages such as NVivo, although the focus will be on the manual analysis of transcripts, thematic analysis techniques and the linking of data to theoretical models and the subsequent development of possible interventions.
Summary of Recommendations
The recommendations have been split into three sections: ‘upstream’ (policy / legislative, regulatory and environmental factors), infrastructure and communications.

‘Upstream’ Recommendations (Policy legislative, regulatory and environmental)
There are a number of upstream actions that can be taken to improve policies and procedures for sun protection for outdoor workers, and for those providing or participating in outdoor activities. This will require regulatory measures and requires discussion at national, regional and local levels with the involvement of the health and safety sector. The latter should be invited to discuss the various issues with a view to gaining support to include sun protection in all trade and worksite training (including outdoor activity provision).

Additionally, where courses or programmes are accredited or licensed, the appropriate organisation should make the provision of sun protection a requirement for the activity.

Sensible sun protection interventions should be integrated with national and regional activity, with the involvement of local businesses and organisations, including retailers.

The confounding effects of both the Vitamin D debate and of sunbed safety require action at national, regional and local levels, with both reactive (spokespeople being nominated to participate in interviews) and proactive action (provision of clear policy statements and a media kit addressing key issues, myths and misconceptions) recommended.

At a local level, concerns expressed by local businesses regarding the impact of ‘scary messages’ on the holiday trade (on which much of the region’s economy depends) indicates that interventions that do not receive local support will be ineffective.

Infrastructural Recommendations
The perceived lack of credibility of health organisation-originated leaflets and associated material relative to information provided by large commercial brands in relation to SPF factors must be resolved as a matter of urgency as this point alone could compromise future interventions.

Similarly, the conflict with respect to advice to avoid the sun between 11am and 3pm and the attempts by other agencies to encourage greater physical activity needs to be resolved.

Both of these challenges also present opportunities in developing and implementing future interventions, with the possibility of being able to leverage off the greater resources and higher profiles of many of the organisations involved. Current and potential future local partners should be invited to work with the regions PCTs and
other related organisations to help disseminate material and to ensure consistent presentation of key sun protection / skin cancer detection messages. There is the potential for future joint promotional activity and for branded or co-branded merchandise which, if it features popular and accepted ‘cool’ brands, is more likely to be acceptable to young age groups.

Schools represent an under-utilised resource and ways of improving the school environment (shade structures etc) and in promoting and modelling sensible sun protection behaviours should be explored. Greater connection between the region’s schools and Sun Smart UK regarding available teaching resources and ways of actively involving children in disseminating sun protection messages should also be developed.

The lessons learned from successful interventions used in other countries should be studied with a view to adapting them for use in the region. Two specific types of interventions are noted as having particular potential:

- Appearance-based interventions targeting adolescents and young adults who are known to not respond to health-based interventions.
- Customised interventions for specific environments such as swimming pools (see discussion of ‘Pool Cool’ intervention).

It is noted that the choice of specific interventions to be implemented for the coming and future summers will be dependent on the level of resources (both financial and personnel) available to support the activity.

In addition, all staff within the region that may be able to influence behaviours should be fully briefed on activity and given the opportunity to comment / provide input on both the interventions and their implementation.

**Communication-based Recommendations**

It is strongly recommended that incorrect beliefs are addressed in all future communications, to include: leaflets; posters; face-to-face communication; and all material supplied to the media such as the beliefs that artificial tans and moisturisers can protect against burning / skin damage.

Address unrealistic optimism regarding personal risk of sun exposure-related behaviours and the failure to accept that lack of adequate sun protection for children jeopardises their future health.

The strength of social norms regarding the personal and social value of acquiring a sun tan presents a significant barrier to intervention effectiveness and will require an integrated effort from all possible relevant organisations over many years to address. The support of the media should be obtained, although changing the way people are
portrayed in television programming, movies etc will require not just national but international collaboration.
Align SPF advice in all future leaflets with the advice provided by major commercial organisations to ensure that the perceived conflict does not jeopardise the acceptance of advice from existing health sources.

Simplify wording to ensure that readability does not compromise comprehension; convert leaflets to posters for outdoor workers and for use at key outdoor locations such as beaches. Gaining the assistance of local authorities and organisations such as RNLI to display material is recommended.

Provide clear advice to outdoor workers and their employers regarding current rights and responsibilities under existing legislation and regulations. Improve availability of sun protection measures (sun cream, clothing and shaded areas) at key outdoor sites

Provide practical advice and tips for parents who have difficulty in getting children to practice sun protection strategies, emphasising that sensible sun protection does not mean stopping enjoyable activity. Involve local media in promotional activity around this theme.

Increase awareness of the relevance of health risk information for individuals and for children, possibly using appearance-based interventions.

Utilise schools as a key partner in communicating sun protection messages and modelling appropriate behaviours and seek active participation from children in the design and distribution of messages. Encourage local businesses, including local newspapers, to display winning competition entries and to donate prizes where competitions are used.

Involve all health professionals, including retail pharmacy staff, health visitors lifeguards etc in communicating practical advice and tips. Develop a tailored version of practical advice that can be used by hospital staff to communicate with parents of new born infants regarding sun protection strategies as part of existing skills and information delivery, with messages being later reinforced by health visitors etc. Extend this to incorporate all childcare facilities.
Introduction

The recommendations provided in this report build on the material presented in our April 2008 report and are based on insights into: the attitudes and beliefs underpinning current sun protection behaviours; effective interventions reported in the literature; and on both the qualitative and quantitative data collected within the Cornwall region. To further strengthen our analysis and recommendations we have used this material and a small number of relevant theories proven to provide effective underpinnings for previous interventions to develop an integrated set of interventions targeting specific identified population segments in tandem with wider educational activity.

Literature Review

For both the initial 2008 report and for this report, an extensive critical review of the literature relating to sun protection and skin cancer detection was undertaken, using the following databases:

- EBSCO and EBSCO Medical (including Medline, Cinahl Plus, British Nursing Index Business Source Premier, Education Research Complete). A listing of the key elements of the EBSCO resource is included as an appendix.
- JSTOR
- Science Direct
- Wiley Interscience
- Medline
- Psycinfo

A secondary search was conducted using Google Scholar to capture reports and reviews from reputable organisations such as the WHO and also any recent conference or working papers on the topic as these are not usually captured by the conventional databases listed above which focus primarily on peer reviewed journals. A brief search of recent news media coverage was also undertaken to identify trends in the reporting of sun protection and skin cancer detection issues in consumer media.

For the main electronic database searches, initial search terms, used individually and in combination, included: sun protection, sun tan, sun safety, sun screen, skin cancer, detection, intervention, success, effectiveness. After an initial analysis of the material gained through these terms, the following additional terms were added: risk assessment, optimism bias, ultraviolet rays - adverse effects, suntanning, aging prevention, solar radiation - physiological effect and other related terms.

Over 3,000 possible papers were subject to initial review for the first phase of the study, with over 200 then selected as particularly relevant and subject to detailed
analysis. An additional 150 papers were subject to detailed analysis for the second phase.

**Key Findings from April 2008 Literature Review**

The promotion of sensible sun protection behaviours is constrained by:
- The perception that skin cancer risk in the UK is low. The population is not sensitized to skin cancer as a major health risk in the same way as Australasian populations
- The lack of central government support, endorsement or funding of interventions
- Strong normative beliefs, particularly among young people about the social value of suntans and prevailing social norms regarding the attractiveness of suntans and acceptable behaviours modelled among peers
- A lack of integration of messages and behaviours among stakeholder groups (e.g. schools, where there is evidence that policies are inconsistent and, in some schools, children may actually be discouraged from bringing sunscreen to school)

Additionally, recent media coverage hyping the benefits of Vitamin D as both a preventative and curative element (including cancers) will also impact on the way future interventions are received.

Sunbeds were noted as being problematic as knowledge of the dangers of excessive use does not lead to behaviour change. As long as the psychological association between having a tan and health continues to be reinforced in the promotional materials used by tanning salons, the use of sunbeds is likely to continue to increase, especially amongst teenagers and young adults due to the normative beliefs noted above.

Skin cancer detection was noted as an issue requiring multiple strategies in order to raise awareness, reduce optimism bias (especially among young people), improve self efficacy in relation to self checking for suspicious lesions and improving education and support for GPs making initial tentative diagnoses.
Key Findings from Literature Review Update and Analysis of Secondary Data

“Advice, like youth, is probably just wasted on the young”

The following sections summarise recent and relevant findings from the academic literature. They have been used to guide both the qualitative and quantitative research activity in order to determine their specific relevance and potential impact on future interventions in the South-West region.

Information Acquisition

The provision of information alone is insufficient; awareness is necessary, but not of itself sufficient. Information about sun protection and skin cancer is largely passively acquired via consumer media, with active searching occurring only when it is needed to resolve a specific problem, suggesting that over-reliance on Internet-based resources may not be effective with all target segments. Consideration must be given to reaching population segments where they live, work and relax, making the message personally relevant, motivating and actionable.

There are gender issues that need to be considered as well, with women having higher levels of knowledge about sun exposure risks and also higher levels of belief regarding personal susceptibility; they should therefore be considered as a conduit through which to reach male members of target segments.

Unrealistic Optimism / Personal Risk Denial

An additional challenge to effective communication of health risks from excessive sun exposure relates to unrealistic optimism, bias and denial of personal risk. These effects are also referred to as optimistic bias or disengagement beliefs, in which individuals estimate their own risk of negative health outcomes as lower than the wider population, a topic well documented in the literature. Thus, people may be aware of the risks of excess sun exposure but may fail to use the knowledge in a consistent way to reduce their own personal risk. Similar to social norms, unrealistic optimism is resistant to change and information provision alone, such as through mass media, has generally little impact. The literature indicates that interventions focusing specifically on skin cancer risk and detection should stress both the high risk of skin cancer and also the personal risk – and the benefits of using effective sun protection strategies.
Message Framing / Message Appeals (including Fear Appeals)

Message framing has its origins in prospect theory, which developed from extensive research into responses to people’s perceptions of the prospect of positive (gain) or negative (loss) outcomes stemming from specific behaviours. It generally refers to the way the health (or socially relevant) message should be framed: i.e. the message can either emphasise the advantages of doing a certain action (e.g. for example loosing weight as a result of regular exercise) or it can emphasise the negative consequences of not taking a certain action (e.g. having a higher likelihood of cardiovascular disease as a result of not taking regular exercise).

Both approaches have been used successfully in various campaigns. However research that has explored the effects of either positive and negative message framing has lead to conflicting results. It is now usually recognised that no one single framing approach is applicable across all intervention types.

We must recognise that both the way in which persuasive communication messages are framed and the medium by which the communication occurs can have a significant impact on the effectiveness of the communication, with strong evidence that positively framed messages are more effective than negative framed messages for prevention behaviour such as sun protection strategies, with the reverse being evident for detection strategies such as skin cancer screening. As information is acquired passively, target segments are unlikely to invest time and resources in seeking information (such as via websites). Information and resources must therefore be placed where they are likely to be exposed to it.

Even in negatively framed messages, fear appeals should be used with caution as there is a danger of perceptual barriers being activated to block unpleasant images. For both prevention and detection messages, there is a danger of reactance effects with the message not only being rejected, but resulting in reinforcement of behaviours being targeted (such as sunbed use being desirable). Strategic and tactical issues relating to message framing are discussed in the section relating to Communication Effectiveness Factors.

Positive framing

Positive framing emphasises the positive outcomes of a given action, for example losing weight as a result of exercise, being healthier after making better dietary choices, etc. Positively framed messages appear to be stronger for preventative behaviour and health affirming messages (i.e. no risk in undertaking the behaviour), such as stopping smoking before the onset of ill-health related to smoking. However, reviews of previously published studies suggest that this may not apply in all situations, and in fact, the highly acclaimed and generally successful “Don’t die of
ignorance” safer-sex campaigns of the 1980s were largely negatively framed despite promoting a prevention message.

This may potentially be explained by the findings that positively framed messages will not be effective if the recipient is unsure about behavioural norms. For example, if the usage of condoms is not considered a behavioural norm, then a positively framed preventative health message may be confusing, as the recipient may question why if the solution to the problem is simple (e.g. using a condom) it is not done so all the time.

Additional factors potentially impacting on potential intervention effectiveness include whether new behaviour is being promoted or whether ceasing current behaviour is targeted. Additionally, it has been argued that positive framing fosters a greater self-efficacy, which in turn is a major factor in compliance behaviour and therefore long-term behaviour change. Self-efficacy has been identified as a factor that should be stressed more strongly by health professionals during their discussions with patients and expectations regarding self-efficacy have long been proven to be a major factor in the outcomes of health behaviour change interventions.

The level of personal involvement in a message topic also impacts on the type of framing that is more effective. Evidence suggests that in low involvement conditions positive messages are more effective, whereas the reverse is true for high-involvement conditions. Again, this may support why for example positive framing appears to have been effective in the past for sunscreen use, i.e. that messages framed as:

“If you use sunscreen with SPF or higher, you increase your chances of keeping your skin healthy and your life long”

“Using sunscreen decreases your risk for skin cancer and prematurely aged skin”

were more effective than:

“If you don’t use sunscreen with SPF 15 or higher you increase your chances of damaging your skin and bringing on an early death”

“Not using sunscreen increases your risk for skin cancer and prematurely aged skin”.

However, others caution that positive message framing may have a boomerang effect if the message conflicts with pre-existing knowledge, attitudes and beliefs or with behavioural norms. For example, some anti-smoking interventions have not only been ineffective, but also apparently hardened young smokers’ determination to continue to smoke. Similar effects have been found in relation to anti drug interventions, such as a 1980s American campaign featuring posters of a ‘wasted’ heroin addict which had no effect other than to make the posters a collectable item.
At times, message effects have differed across genders, such as anti-speeding interventions which have revealed boomerang effects among young males but not females due to reactance effects, discussed in a following section\(^40\). We would suggest that there are parallels that can easily be drawn in relation to the impact of the ComputerTan activity discussed in the next section and recommend that research be undertaken to determine what the long term (as opposed to short term recall) effects of this intervention were so that appropriate discussions can take place regarding the approach used by all relevant organisations in the future.

While it would, until recently, have been reasonable to assume that positively framed messages would be more effective than negative framed messages in relation to the adoption of sensible sun protection strategies, i.e. no risk, reasonably certain outcome of avoiding sunburn, maintaining health etc, the complications introduced by the Vitamin D debate means that the application of sunscreen may now be perceived as a risky behaviour, therefore a ‘rider’ should be added to any messages clarifying this point, in line with our recommendations regarding the inclusion of this type of information in media kits.

**Negative framing**

Conversely to positive message framing, negative message framing has been found to be more effective for illness-detecting behaviour\(^41\), where there is uncertainty about the outcome of the behaviour, but awareness of the danger of not getting a problem detected early, for example for screening programmes that prevent a more serious outcome, such as regular mammography for women over 40 or cholesterol checks. However, there is also evidence of significant barriers to these types of messages among adolescents and young adults\(^42\), as noted earlier, reactance effects appear to offer an explanation for this.

Often, negative framing relies heavily on the usage of fear appeal, such as the fear of dying from a specific cause. It has been suggested\(^34\) that, if such a condition is high-involvement, for example in a case where a close relative has died from stroke attributed to high-blood pressure, the fear and high-involvement of also dying from the same cause may have a highly motivating and behaviour changing effect.

There appears also to be cultural\(^43\), context and situation variations, and additional confounding factors including whether new behaviour is being promoted or whether ceasing current behaviour is targeted\(^44\). Table 1 summarises the existing state of knowledge regarding the situations in which positive or negative framed messages have been found to be most effective.
Table 1: Summary of Positive / Negative Framing

<table>
<thead>
<tr>
<th>Positively framed messages more effective</th>
<th>Negatively framed messages more effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low motivation</td>
<td>High motivation</td>
</tr>
<tr>
<td>High perceived efficacy</td>
<td>Low or uncertain perceived efficacy</td>
</tr>
<tr>
<td>No risk in behaviours</td>
<td>Uncertain outcomes</td>
</tr>
<tr>
<td>Certain outcomes</td>
<td></td>
</tr>
<tr>
<td>Acceptable in relation to perceived</td>
<td></td>
</tr>
<tr>
<td>behavioural norms</td>
<td></td>
</tr>
<tr>
<td>Prevention focus (maintaining good health, appearance)</td>
<td>Detection / early diagnosis</td>
</tr>
</tbody>
</table>

Fear Appeals

Fear appeals should be used with caution as, while early studies suggest that fear appeals have the potential to influence attitude change and subsequent behaviour, there are numerous examples of interventions based on fear appeals not achieving the objectives, however more recent research presents a less optimistic outlook. Most studies which suggest effectiveness of these appeals have been laboratory-based, often with methodological shortcomings, and focussed on short-term effects. It is suggested that real-world effects are weaker – and are least effective with people with low self-efficacy, which in turn is less likely to be positively affected by negatively framed messages.

Many unintended effects of health communication campaigns are directly, but not exclusively, attributable to fear appeals, i.e. dissonance, discomfort and distress, boomerang effects, epidemics of apprehension and desensitisation. Additionally, strong fear appeals are more likely to be regarded as unethical if the target populations do not believe they can readily undertake the recommended behaviour or that the behaviour will be effective in minimising the perceived threat.

The Extended Parallel Process Model, shown in Figure 1, may offer an explanation for the fact that some fear appeals are effective and others not. This model suggests that, if a threat is seen as trivial or not relevant to the individual, the risk message will be ignored. Even when susceptibility is recognised, if an individual doubts their ability to minimise the threat or is uncertain regarding the outcome of their actions, they will control concerns and fears by denial and rejection of the message. Factors recognised as impacting on the ability of individuals to take effective steps to minimise the risk include both social (e.g. peer pressure and social norms) and physical (e.g. work environment).
Fear appeals appear to be effective and appropriate only in situations where the solution to a fairly critical problem is relatively easy and effective solutions are available. An additional factor is the possible erosion of the effectiveness of fear appeals over time. The ongoing usage of fear appeals can in fact lead to complacency as people start to no longer respond with fear, but rather with indifference to social marketing campaigns.

Conversely, the usage of fear appeals may well lead to heightened anxiety in some individuals, which in turn may cause additional burden on the health system that has to deal with those individuals. Stronger negative emotions or concerns may be more evident in those not in the priority target group. A well known example of this are “worried well” patients who may attend screening clinics for reassurance rather than because they have symptoms of a potential medical problem.
Reactance Effects

The theory of psychological reactance originated in the 1960s\textsuperscript{55, 56}. It states that direct or potential perceived threats to personal freedom, such as consumption of specific products or engaging in particular behaviours, may be resisted. Furthermore, people may then become motivated by the perceived threat itself, rather than the actual consequences of the threat, to assert their freedom and regain control of their own decision making and thereby of their threatened freedom.

Engaging in the threatened behaviour is one means of re-establishing this freedom\textsuperscript{57}. Reactance effects appear to be strongest when the threatened freedom is perceived as important and the affected individual perceived that their 'counterforce' efforts will achieve personal control. Conversely, if an individual does not perceive that their actions will be effective in countering the threat, reactance will be minimal\textsuperscript{58}.

In terms of persuasive communication such as mass media public health intervention programmes, reactance may generate actions that resist or are the opposite of those desired by the individuals or organizations seeking to influence both attitudes and behaviours. Reactance effects explain not only why some public health interventions may not be effective, but also why they may produce effects contrary to those intended\textsuperscript{59}. 
Specific Challenges in Motivating Behaviour Change among Adolescents and Young Adults

For teenagers and young adults specifically, skin cancer development risk is not seen as having personal relevance to them and the perceived norms regarding the value of a suntan are sufficiently strong to override any rational arguments about personal risks. Therefore any health-risk related messages targeting this segment are likely to be ignored at best, or may even trigger active resistance to the message and therefore continuation of unsafe tanning practices.

There are numerous studies that show that this group is receptive to interventions that focus on appearance-based factors. We have selected three specific case studies which are summarised in the next section to illustrate both the use of appearance-based interventions and the theoretical concepts underpinning their development. These should be considered in tandem with other successful interventions noted in the April 2008 report.

Social Norms

Given the well documented impact of social norms on a range of behaviours particularly among young people, short term interventions in isolation, aimed at changing the perceived social value of a suntan are likely to be ineffective. Social norms will only be changed through a coordinated long term national and regional integrated strategy. Such a strategy must also target popular media, news and editorial / programme content and the influence of organisations such as the fashion industry to ensure that a coherent, consistent and credible message is provided through all communication channels used by the target segments.
Recent Case Studies with specific relevance

While these cases originate from the USA, they have relevance to the current UK situation. The interventions reviewed targeted adolescents and young adults and drew on the theoretical concepts reviewed in the April 2008 report (p. 16), focusing on addressing attitudes, beliefs and behavioural norms, together with providing personally relevant motivation to change behaviours.

Integrated Child-Centred Intervention:

“Pool Cool” (Escoffery et al. (2008))

The Pool Cool programme is an example of the type of integrated intervention that has potential to involve children and their families, together with those running outdoor programmes aimed at children and to communicate sensible sun protection messages in a way that is likely to encourage behaviour change.

A two year period of this US intervention centred on public swimming pools was evaluated (refer to the initial evaluation in April 2008 report, p. 29). The emphasis of the intervention to create a program which was fun, easy and acceptable to young people using the pools, which did not promote avoiding the sun, but instead focused on improving sun protection habits, decreasing sunburns and improving the poolside environment such as the provision of increased amounts of shaded areas (which were popular). This is consistent with other recent research that indicates that if shaded areas are provided in recreational settings for adolescents and young adults, the areas are well patronised. Education and activity components for Pool Cool were supported by user-friendly sun safety tips and signs, and on-site sunscreen dispensers (which were used by 95% of patrons). UV exposure cards and patches also appeared to be popular with pool patrons.

The fun aspects of this intervention echoes other successful interventions focussed on children such as “Block the Sun, Not the Fun” reviewed in the April 2008 report (p. 22) and reinforces a central tenet of social marketing, i.e. too many interventions are seen as boring and difficult (focussing on stopping behaviours that are enjoyed and valued) rather than making behaviour change fun, easy and popular.

Since reviewing the literature, we have contacted the team at the Rollins School of Public Health at Emory University who developed the original Pool Cool initiative. Responses were positive, with access provided to the supporting website (“Pool Cool Research”) and samples of the types of material used. We recommend that this dialogue be maintained and extended with a view to gaining more detailed knowledge of the way the intervention operates with the aim of being able to develop a similar intervention within the South-West region for future years, subject of course to appropriate funding. Samples of material used are shown overleaf.
Leaders’ Guide and Supporting Material

Educational material
Activity Resources

Branded merchandise
Poolside signage

- Do Not Enter
- Stop Sunburn
- Seek Shade
- Warning: Sunburn Ahead, Sunscreen is Advised
Appearance-based Interventions Targeting Adolescents / Young Adults

Previous studies have identified the difficulties of communicating effectively with adolescents and young adults about the potential impact of a range of behaviours involving various degrees of risk. Researchers have experimented with a range of intervention approaches; one that appears to have promise is the use of appearance, rather than health-risk focussed interventions. Samples of these types of interventions are briefly reviewed below.

Mahler et al. (2008) targeted university-based adolescents and young adults with an appearance-based intervention using written information coupled with UV photographs to highlight existing skin damage from sun exposure, i.e. providing directly observable evidence of actual personal consequences of behaviour. Excerpts from focus groups discussing the positive aspects of sun protection were also used to address social norm issues.

Rather than try to prevent outdoor activity, the intervention provided advice on effective sun protection strategies. Not only did self-reported use of sunscreen increase significantly, but students also shared information with friends and families, thus helping to extend the impact of the intervention.

Olsen et al (2008 and 2007), in two separate studies targeting high school students used similar strategies to the Mahler et al study, combining educational material stressing that “teens can have fun outdoors and still protect themselves” (p. 764) with information regarding photo-aging and UV-based facial scans. Intention to use sun screen (the only measure used) showed a significant increase.

Channel 4 Documentary
The strength of social norms, and disregard for potential personal health risk among young adults is graphically illustrated in the Channel 4 documentary “Bodies Behaving Badly” first shown on Monday 27 October 2008 which drew on interviews with teenagers on holiday in Magaluf, Spain. Key findings included:

- 8 out of 10 teenagers used no sun protection on holiday
- Those that did used only low SPF factor sunscreens
- 70% saw the primary reason for holidaying overseas as acquiring a tan
Direct quotes from the participating teenagers included:

- “look healthier with a glow”
- “sexier look”
- “look more natural”
- “feel more confident”

As will be shown in the discussion of the focus group research, these perceptions are not restricted just to teenagers.

The documentary participants did not find statements such as sunburn equating to pouring boiling water on themselves or increased risk of developing malignant melanomas as salient, let alone worrying, with one respondent summing up her attitude as:

“Everyone’s got to die of something and I’m going to die looking good”

However, when the same teenager was shown the existing sun damage to her skin, coupled with images of what her regular sunbed-using mother would look like now if she had not used sunbeds regularly, the reaction was:

“that’s horrendous – you’re scaring me”

This is consistent with the approach used in the Olsen et al. and Mahler et al. studies, with two significant implications for the design and delivery of future interventions. Firstly, fear-based and health risk appeals, including those used by interventions such as ComputerTan are unlikely to be effective in changing the behaviour of this population segment (although they may raise awareness in the short term).

Secondly, the appearance-based intervention strategies have merit in terms of being one of the few types of interventions that have consistently proven effective with adolescents and young adults. Should funding be available, we recommend that this strategy be explored in more detail and possibly trialled with a view to wider implementation in future years.
Vitamin D Debate

The Vitamin D debate noted in our April 2008 report is not restricted to consumer media, although an update on coverage via consumer media is provided in the next section. Of 992 academic articles relating to Vitamin D and Sun identified through the available databases, some 150 have been published since the beginning of 2008. The link between Vitamin D levels and a wide range of medical conditions tends to be somewhat more cautiously reported in the academic literature than in the consumer media see, for example, 79. Studies that have failed to find a direct relationship between Vitamin D levels and cancer prevention tend not to be reported by consumer media80.

Findings from Australia should give cause for concern. A large-scale (over two thousand respondents) survey of the Queensland population found significant increases since 2004 in the percentage of the population believing that the use of sun protection creams increases the risk of Vitamin D deficiency and that Vitamin D helps prevent cancer. In addition, many people significantly overestimated the amount of sunlight needed to maintain healthy Vitamin D levels. The authors suggest that misconceptions regarding these issues may influence people to reduce existing sun protection behaviours.

Further complications are evident in the academic literature with assertions such as:

"Taking into account that moderate and regular sunbed exposure in the winter might not necessarily lead to any large increase in the number of CMM deaths, one should reconsider the restrictive attitude towards sunbed use"81, p. 129.

Further, these authors draw on estimates from an earlier study82 to justify efforts aimed at raising winter levels of Vitamin D (via sunbed use or Vitamin D supplements) to those achieved in summer with the following claim:

"According to the estimations of Giovannucci and coworkers this would reduce the total number of cancer deaths by 29% in the US, corresponding to a reduction of the annual number of cancer deaths in Norway by 3,000 from the present level of 11,000. This is more than 10 times the number of CMM deaths in Norway per year (about 250)"81, p. 129.

Such claims are not lost on consumer media, as Tables 2 and 3 show.
News and Consumer Media Editorial Coverage

Key Findings from April 2008 Review of News Media Coverage

Little balanced debate was evident in the consumer media coverage reviewed, particularly in relation to the coverage of Vitamin D which was both simplistic and sensationalised. Claims made included the following:

<table>
<thead>
<tr>
<th>Table 2: Examples of Media Headlines Regarding Benefits of Vitamin D</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Vitamin D may fight breast cancer” (BBC News 23 March 2004)</td>
</tr>
<tr>
<td>“Vitamin D ‘can lower cancer risk’” (BBC 28 December 2005)</td>
</tr>
<tr>
<td>“Daily intake of Vitamin D ‘can cut cancer risk by half’” (The Guardian, 28 December 2005)</td>
</tr>
<tr>
<td>“Lung cancer ‘link to lack of sun’” (BBC News 18 December 2007)</td>
</tr>
<tr>
<td>“Vitamin D ‘may help slow ageing’” (BBC News 8 November 2007)</td>
</tr>
<tr>
<td>“Sunshine – vitamin D and heart disease protection included” (Daily Telegraph, 7 January 2008).</td>
</tr>
<tr>
<td>“Low Vitamin D heart health risk” (BBC News 8 January 2008)</td>
</tr>
<tr>
<td>“Evidence growing for Vitamin D-heart health link (Reuters, 1 December 2008)</td>
</tr>
</tbody>
</table>

Of more concern was the direct challenge to official sun protection messages in some popular media, given that mass media is claimed to be at least as important as health care providers as information sources regarding health-related topics and the fact that media coverage of issues has been proven to create and maintain assumptions, beliefs and perceptions. A recent paper criticises prevailing advice to increase Vitamin D levels, suggesting that only that low levels of Vitamin D in patients with autoimmune disease may be a result of a disease rather than causing it, with Vitamin D supplements potentially making the condition worse. Additionally, these authors warn that:

"Uncertainties resulting from epidemiological studies underscore the danger in recommending use of a substance when the exact manner in which it works to ameliorate disease is not fully understood" (p. 5).

Little coverage was evident regarding the risks of sunbed use, beyond isolated coverage of individual cases of sunbed misuse.

An additional area of concern is the number of articles on both media and other websites that question the efficacy of sunscreen lotion, both in terms of inadequate quantity and frequency of application ("The truth about sunscreens": The Independent, originally posted 29 June 2000 but still in place in early 2009) and reporting of studies that indicate sunscreen lotion is not effective in preventing UV rays penetrating the skin ("Sun lotions ‘are not effective’": BBC News, first posted 29 September 2003 but still in place early 2009).
Key Findings from Update of News Media / Internet Coverage

Extravagant claims continue to be made in the Vitamin D debate, with the range of medical conditions claimed to benefit from Vitamin D expanding from those originally cited (refer Table 1). A sample of recent claims is shown in item a) of Table 2 below. Coverage of clinical trials such as those conducted under the auspices of the American Women’s Health Initiative which found little or no benefits of Vitamin D for post menopausal women have been reported in academic outlets but have received no media coverage in the UK.

Also evident are ongoing attempts by the tanning industry to counter moves to tighten regulation in their area, with both direct statements in the media regarding the potential benefits of the use of sunbeds as indicated in item b) in Table 2, and implicit claims evident on websites such as: “Are Sunbeds Safer than the Sun?” http://www.thetanfactory.com. Sunbeds receive additional implicit support and issues regarding sun protection become somewhat trivialised with reports of courses which teach students how to operate sunbeds and how to apply fake tan (item c in Table 2). There appears to be a lack of any coordinated response to this material.

It is interesting to note that statistics showing that more people in the UK die of melanoma than in Australia, attributable both to earlier skin cancer detection and sustained sun protection awareness campaigns in the latter country were reported only in the Australian media and not in the UK (item d) of Table 2).

A new topic evident in media coverage since November 2008 relates to fake tan injections (using a synthetic hormone Melanotan) with a combination of Internet-based material claiming the benefits of tanning injections (for example: “Tanning injections for a safe effective sunless tan”) which includes claims that one of the best defences against skin cancer was a natural tan which has been slowly developed over weeks” (http://www.expandmywealth.com). News media coverage, as shown in item e. of Table 2 has been considerably less supportive of the drug, noting that it is untested, unlicensed, and appears to change skin moles as well as possibly masking skin cancer symptoms.

In our April 2008 report, we stressed the strength of the psychological association between having a tan, self esteem and perceived physical attractiveness. We also noted that changing these perceptions will be extremely difficult, requiring investment over time due to the strength of social norms and perceptions which over-ride consideration of personal actions, such as reducing sun exposure, if they are not compatible with peer behaviour. Although the exact number of UK users is unknown, the fake tan injection’s apparent popularity reported in the above media examples is an indicator of the enduring strength of the psychological appeal of acquiring a tan – in spite of the growing evidence of potentially dangerous side effects from its use.
Additional factors that may be usefully included in general communication such as the dangers of using non SPS-rated lip gloss that may increase rather than protect from exposure to UV rays do not appear in major media but can be found in niche, often on-line only publications93 which are unlikely to reach significant numbers of people.

**Table 3: Recent News Media Coverage of Sun-related Issues**

<table>
<thead>
<tr>
<th>a. Vitamin D</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>“Experts call for mass trials of Vitamin D supplement”, Times on line 25 November 2008</td>
<td></td>
</tr>
<tr>
<td>“The great health debate: is sunshine a miracle cure?” The Guardian, 8 February 2009</td>
<td></td>
</tr>
<tr>
<td>“Lower Vitamin D Levels Related to Higher Breast Cancer Risk” (Cancerpage.com / Reuters), 9 January 2009</td>
<td></td>
</tr>
<tr>
<td>“Fat linked to vitamin deficiency”, Sydney Morning Herald, 11 January 2009</td>
<td></td>
</tr>
<tr>
<td>“Vitamin D may protect against the common cold” CNN <a href="http://cnn.com">http://cnn.com</a> 24 February 2009</td>
<td></td>
</tr>
<tr>
<td>“Vitamin D pills cut bone fractures Web MD 24 March 2009 <a href="http://www.wedmd.com">www.wedmd.com</a></td>
<td></td>
</tr>
<tr>
<td>“Inadequate Vitamin D levels linked to high use of narcotic medication by patients in chronic pain”, Science Daily 27 March 2009</td>
<td></td>
</tr>
<tr>
<td>“Vitamin D could help prevent falls in the elderly” <a href="http://insciences.org">http://insciences.org</a> 14 April 2009</td>
<td></td>
</tr>
<tr>
<td>“Vitamin D linked to asthma severity” <a href="http://www.irishhealth.com">http://www.irishhealth.com</a> 24 April 2009</td>
<td></td>
</tr>
<tr>
<td>Vitamin D hope in prostate cancer BBC News <a href="http://newsvote.bbc.co.uk">http://newsvote.bbc.co.uk</a> 27 April 2009</td>
<td></td>
</tr>
</tbody>
</table>

*Increasing number of Americans have insufficient levels of Vitamin D” Science Daily 24 March 2009

* “Vitamin D deficiency soars in the US, study shows” Scientific American 23 March 2009

*these two are representative of coverage in electronic journals which relate to a study reported in the Archives of Internal Medicine, although only the Scientific American paper notes criticism of the AIM study on the grounds that changes in the tests used to measure Vitamin D levels in the blood accounted for overstating the magnitude of the problem.

Controversy is evident regarding the analysis of the actual, versus claimed, benefits of Vitamin D: a US / Canadian joint review of the benefits of Vitamin D intake has been criticised for not including researchers who have advocated the benefits of Vitamin D consumption [http://www.theglobeandmail.com](http://www.theglobeandmail.com) 3 April 2009.
Table 3: Recent News Media Coverage of Sun-related Issues (part 2)

<table>
<thead>
<tr>
<th>b. Sunbeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Top cancer doctor says you SHOULD have a sunbed session” Mail Online 24 January 2009</td>
</tr>
<tr>
<td>“Scientists reject claim that sunbed use increases melanoma risk” 27 January 2009 <a href="http://www.responsesource.com">http://www.responsesource.com</a></td>
</tr>
<tr>
<td>“Girl, 14, burnt in tanning salon” BBC News 10 February 2009</td>
</tr>
<tr>
<td>“Sunbed horror: red but not hot” The Sun 20 February 2009</td>
</tr>
<tr>
<td>“Sunbeds causing surge in skin cancer”, Marie Claire, 8 April 2009</td>
</tr>
<tr>
<td>“UK women using sunbeds face a ‘tanorexia time bomb’”, Nursing Times.net 11 April 2009</td>
</tr>
</tbody>
</table>

A recent addition to this debate is:

“Nail salons ‘increase risk of skin cancer’ as woman develops hand tumours after eight visits”. Mail Online 29 April 2009

<table>
<thead>
<tr>
<th>c. Implicit support for sunbeds and trivialisation of sun tanning / skin cancer issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Courses in tanning ‘worth the same as A-level maths’ in school league tables” Telegraph.co.uk 17 February 2009.</td>
</tr>
<tr>
<td>“Now tanning courses are ‘equal’ to maths A-level” Mail Online 17 February 2009</td>
</tr>
</tbody>
</table>

Other related material that may contribute to the perception that skin cancer is not a serious condition include:

“Cream has 84% success rate preventing skin cancer” [http://www/intelligence.ca](http://www/intelligence.ca) 31 March 2009


The concern with these is that the claims made on electronic sites are not subject to the same level of regulation as claims made in mainstream marketing communication such as advertising in traditional media.
Table 3: Recent News Media Coverage of Sun-related Issues (part 3)

d. Melanoma Rates
“Poms topple Aussies in melanoma deaths” Herald Sun (Australia) 20 December 2008
“Cricketers get skin cancer checks” (Somerset County Cricket Club screening) BBC 1 April 2009

e. Tanning Drug
“Fake tan jab causes skin cancer fears” Time Online 8 February 2009
“Illegal tan jab hides cancer signs” Marie Claire, 28 January 2009
“British women injecting hormones to get a tan” ABC News (Australia), 5 January 2009
“Tan jab puts woman in hospital” The Shields Gazette, 6 February 2009
“Worry over tan jab mole changes” BBC News 28 January 2009
“Tanning Drug could ‘mask the signs of cancer’” Mail online 28 January 2009
“Illegal tanning drug can change appearance of moles, scientists warn Telegraph.co.uk 27 January 2009
“Thousands of women are injecting illegal instant tan drug that could wreck their health” Mail Online 21 January 2009

An additional recent development has been the ‘hoax’ website ComputerTan.com set up by the charity Skcin, launched in early February 2009 with the promise of providing technology to enable people to get regular tans from their computers but which, after appearing to configure computers presented graphic images and statistics regarding the dangers of skin cancer. The hoax received media coverage, as shown in Table 4 below:

Table 4: Sample Media Coverage of ComputerTan.com

“Computer screen ‘tan’ tricks thousands” BBC News 6 February 2009
“Computer tan Hoax fools 30,000 into seeing dangers of skin cancer” Brand Republic 5 February 2009
“Hoax tan campaign generates 450,000 hits” Charity Finance 11 February 2009
“Computer Tan website scores hit” BBC News 28 March 2009 (reporting more than 1 million hits)

However, while the media accounts suggest that the site has been effective in gaining initial attention and site visitors, the initiative raises several issues. Firstly, this appears to have been an initiative developed without advising other organisations, even though the initiative potentially impacts on them. Secondly, while the website may have attracted initial visitors, the graphic images of skin cancers may very well have generated negative responses from those visiting the site, consistent with
reactance theory discussed in a later section of this report. Additionally, the response to having been tricked may also have engendered negative reaction.

The Skcin activity raises the question of Internet-based information. While it is known that the quality and accuracy of Internet-based information varies widely, consumers have no way of readily assessing the quality and accuracy of Internet-based information or of identifying any specific ‘agendas’ behind particular Internet sites – or media articles. We noted earlier the reported strength of the media as a source of health-related information.

What is not known is what sources of information are used by those who seek, by whatever means, to acquire a tan, what value they place on information from various sources and whether or how they evaluate conflicting advice and information, let alone heed warnings such as those for the fake tan injection. We recommend that this is further investigated in order to ensure that communication channels are selected that have the maximum chance of reaching the target segments.

Evidence regarding the impact of shock tactics in marketing communication is sparse and somewhat mixed, centering largely on the tactics of large advertisers such as Benetton in the early 1990s and, more recently, Barnardo’s child poverty campaign. Evidence regarding the impact of shock tactics in marketing communication is sparse and somewhat mixed, centering largely on the tactics of large advertisers such as Benetton in the early 1990s and, more recently, Barnardo’s child poverty campaign. Laboratory studies of shock advertising for HIV/AIDS prevention found increase in attention and short-term recall, but did not test for longer term effects such as behaviour change. Effectiveness of shock-based campaigns appears to be dependent on the importance and perceived relevance of the message to recipients. It is possible that the brand equity of Skcin may actually be damaged in the long term due to disgust at the use of graphic imagery without prior warning. Additionally, in sun protection as well as other health-related areas it is well documented that information-based interventions may raise awareness but seldom on their own are able to change behaviours. Further, consistent with Protection Motivation Theory, responses may actually be maladaptive and result in reinforcement of existing behaviours rather than positive behaviour change. ‘This boomerang effect’ is well known in the health area, and is known to be particularly strong when the behaviour that is being targeted is important for self-esteem, such as having a suntan.
Conclusions: Media Coverage

The contradictory messages being sent regarding sun exposure, potential Vitamin D deficiencies and the pros and cons of sunbeds are likely to confuse the general public and, more seriously discredit official sun protection advice. Indeed, there are already calls within the medical literature for: consumer education on the risk of Vitamin D deficiency; the dietary sources of Vitamin D; and the possible adjustment of sun safe messages.

Combinations of proactive and reactive strategies are recommended. It is important that clear and consistent messages are sent using as many channels of contact and communication as possible to counter the misconceptions generated by the media coverage. The media should be asked to become actively engaged in the issue and in clarifying the significance of the various topics for individual health risks.

There would also appear to be an urgent need to prepare and disseminate at national, regional and local levels a media kit that addresses key issues, myths and misconceptions and which then provides plain English commonsense advice to all segments of the population. The media kit should identify contacts in all areas that are able to participate in media interviews and debates, assist/advise re editorials and clarify any points of confusion.

As noted earlier in the review of news media and internet coverage, the strength of the association between acquiring a suntan and perceived attractiveness is strong. Any message that attempts to challenge directly the social norm that has evolved regarding suntans will be unsuccessful; see also the discussion regarding reactance effects.

While accepting that there is no such thing as a safe suntan, the focus should therefore be on sun safety including:

- strategies to tan as safely as possible
- strategies to help parents engage their children in sun protection strategies
- strategies for avoiding sunburn and sunstroke
- effective use of sunscreen
- providing advice as to the amount of sun exposure recommended in relation to Vitamin D production.

Skin cancer detection receives minimum media coverage. Given the region’s concerns re the potential impact on business of negative / ‘scary’ messages, communication within the region should focus on positive strategies which highlight positive outcomes if skin cancer is detected early. This is preferable to negative messages which might be seen to deter people from engaging in outdoor activities within a region very dependent on the income generated by visitors to the region.
Communication Effectiveness Factors: Readability and Message Framing

Readability Issues

In addition to decisions regarding the type of messages to be communicated, there are concerns with the style of information delivery used currently and with readability issues for the significant proportion of the population who have literacy issues. The implications of low functional literacy have been extensively researched in the context of health over the last thirty years\textsuperscript{108,109,110} with consistent findings that most written material is at a level well beyond the ability of many people to understand it. Almost four out of ten adults in some parts of the UK struggle with literacy\textsuperscript{111} and it was estimated that in 2006, up to 16 million adults, nearly half the UK workforce, have reading skills no better than that of children leaving primary school\textsuperscript{112}.

The average reading skill level of the overall adult population is often overestimated and is some 3 - 5 grades below the level likely to have been achieved at completion of formal education\textsuperscript{113,114}. Thus, an adult who left secondary school at age 15 (after 10 – 11 years of formal education) can be expected to have a post-education reading level of a person completing 8 years of formal education and a person with a tertiary undergraduate degree a level of 10 - 12.

However, most health–related information material assumes a higher reading ability than actually exists\textsuperscript{115,116}. Thus material aimed at the general population should ideally be written at the reading level of a person completing 8 – 9 years of formal education.
Assessment of Existing Leaflet Material: Readability and Message Framing

We analysed a range of sun protection information leaflets using the SMOG readability index. This index was selected because of its proven accuracy, correlation with other readability formulae and subsequent widespread use in the academic literature\textsuperscript{115, 116}. The method used for the SMOG calculations followed the methodology in the literature\textsuperscript{117}.

SMOG calculations were calculated manually, thus, consistent with the literature, three groups of 10 consecutive sentences at the beginning, middle and end of a document were selected, giving a total of 30 sentences. Following this, all words with three or more syllables within these selected sentences were counted and the square root of the total was then calculated and rounded to the nearest integer. Finally, the number 3 was added to the integer to obtain the grade level of the document.

However, the originator\textsuperscript{118} (McLaughlin, 1969) of the SMOG formula has also provided an internet-based version of the calculator at \url{http://www.harrymclaughlin.com/SMOG.htm}. Thus, we compared the manually calculated results with those derived from the internet version and found no difference between them. This calculation measures only the likely reading level required for comprehension of the material and not other aspects such as readability and suitability which could be assessed using other tools such as the Readability Assessment Instrument (RAIN)\textsuperscript{119} or the Suitability Assessment of Materials measurement (SAM)\textsuperscript{120}.

The following results were obtained:

<table>
<thead>
<tr>
<th>Leaflet</th>
<th>SMOG Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunburn. Patient Information Leaflet (South Western Ambulance Service)</td>
<td>13.95</td>
</tr>
<tr>
<td>Sun Awareness (The British Association of Dermatologists)</td>
<td>17.14</td>
</tr>
<tr>
<td>Preventing Skin Cancer (Cancer Research UK)</td>
<td>10.35</td>
</tr>
<tr>
<td>Advice for Employers of Outdoor Workers (Health &amp; Safety Executive)</td>
<td>15.25</td>
</tr>
<tr>
<td>UVIndex</td>
<td>14.62</td>
</tr>
<tr>
<td>Safe in the Sun</td>
<td>10.07</td>
</tr>
</tbody>
</table>
There is a considerable body of literature that indicates that the reading level at which health information should be targeted should be no more than level 9 – the approximate level expected of a 13 year old. This level is recommended as it is known that the reading level of adults who do not read regularly declines from the level achieved at the completion of formal schooling, falling back by as much as 3 – 4 levels\textsuperscript{116,121,122}.

All leaflets assessed are written at levels likely to cause comprehension difficulties – or to deter people from attempting to read the information provided. We recommend that this material be revised for use in the future and all future intervention material be subject to a readability analysis using SMOG or other readily available evaluation tools.

In addition, there are a number of issues relating to the impact of contradictory messages, what information is desired and by what means it should be disseminated that emerged from the research programme. These are discussed in the next section.
Research Programme

Focus Groups and Depth Interviews

Overview
A total of six focus groups were conducted in Cornwall during February 2009. Four focus groups centred on population segments deemed to be of highest priority in developing and delivering interventions:
- Parents of Young Children (separate groups of males and females)
- Outdoor Workers (2 separate groups)

In addition, two focus groups were conducted with members of the general population resident (as opposed to visitor / holiday makers) within Cornwall, with males and females in separate groups. These focus groups were moderated by Gill Kemp and Simon Jones, with audio recordings being made of all groups. A total of 56 participants were involved in the groups.

The focus groups were supplemented by individual depth interviews conducted by Gill Kemp with extensive notes being taken of all discussions. Sixteen males and fourteen females drawn from the general population resident in Cornwall participated. Additionally, five depth interviews were conducted with local pharmacists in resort areas such as Looe, Liskeard and St Austell. The interviews conducted by Gill Kemp with extensive notes again being taken of all discussions.

The transcripts and interview notes were then analysed using the NVivo© software package. This package assists in the organisation and analysis of complex non-numerical data such as transcripts, videos, audio and still images. The software allows researchers to categorise, sort and arrange numerous pieces of information; examine complex relationships in the data; and combine the analysis with linking, developing, searching, and graphical modelling techniques. The software provides a much deeper level of analysis than is possible through non-computerised methods. It can test theories, identify trends, and answer questions in a variety of ways using the search engine and query functions. The results from the analysis can assist in the production of a body of evidence either to answer research questions or to support a business case or project.

Focus group activity covered the following topics:

- Past sun protection behaviours and future intentions
- Knowledge, attitudes and beliefs regarding sun protection and skin cancer detection strategies
- Perceived norms, family and social group influences
Information sources and preferences, with a range of leaflets and visuals relating to sun tanning behaviours used to focus particular sections of the discussions

- Critique of existing sun protection / skin cancer prevention and detection material

A copy of the moderators guide is included in Volume Two of this report.

_Caveat:_ it is known that self-reports of past behaviour may be affected by recall bias\(^1\) and therefore the ideal time to conduct research of this type would have been immediately after the last summer season. However, waiting until the end of summer 2009 would have prevented the opportunity to provide sound research-based input into the development and implementation of intervention improvements for the 2009 summer, therefore we proceeded with the research programme. We do however, recommend that additional focus group research be undertaken at the end of the summer period, both to assess the impact of interventions used during the summer and to extend research coverage to incorporate a wider range of population segments.

To facilitate this, specific training in conducting focus groups has been scheduled for relevant staff in the region. This will also enable new and revised interventions to be evaluated and / or pre-tested among the relevant target population segments.

**Expert Interviews: Pharmacists**

Many of the comments from pharmacists related to the topics discussed under the five key themes identified in the next section. Their comments have been analysed together with comments from other research participants regarding each of the themes, however additional factors specific to their professional role that also emerged. Pharmacists saw a role for themselves in skin cancer detection, but on a largely reactive rather than proactive basis:

> “I have seen a couple of skin problems and suggested they see their GP; local elderly, mostly”

Current information provision was seen as deficient in three respects. Firstly, there was no reference to “drinking lots of water”. Secondly, they also felt that information and advice should be both practical and specific, giving pointers to recommended exposure times and “issues with skin types”.

Thirdly, all pharmacists indicated a need for leaflets providing practical advice for treating those who were suffering from sunstroke; all participants noted that they regularly dealt with such cases through the summer but that there was not suitable material available. This was noted as being a concern relating largely to holiday makers in the region rather than residents:

> “Different for locals – they know what to expect, the sun down here is brutal”
Local Knowledge and Concerns

The perception of local residents having better sun protection knowledge and behaviours than visitors and holiday makers was echoed by the participants in the focus groups and depth interviews, with awareness of the need, in addition to what they perceived to be sensible sun protection behaviours to also:

“Drink lots of water and put a hat on to stop being sick”

Many also made disparaging remarks about the unwise behaviour of holiday makers, such as:

“We get a lot of holiday makers and they will lie on the beach and go from white to red to lobster”

“You see a lot walking around and their backs are red, that sort of thing”

This linked to an additional concern voiced by many of the local residents – a desire to not divert local funding and resources from local residents towards holiday makers. Additionally, significant concerns were evident in relation to potential health risk messages, given the region’s high level of dependence on tourists and holiday makers, with strong consistent pleases to “promote the good aspects” and not put people off with “scary leaflets or frightening messages”:

“It’s hard enough as it is without frightening people away with skin cancer scares”

All potential interventions must have the support and buy-in from the local community, particularly where organisations or individuals can either facilitate or hinder the distribution of information or the implementation of specific interventions.

A further concern among outdoor workers specifically related to the potential for legal action if the link between sun exposure and skin cancer became better understood:

“What you don’t want is longer down the line, someone getting skin cancer and becoming ill and the other thing is, well, if they turn around and say ‘Well, I worked for your organisation for 5 or 6 years and you never supplied me with any equipment, now I have cancer and I’m going to sue you’.”
Findings
Five key themes are evident from the initial analysis of the data. These are shown diagrammatically in Figures 2 – 6.

- Attitudes and Beliefs Regarding Sun Tanning and Sun Protection Behaviours
- Attitudes Regarding what Sun Tanning Behaviour is ‘About’
- Attitudes towards Personal Choices, Health Risks and Health-Related Concerns
- Perceptions Regarding the Use of Artificial Tanning Products
- Information Sources Used and Perception of Information in Existing Leaflets

Each of the themes has positive and negative aspects evident which are discussed in the following sections. Note: where the NVivo graphics show the word “parent” along the connectors between individual nodes. This indicates the hierarchical relationship (i.e. the node above is the parent of the lower node indicated by the directional arrow). The model can be produced to include the word ‘child’ to indicate the parent and child relationship but this drastically increases the size of the model.

Theme 1: Attitudes and Beliefs Regarding Sun Tanning and Sun Protection Behaviours

Note: Vitamin D was not seen as a major issue, although it was noted by one participant as justifying sun exposure:

“Media hype really, you can’t help it and it is good for you in some way because you do get Vitamin D”

The need for education on how much sun exposure was required to ensure adequate levels was recognised by a small number of participants.

Behaviours linked under the Suntanning and Sun Protection Behaviours theme showed clear distinction between individual behaviour by adults and their responsibilities as parents of young children and additional marked differences depending on whether the behaviour was in relation to home-based activity, holidays or the work environment, as shown in Figure 2. Women were seen as the primary decision makers regarding what type of sun protection measures should be used, both for children and for their husbands / partners.
Parents
Parents were aware to a limited extent of the dangers of child sunburn, noting that several had been severely sunburned when they were adolescents. Two of the parents had needed hospitalization; several other participants commented that they knew others in their family or social groups who had been severely burnt:

“I’ve been hospitalised with it in Cyprus. I had a huge blister on my back”.

Consistent with the attitudes towards what a suntan is ‘about’ discussed in a following section, getting sunburnt was not seen as a health risk, but as nothing more than:

“a waste of a holiday”

Most parents commented that they tried to keep their children out of the sun during the hottest part of the day although they themselves may not necessary model appropriate behaviours:

“On holiday if we are in a restaurant between 12 and 2 I make sure we find a restaurant with seats and a table where some are in the shade and one is in the sun. It’s sad, isn’t it?”

The appearance of the sun was seen as triggering an urge to get out and get a tan immediately, with little thought of possible negative consequences:

“It’s a bit of hysteria, I suppose, because when the sun is out, we’ve got to get a tan”

The behaviour modelled by other family members or members of social networks was also seen as an influence on the behaviour of others:

“My mum will be out there in the least amount of clothes and will be out there until the last bit of sunshine has gone. She works nights and even on her sleep day she would go and sleep out in the sun for 5 or 6 hours”

These parents had to be prompted to recognise potential skin cancer risk to their children from excessive sun exposure and appeared to deny any consequences from sun protection decisions they made on behalf of their children:

“Haven’t really thought about it”

“Possibly when they get older?”

“Maybe 15 – 25 when they start going out on their own”

They did acknowledge that if the connection between child sunburn and skin cancer risk was made more apparent parental behaviours might improve considerably:
“A lot would sit up and take note, if it’s anything to do with your kids”

While parents attempted to “slap” sun screen on their children, problems were evident in getting children to accept application of many creams and lotions; several participants commented that problems, struggles and arguments often ensured, and parents had frequently resorted to nagging their children, behaviour that may have negative consequences as children gained more independence with age. Practical tips regarding sun protection strategies and advice were noted by the parents as being welcomed, but not often available. Problems commonly included resistance from children, i.e.:

“Getting them to stand bloody still for one”

Concerns also were expressed over the cost of sun creams, particularly those seen as being formulated specifically for children as they are seen as being more expensive than lower SPF rated creams which were considered as more suitable for adults. The issue of the SPF factor deemed appropriate for children was discussed in some detail, with parents agreeing that a minimum of factor 50 should be used on children. This is seen to be in conflict with the advice given in sun protection leaflets and is discussed in detail under the Information Sources theme as there are significant implications for the credibility of existing leaflets due to the difference between what leaflets state and what parents “know” is needed.

A certain amount of sympathy for what they ‘inflicted on their children in relation to sun protection was evident:

“My youngest, I just make him cover everywhere, where there is no clothes. Head to toe … poor sod!”

Additionally, problems with reapplication, particularly if the parents were not there to oversee reapplication behaviour and also with specific environmental conditions were evident:

“If they are going on a summer activity, say canoeing for the day, then you have to think about the reflection off the water”

While the majority of parents attempted to ensure that children wore adequate protective clothing “at least a t-shirt, hats and sun cream”, there was an acknowledgment of problems getting children to comply, particularly if they were likely to be subject to adverse comments from others in relation to legionnaire-style hats:

“That’s alright for little kids but not older kids … they look stupid and would have the ’mickey’ taken something rotten”
Actions of schools were seen as somewhat erratic, with some schools maintaining consistent policies; others selling hats to children and then making sure the hats were worn, while other schools appear, from the parent’s comments, to take no action.

Parents appear to accept that ensuring consistent sun protection behaviours became more difficult as children got older and that children see acquiring a sun tan as becoming more desirable as they got older:

“Getting to the age when she wants to lay on a towel”

They were, however more critical of the behaviours observed in other parents than in their own:

“Babies in a pram – they can’t say no and get the cream to cover themselves – you see an awful lot of little ones and you think ‘good golly’”

Some confusion was evident in relation to the use of sun screen on infants and toddlers, with agreement that they should be kept out of the sun where possible, but uncertainty as to the use of sun cream if they were in a situation where sun exposure was inevitable:

“You wouldn’t want to see it covered in chemicals either”

“I’m sure all the gunk can’t be good either”

**Holidays**

Holidays were seen as times when normal home-environment sun protection behaviours might be relaxed:

“For me, that’s what a holiday is for”

“I sunbath only when I go on holiday”

“I love the heat going through and it hits your bones, you can feel it penetrating and it feels lovely”

The issue of what sun tanning is ‘about’ is discussed on more detail in the following section.
Home environment
There is a perception that home-based activities are less risky than holiday behaviours, with many reporting that they do not use sun screen outside unless the day is particularly hot and do not intentionally get sun burnt at home.

Additionally, simply getting children to wear t-shirts when playing outside was seen as sufficient protection, unless a day was particularly sunny:

“I wouldn’t put cream on myself either, or even on a cloudy day in summer to be honest”

“I only put it on if I am starting to burn on a hot day”

Children acquiring a suntan through ‘normal’ outside / play activity were seen as ‘natural’ and without health risks, as opposed to beach or water related activity. There was a view that ‘other’ parents underestimated the risk of sun exposure to their children through home-based activities:

“Parents don’t understand – they think that because they are not sat directly on the beach they are not going to catch it”

There is a strong correlation between attitudes and beliefs noted in this section and those in the following section regarding what a suntan is ‘about’. The implications for future interventions are therefore discussed at the end of the next section.

Outdoor workers represent a significant subsection of this first theme, i.e. attitudes and beliefs regarding sun tanning and sun protection behaviours, and are discussed below.

Outdoor Workers
The impracticality of staying out of the sun during the hottest parts of the day was discussed in detail. Outdoor workers were somewhat fatalistic about the health risks of their jobs, with sunburn seen as an acceptable occupational risk:

“You just stay in the sun until you burn”

“There isn’t a lot you can do about it. I don’t believe you can stop that happening doing the job you do”

More concern was evident among this group in relation to the consequences of sunstroke, and the accompanying sickness which would prevent individuals from working and lesser symptoms such as headaches caused by getting dehydrated. The complete absence of advice on avoiding dehydration and sunstroke in the leaflets discussed was noted.
Organisational Responsibility:
The need for organisations to provide sun protection advice and appropriate equipment was recognised, however it was apparent that not all organisations did this:

“I am the centre manager and what I would really like to know is working outdoors why we couldn’t have any policy and advice and so on regarding sun protection for us and for the kids who come here”

The lack of clear policies regarding sun protection within organisations, such as mandatory provision of sun cream, hats and sunglasses, was also noted and the possibility of strengthening of policy requirements by regulators seen as being desirable. Several implementation problems were evident, such as high turnover of staff due to the seasonal nature of work linked to tourism and holiday makers.

It was also noted that sun burn warning was not a requirement under current health and safety provisions and was therefore not covered in first aid communications, although there was concern about information overload if it was included, given the range of other topics already covered such as strokes and heart attacks.

Information regarding skin types was seen as neither relevant not practical for employers of outdoor workers:

“We’ll all have to wear white suits”

“If a member of staff came in and said ‘I can only work in the sun for four hours because I am a Skin type 1’, then I would say ‘on your bike then, sorry but I can’t employ you’”

Personal Impact
While some outdoor workers commented that they were already required to wear long sleeved shirts and were not permitted to wear shorts, advice regarding covering up was seen as patronising and impractical for some activities:

“We are in the water all the time so you just can’t have all these layers on”

“I couldn’t – I can’t stand the heat”

“It isn’t practical”

“When you are running around trying to organise everyone else, it’s hard sometimes”

Some participants indicated they tried to compensate for these difficulties through the use of sun creams that provided protection for specific situations:
“I try and get the waterproof stuff, we are in and out of the water all the time, all day”

Conflicting advice in the past regarding eye protection was noted, with one directive having advised that sun glasses should not be worn in case the glass broke; this was followed by a second directive advising of the impact of reflective light damage to eyes. The result was, inevitably confusion as to what action should be taken.

The impact of wearing sunglasses clearly extends beyond mere protection:

“We issue our guys with protective eye wear and there are certain operations that they carry out that they do have to wear them. Other times we leave it to their discretion a little – the difficulty in getting these guys to wear protective eye wear when they needed to was almost ridiculous. We then provided them with shades – can’t get them to take them off: everywhere they wear them home... wrap around shades – best thing we ever did!

“I wear sunglasses when I am teaching and sometimes I do feel like Arnie there with those terminator wrap round things, maybe I need to get less offensive sunglasses.....

Protection of Children
With regard to those outdoor workers whose jobs involved contact with children, such as running outdoor sporting activities, provision of sun protection for children was seen as desirable – but problematic:

“Health & Safety wouldn’t let us do that (apply sunscreen to children who needed it) – you can’t touch kids nowadays”

“We are not allowed to supply the sun cream in case they are allergic to it, otherwise we would be held responsible”

There was, however, some evidence of staff ignoring this issue in order to provide sunscreen if requested:

“Definitely we would supply it with no cost issue there and again for the supply, we don’t have a policy there, but sometimes someone comes in and says: ‘Oh, have you some sun cream I could borrow?’ so I pinched this off little Johnny last week”

The leaflet providing advice for outdoor workers is discussed in detail under the Information Sources section.

As a priority, efforts should be made on a national and regional basis to include skin cancer risks within existing workplace health and safety provisions. This has been
achieved in other ‘high risk’ countries such as Australia where legal test cases involving a builder who developed multiple skin cancers and a postman who developed malignant melanoma successfully sued their employers\textsuperscript{124}, resulting in changes to legislation that required employers to provide protection for employees and for workers to cooperate with the measures put in place\textsuperscript{125}.

Additionally, when outdoor activities involving children are run, any organisation providing licensing or accreditation of the programmes should be encouraged to make the provision of adequate sun protection measures a requirement of the accreditation, with a view to being able to change relevant legislative and regulatory requirements regarding this provision in the future.

**Figure 2: Attitudes and Beliefs Regarding Sun Tanning and Sun Protection Behaviours (including home, work and holiday perspectives)**
Theme 2: Attitudes regarding what Sun Tanning Behaviour is ‘About’

As with the other key themes identified, sun tanning behaviour is seen as having both positive and negative aspects, as shown in Figure 3. However, the positive aspects far outweigh any concerns regarding future consequences.

Participants reflected back on the sun protection actions of their own parents, seen as having been largely inadequate:

“If only my parents had known”

In reflecting on their own behaviours, they noted that they had become less concerned about personal appearance than when they were adolescents; however most still saw overwhelming positive health and appearance / social benefits, reflected both from peer / social networks and from immediate family, from acquiring a tan. This is consistent with the literature regarding social norms discussed earlier:

“When you have a tan you feel different”

“Looks healthy, glowing”

“We look healthier with a bit of a tan”

“The colour of clothing looks different on people who haven’t got a tan than someone who has … black is the best colour to show of your tan”

Sun tanning was also strongly related to issues of confidence, relaxation, de-stressing and overall well-being, with agreement among participants that sun exposure impacted on mood:

“It’s the feel good factor”

“In May I get a little less grumpy”

“Slightly more miserable through winter”

“On the beach it’s a nice chilled relaxed environment”

The somewhat fickle climate was seen as possibly making unwise sun tanning behaviour worse:

“Last summer wasn’t a summer, so people have that stereotypical long sunny days notion, so when you’ve only got a week of it, you want to make the most of it”
Getting burnt was seen as bad, but primarily because of the unattractive effect of skin peeling rather than health-related consequences:

“That is gutting”

“That looks awful”

“You look stupid”

“It’s the pain of burning and not being able to lie down and go to sleep”

Knowledge of skin damage was somewhat vague and not seen as being of particular personal concern:

“It damages the various levels down to the epidermis is it? Something like that!”

“It can’t be repaired so no good knowing what is happening”

“It’s a radiation burn… so damaging… I know it creates more melanin, which isn’t a worktop (melamine Australian ‘worktop’ brand name,)… and that’s why we go brown, but I don’t know the process”

There was some recognition that some skin types will tan more easily than others, with fair skinned, blondes and redheads needing to take extra care and darker skin types being seen as less likely to burn, there was evidence of the perception that sun burn is an inevitable consequence of acquiring a tan:

“It’s a base layer and you have to burn to be able to tan”

To this end, the use of tanning agents other than those with any form of SPF protection was seen as both a necessary and desirable tool to help acquire a tan. These included the use of coconut oil to help achieve a tan quicker which appears to be coupled with a psychological benefit of feeling the tanning occurring:

“You feel your skin sizzling”

Other homemade aids included a combination of:

“Olive oil, lemon juice and a little bit of honey … it seems to work...”
Consistent with the existing literature and previous research studies, the strength of the perceived norms regarding the positive impacts of acquiring a suntan are extremely strong. Messages to avoid getting sun tanned will be rejected outright and we therefore recommend that the strategies advocated in relation to response to media coverage provide the focus most likely to be effective, i.e. the promotion of sensible sun protection strategies, including common sense practical tips and advice on effective strategies for different segments of the population.

Ways of overcoming the denial of personal risk should also be explored, drawing on medical professionals and appropriate retail outlets such as pharmacies to assist in communicating statistics regarding the increase in skin cancer rates, mortality and other relevant data and to encourage proactive checking for suspicious lesions. If possible, the location and times of any drop in clinics or mobile checking facilities should be actively promoted via these channels.

Figure 3: Attitudes regarding what Sun Tanning Behaviour is ‘About’
Theme 3: Attitudes towards Personal Choices, Health Risks and Health-Related Concerns

Figure 4 shows the diverse range of attitudes and beliefs associated with personal choice decisions and potential health risks. Note: the potential economic consequences for the region of increasing awareness of health risks were discussed earlier under Local Knowledge and Concerns.

At a general level, knowledge was evident with respect to the connection between being sunburnt and increasing the skin cancer risk:

“You are more at risk once you have been burnt”

While parents indicated they tried to protect their children more than themselves through ‘slapping it (sun cream) on”, getting children to cover up etc, there were also concerns about the cost of sun cream products, coupled with some uncertainty as to exactly how they worked and whether they really provided protection against skin cancer, noting that clearer information, or evidence of the effects of actual skin damage would affect behaviour in relation to protecting children more than themselves:

“I don’t think it would stop me, it would make me more paranoid about the kids”.

The perceived positive benefits of personally having a sun tan, as discussed in the previous section, outweigh any potential negatives. Concerns were more directly related to the temporary discomfort of burning and image-related issues than to any long-term health impact. Simply applying sun screen or ‘covering up’ was seen as adequate protection against skin cancer and the application of moisturiser was seen as both preventing sun burn from peeling and also ‘dealing with’ skin damage.

Only one participant was aware of the link between excess sun exposure and the risk of developing cataracts, with hats being worn more for practical reasons such as “protecting the bald spot” than conscious risk protection.

There was acknowledgment that their attitudes were influenced by others, particularly family members and friends, but also by exposure to images and messages conveyed via the media. It appears to be an acceptable social norm for parents to attempt to protect their children more than implementing personal sun protection regimes for themselves.

Skin aging was seen as an accepted, but somewhat non-specific future consequence of repetitive tanning, but personal health risks were not seen as being relevant or of concern, with responses indicating both disinterest, lack of concern and outright...
denial. This is consistent with the literature relating to denial and unrealistic optimism and is illustrated by the following quotes:

“If you listen to experts, everything is a problem. You have to take chances and at least this one makes you feel good too”

“As time goes on you see facts that 1 in 3 people will die of some form of cancer and think, OK, well, how many of us are in the room now?”

“As a society we are bombarded with these sorts of things every day and I think it’s just another of them”

“Skin cancer is probably the last thing on my mind”

“Plenty of other things in life to worry about than that, isn’t there?”

“I still think I am invincible” (18 year old male)

“Wouldn’t say I was overly concerned about it – If you’re not lucky, you’re not lucky”

Additionally, there was strong denial of personal health risk, even in the face of past history or possible current suspicious lesions:

“Skin cancer happens to others, doesn’t it?

“If you don’t see it, you don’t know, do you – I’d rather ignore it, thanks”

“I have had a mole removed 4 years ago and the doctor said if he didn’t remove it, then it would have been cancerous, but hey, something’s going to take me! I think with cancer, my family is riddled with it”

“I have been told by my mates and husband that I have one on my back that needs checking out, but I keep saying: ‘it’s fine, don’t look at me like that’, but I wouldn’t know how to detect it”

Another had been treated on more than one occasion for solar keratosis and after an initial panic “Oh, God, I have skin cancer” was reassured by their doctor and now regarded it as “just the after effects of having this flaky skin there and then going and getting it sorted out” and now regarded it as unproblematic to the point of not changing their sun-related behaviours, commenting that:

“Apparently lots of farmers get it and builders”
Awareness of the signs and symptoms of possible cancerous lesions was vague:

“I might be silly here, but is it freckles going bad or something?”

“Moles getting bigger or changing or new ones?”

“They go bigger and start to go black”

Only one participant indicated active self-checking behaviours and one checked her husband but not herself:

“I don’t sit down at 5pm each night and think ‘it’s checking time’, but I do have a little look in the shower”

“Not me, but I do look at my husband’s back. He’s quite moley and so I do check him and tell him to cover up and put the cream on”

Another participant was disparaging about an acquaintance having regular skin checks:

“She is ten times worse than me – she goes to the doctor every year and says ‘please check my body for moles’ – every year”

The potential use of UV-filtered photos to show skin damage was seen as possibly influencing the behaviour of children and adolescents, but not having any probable influence on the personal established behaviours of some of the participants:

“I don’t know how the rest of us would feel about knowing how old their skin is, but I think it would certainly bring the realisation of how much damage sun does right home where it needs to be”

“I’d be interested to see how badly burnt my face was. I know it’s not been done through the later years, I don’t know what damage I did at a very young age, so I could basically say to my kids ‘this hasn’t been done now, this is what happened when I was a teenager’, basically”

“If you don’t see it, you don’t know, do you? I’d rather ignore it, thanks

It can’t be repaired so no good knowing what’s happened”

Television programmes that attempted to discuss skin aging consequences were largely seen as ineffective, being equated to:
Consistent with the implications drawn from the previous two sections, the perceived positive benefits of acquiring a sun tan outweigh the negatives, resulting in disinterest in acquiring information regarding risk and denial of the magnitude of personal risk from current sun exposure practices.

Given the low level of interest and the passive, rather than active, acquisition of health risk information, web-based material is unlikely to be an effective means of increasing awareness. The distribution of leaflets should be reviewed with a view to drawing on the resources of organisations such as pharmacies to expand the number of potential contact points where people are likely to come into contact with this type of information.

The possibility of turning some of the material currently contained in leaflets into other media forms such as posters should also be explored.

**Figure 4: Attitudes towards Personal Choices, Health Risks and Health-Related Concerns**
**Theme 4: Perceptions Regarding the Use of Artificial Tanning Products**

This theme incorporates both the use of artificial spray tans and lotions and sun bed usage, each of which has both positive and negative perceptions associated with them, as shown in Figure 5.

**Artificial / Fake Tans**

Positive associations with the use of artificial spray tans and lotions showed evidence of the social value of a tan, such as looking and feeling good, particularly when complemented on their appearance:

“everyone said ‘you have a lovely tan’ – it was fake”

In addition, artificial tans were seen as providing instant effects, ways of starting the season well, topping up an existing tan that was fading, or acquiring a tan during winter, all of which were seen as extremely positive outcomes. However, there is some evidence of beliefs that an artificial tan prepares the skin for a ‘real’ suntan, providing some protection from burning, especially for those with fair skins:

“You don’t burn when you first start using a fake tan as it also protects the skin”

Negatives included problems with getting it wrong, such as uneven coverage, streaks and staining of clothes or achieving an unrealistic (orange) colour or, worse, a “David Dickinson effect”.

**Sunbeds**

Similar positive effects were evident with regard to the use of sunbeds, being seen as a way to “start the season”, preparing the skin for a “real” suntan, prolonging a tan or to prepare for a special occasion such as marriage:

“It was my wedding. I wanted to look good” (male)

“I wanted to walk down the aisle looking healthier”

“I always make sure I go on sun beds before I go on holiday, always. It prepares the skin for the real thing”

Awareness of the potential damaging effects of sunbed use was evident, but this appears to be overridden by the beliefs that being tanned made people both look and feel good. While some participants had tried sunbeds and did not like them, others claimed that they had medical benefits such as curing psoriasis:

“Her cure was to go on a sunbed once a month for ten minutes and it cleared up”
The perceived protective effects of acquiring a fake tan may need to be addressed and a clear position statement made regarding the benefits versus risks of fake tan lotions and sprays.

The positive benefits of sunbed use are sufficiently strong that advice to not use them will probably be ignored. Sunbeds will continue to be used, with future legislative provisions likely to control only their use by young age groups. Consideration should be given to the implications of providing any advice regarding safe use as it is likely that the industry will seize on this as proof of endorsement of sun bed use as an acceptable means of acquiring a tan, particularly in the light of the provision of academic credits for courses that include sun bed operations. If the legislation is changed to prohibit sunbed use by young people, pressure may be able to be brought to bear to remove this content from any high school curriculum, but it may be difficult to remove it from other higher education establishments whose students are likely to be eighteen or over.

Figure 5: Perceptions Regarding the Use of Artificial Tanning Products
Theme 5: Information Sources Used and Perception of Information in Existing Leaflets

This theme is broken down into several separate factors, shown as the blue sub-nodes in Figure 6.

Child-focussed Information

Firstly, information directed at influencing children’s behaviour included strong support for the role of schools, however, the perception of current school-based activities in this area was somewhat vague:

“I think we had a letter about it”

Some schools were seen as providing good and consistent sun protection messages in terms of getting children to take hats and sun cream to schools.

Participants had numerous suggestions for motivating children to become more aware of, and take responsibility for their own sun protection behaviours. Consistent with the literature, ways of making this activity fun, easy and popular were evident, including:

“Maybe educate them in a fun way: it could be a colouring competition”

And:

“Maybe a web game for Nintendo or a game machine on the beach”

There appears to be no awareness of activities currently provided on websites such as Cancer Research UK / SunSmart for school children, and strategies to engage older children, such as those at high school will need to be explored – possibly by gaining input from representatives of this segment.

Additional suggestions which link to the types of activities provided by the Pool Cool intervention reviewed earlier included laminated cards, possibly as a card game and badges or stickers that “change colour when you are cooked”.

Provision of information and advice at key locations such as beaches was seen as important as it would be a high profile way of showing concern. The provision of canopies, sun cream, water and practical advice was seen as desirable, however emphatically “policing” was seen as undesirable.
Sun Protection Factor Advice
One unexpected sub-theme that emerged from both general discussions and discussions centred specifically on the provision of advice in leaflets etc advocating the use of sun screen lotion with an SPF factor of 15 or more. There was strong and consistent “accepted wisdom” that SPF 30 or more was needed for children. This led to strong negative perceptions regarding the value of the information contained in the leaflets reviewed, and outright distrust and dismissal of the rest of the information provided in the leaflets:

“There is something on there that I don’t personally agree with and that’s sun protection factor 15 or more, because if ever you speak to anyone and they say ‘what protection do you put on your kids?’, the kids’ cream generally is a factor 50 in a bottle – the Nivea sun cream is a factor 50, so I wouldn’t use factor 15 on myself let alone my kids”

“I use much higher. I don’t think 15 is high enough”

“Not sure that is right”

“Not sure they know what they are talking about. Everyone knows the manufacturers make kids stuff a lot higher”

“I notice on both it says factor 15 and to me that seems ridiculously low”

“These say factor 15 – even I know that’s too low. It makes me doubt the rest of the information”

“If they put this in all the school kids’ bags when they came home we’d be like ‘what!’”

“I wouldn’t actually trust anything that was in that leaflet then. I’d go with my own judgement”

This has important implications for the provision of information in the future. The brand equity (i.e. the measure of the strength of consumer’s attachment to a brand and the associations and beliefs the consumer has about the brand) of manufacturers of sun screen products and of retailers such as Boots appears to be far stronger than that of the originators of the various leaflets tested, thus their messages are perceived to be more credible.
We therefore visited both websites and retail stores to check the specific wording in sun protection signage.

Boots: website [http://www.bootsfuncare.com](http://www.bootsfuncare.com) states Kids’ skin needs extra protection. Always choose a suncream of SPF30 or more”

Two major in-store display signs repeat similar messages:

The first, implicitly sponsored by Soltan (i.e. Soltan is the only brand mentioned in the signage) states that, for moderate climates e.g. UK, Holland and Eire the following SPF factors are recommended:

- Children and sensitive skins: 30
- Fair /light skin: 25
- Normal / tanned: 15

Higher SPF rated sun creams are recommended for hot or very hot climates.

The second, provided by Nivea provides the following SPF recommendations:

- Sun tolerant, tawny skin, dark hair: 6 – 10
- Normal: 10 – 15
- Moderate sun sensitive: 15 – 25
- Delicate sun sensitive, including children: 30

As for the Soltan signage, higher SPF rated products are recommended in Mediterranean or tropical countries

The Nivea website repeats this information, although in a more complex way ([http://www.nivea.co.uk/subbrands/show/639](http://www.nivea.co.uk/subbrands/show/639)) and similar information is displayed by Nivea in supermarkets such as Tescos.

There are obvious major implications for the credibility of information provided in existing leaflets and this should be addressed as a matter of urgency. Additionally, the credibility of the various organisations who have contributed leaflets to date should be investigated, particularly in the light of the following:

“Only 6% of the population trust and act on all government advice regarding diet. 37% said they did not trust any government advice and 20% said they completely ignored it” (National Social Marketing Centre, 2006: 18).
Overall, there was scepticism regarding the need for leaflets such as those discussed during the focus groups:

“You don’t need to read a leaflet”

“Good for people with no common sense”

“Don’t like to be told to do what you’re already doing”

Comments from the outdoor workers discussed earlier indicate that information may be more effectively communicated via workplace posters.

**Analysis of Existing Leaflets**

In terms of the specific leaflets used during the focus groups (copies of these are contained in Appendix C of Volume Two), the following observations were made:

**No Fun Burning Sun (SWERCOTS)**

This leaflet was seen as relevant only for very young children, containing little information of value:

“Most responsible parents would know this”

“Don’t think you need a leaflet for them”

Issue was taken with the recommendation to “always cover up” which was seen as impractical and:

“It is hard to be so rigid”

The recommendation that “Tightly woven cotton fabrics help stop the sun’s harmful rays from penetrating to the skin” was misinterpreted to mean tightly fitting clothing, again seen as impractical and potentially unpopular.

Concerns regarding the recommendation of sunscreen with a SPF factor of 15+ noted earlier were very evident in relation to this leaflet.

**Safe in the Sun**

This was seen as being aimed specifically at young children, but needing parents to explain the contents to the children. Concerns regarding the recommendation of sunscreen with a SPF factor of 15+ noted earlier were very evident in relation to this leaflet and the same confusion regarding “keep your child out of the sun “11am and 3.00pm” was evident as discussed in relation to the Enjoy the Sun Safely brochure.
Enjoy the Sun Safely (British Skin Foundation)
The information was seen as largely confusing, with discussions within the parents’ focus groups centred on children not getting out of bed until mid morning, then being expected to be outside for only an hour. The line “seek shade between 11am and 3pm” was interpreted as meaning children needed to be inside which was seen as undesirable – and distinctly unpopular with both children and parents.

This advice, also contained in the No Fun Burning Sun and Safe in the Sun leaflets discussed below, was seen as contradicting advice given in relation to increasing physical activity as a means of combating childhood obesity:

“We are told to get them outside playing and more active BUT then in the shade between 11 and 3. It’s confusing – if you do right by one you do wrong by the other”

The UV Index
The leaflet was criticised for providing too much information, with font sizes being too small for easy reading and for being somewhat patronising in tone. UV information was seen as potentially useful although there is evidence that participants were unsure as to the implications of the various UV figures in anything more than a general way.

“The higher the number the more you are going to burn?”

“The table is confusing”

Additional confusion was evident in terms of whether an index figure related to a specific region in general or if / how it might change on a daily basis – and what the implications of the different levels were:

“I used to live in Northern Ireland and have seen sunburnt people there, just because it’s a 2 and not a 3, what’s the difference, if it’s a sunny day?”

Similarly, the relevance of the skin type information to specific sun protection behaviours was seen as confusing:

“To me, that is telling me, if you were a 3, even if you got up to a 5, OK, fair might burn, but it you knew you didn’t burn, then you wouldn’t put any sun cream on, as it says low risk to these people. How is that a low risk if your child was out canoeing and they get reflection off the water?”

“Although I have brown hair and dark eyes, I burn so I don’t think you can go by what it says, you know your own skin type and colour and whether you burn or not”
Radio stations were seen as a desirable source of sun protection information, including specifically the daily UV index and the provision of some form of signage at key outdoor locations was supported. The Internet was not seen as a particularly useful source for holiday makers, and others who may not have Internet access.

This was an issue identified as problematic in New Zealand, resulting in a complete revision of the way information was presented, as shown by the graphic below, developed by the New Zealand Meteorological Service (MetService) (www.metservice.co.nz ). This style of presentation is also used for communicating other risk factors such as fire danger levels.

New Zealand UV Index Graphic

The Metservice site provides an overview of the significance of the UV index figures, as shown in the example below:

Ultra Violet Index
UV ratings are available from this site from 01 October to 31 March. The UV Index (UVI) is a simple measure of the UV radiation level at the Earth's surface. It has been designed to indicate the potential for adverse health effects and to encourage people to protect themselves. The UVI is a forecast of the peak intensity of UV expected to reach the Earth's surface under clear skies and when the sun is highest. The UVI is higher in the mountains than it is at sea level. The higher the UVI, the greater the harm and the less time it takes for your skin to burn. Each exposure category of UVI comes with its own suggested protection behaviour as follows (where SPF = sun protection factor for sunscreen lotion):

<table>
<thead>
<tr>
<th>UVI Rating</th>
<th>Risk from UV Radiation</th>
<th>UVI Colour Code</th>
<th>How To Protect Yourself</th>
</tr>
</thead>
<tbody>
<tr>
<td>11+</td>
<td>Extreme</td>
<td>Purple</td>
<td>Reapply SPF 30+ every 2 hours, protective clothing, sunglasses, shade essential between 11am and 4pm.</td>
</tr>
<tr>
<td>8, 9, 10</td>
<td>Very High</td>
<td>Red</td>
<td>Reapply SPF 30+ every 2 hours, protective clothing, sunglasses, and seek shade between 11am and 4pm.</td>
</tr>
<tr>
<td>6, 7</td>
<td>High</td>
<td>Amber</td>
<td>SPF 30+, protective clothing, and UVA&amp;B sunglasses. This is where Slip, Slop, Slap and Wrap (sunglasses) STARTS.</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Moderate</td>
<td>Yellow</td>
<td>SPF 30+, and protective clothing (hat) when in the sun for hours.</td>
</tr>
<tr>
<td>0, 1, 2</td>
<td>Low</td>
<td>Green</td>
<td>Apply sunscreen, SPF 30+. Safe to stay outside all day”.</td>
</tr>
</tbody>
</table>

The Metservice site provides a link to the New Zealand SunSmart website
http://www.sunsmart.org.nz/ on which an interactive facility allows the forecast daily
UV level for specific towns and areas to be provided with general recommendations
for sun protection, for example:

For a UV index of 6 “HIGH - Protection essential. Slip, Slop, Slap and Wrap”.

The site’s information can be further customised according to an individual’s skin
type and previous tanning history, as the example below shows for a child with a skin
type with the following profile: “Always burning, never tan; sensitive to exposure;
redheaded, freckles, Celtic background” for a UV forecast of 6.

<table>
<thead>
<tr>
<th>High - Protection essential. Slip, Slop, Slap and Wrap.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slip into a shirt and other clothing that gives good coverage.</td>
</tr>
<tr>
<td>Slip into some shade. Be aware that some shade may not filter out all UVR; you may be under dappled shade from a tree, or there may be a reflective surface such as concrete nearby, so use other sun protection measures at the same time.</td>
</tr>
<tr>
<td>Be cautious about using sunscreen on babies under a year (it’s best to keep your baby out of strong sunlight). However, if there is a risk your baby might get sunburned, use sunscreen on area of skin not covered by clothing. A young child’s skin may be allergic to sunscreen, so test it first on a small area of skin. Choose a sunscreen that meets the Australian and New Zealand Standard AS/NZS2604. Use an SPF30 broad-spectrum sunscreen. Wipe it on thickly at least 15 minutes before going outdoors to give it enough time to dry and bond with your skin. Reapply: do this 15 minutes after the first application to ensure complete coverage, and also after physical activity, swimming or towel drying.</td>
</tr>
<tr>
<td>Slap on a hat with a wide-brim or a cap with flaps. More people get burned on the face and neck than any other part of the body, so a good hat is important.</td>
</tr>
<tr>
<td>Wrap on a pair of sunglasses. Sunglasses are important for all age groups. Choose close fitting, wrap-around glasses that meet the Australian Standard AS1067.</td>
</tr>
<tr>
<td>Fair-skinned people and people with very sensitive skin must always take extra precautions in the sun. No matter what skin type, people with a large number of moles or freckles have a higher risk of developing melanoma than people without and should take extra precautions.</td>
</tr>
<tr>
<td>Babies and young children need extra protection from the sun as their delicate skin can burn very quickly. This can happen in a few minutes. This burning can cause damage that builds up over the years and can lead to premature aging of the skin, and skin cancer. Most skin damage from the sun occurs before people reach the age of 18.</td>
</tr>
<tr>
<td>It is difficult to put a time on how long you can stay out in the sun without burning. That’s because each person is unique; skin types vary greatly and will burn at different rates.</td>
</tr>
<tr>
<td>Note that UVR is highest at solar noon. During New Zealand’s summer daylight saving hours this is at 1pm.</td>
</tr>
<tr>
<td>If there is cloud Ultraviolet can still penetrate light cloud and reflect off cloud surfaces, so you can burn just as badly on overcast days.</td>
</tr>
<tr>
<td>If there’s wind note that there is no such thing as wind burn. UV may be very high although the wind is cool, and cause you to burn without realising it.</td>
</tr>
</tbody>
</table>

Daily UV information is routinely provided in radio and television weather reports and also reinforced in newspapers where editorial regarding spells of hot weather are augmented by specific warnings as to the need for specific sun protection.

Discussions with local media to endeavour to achieve similar reinforcement of the key sun protection messages to that provided in New Zealand should be held with changes to information provision occurring in time for the 2009 summer if possible.

*Sun Protection Advice for Outdoor Workers*

This leaflet was familiar to many of the outdoor workers, with one noting it was given to all employees; another commented that the same advice was provided via occupational health staff.

While none of the participants had problems with the content of the leaflet, several concerns were expressed regarding its readability, with the white type on a red background being seen by some as rendering it largely illegible.

Additionally, several participants doubted the usefulness and overall impact of the leaflet among outdoor workers:

“If I had to be honest, the value is not very high. I am of the opinion that most people who do this kind of work will have awareness and over most of those steps themselves”

“The thing with a leaflet like this is that you can give it to every member of staff and it will be forgotten in 20 minutes. I’d take one and maybe walk around the next day and put them in the bin”.

*Preventing Skin Cancer (Cancer Research UK)*

Concerns regarding the recommendation of sunscreen with a SPF factor of 15+ noted earlier were very evident in relation to this leaflet, being the first aspect commented on. Additionally, the illustrations of the skin types were seen as being at odds with the accompanying text:

“When you look at these hands you say Type One but when you start reading the writing it is totally different”.
Detecting Skin Cancer (Cancer Research UK)
The use of pictures of actual cancerous lesions was seen as having immediate impact, getting people to “sit up and think”:

“I would not have read it if it did not have the pictures”

The content was seen as potentially useful:

“I’d probably take note of that”

Participants had not seen the leaflet and, given the passive acquisition of information noted earlier, means of distributing the leaflet more aggressively (possibly via large and trusted retailers such as pharmacies) and the potential to convert at least some of the images to poster format should be explored.

Skin Cancer Detection
Given the reactions to the previous leaflet, the discussion was extended to incorporate overall awareness of skin cancer detection methods and preferred information sources. As noted in the discussion of health risks and concerns, awareness of symptoms of suspicious lesions was somewhat vague and not seen as immediate high importance to the participants:

“Moles getting bigger or changing shape or colour...?”

Information sources preferred were those involving individualised face to face discussions, with outdoor workers particularly supporting walk-in clinics or a mobile facility that could visit workplaces. Consistent with information being acquired passively rather than actively, a website was not seen as a primary source of information, with very few respondents indicating any preference for, or intention to use, web-based resources.
Figure 6: Information Sources Used and Perception of Information in Existing Leaflets
Recommended Strategy and Tactics: Upstream Factors and Intervention Infrastructure

Given the material in the preceding sections, we make the following recommendations regarding the development and coordination of interventions in general:

Agreement is needed between national, regional and local organisations as to the priorities regarding the specific problem or issue to be addressed, together with the resources (financial and personnel) that will be available to support initiatives undertaken. From this, agreement can be reached as to specific objectives, strategies and tactics for the coming summer and for future years.

As already discussed, there are a number of actions that can be taken to address upstream’ factors (environmental, social, economic, political or policy factors) particularly in relation to workplace safety requirements, worker training and the provision of sun protection for those participating in licensed or accredited outdoor activities. Clarification is also required regarding the provision of sun screen (with concerns about possible allergic reactions) and issues surrounding advising versus helping children apply sun cream effectively. These actions, together with the current moves to tighten regulations regarding sun bed usage, will provide a much stronger platform on which to develop interventions for future years.

Buy-in from all local organisations and businesses will be important to achieve successful implementation as will internal support from within the organisations charged with implementing any interventions.

Other sectors or agencies that might be able to support the development or implementation of interventions should be identified and the level of support and resources they are able to provide assessed. This includes local organisations such as RNLI, retailers and those already active in providing outdoor amenities and activities. If any barriers to their involvement exist, ways that these might be overcome or their impact minimised should be discussed.

The conflict between advice to avoid the sun between 11am and 3pm and the attempts by other agencies to encourage greater physical activity indicates both a problem and an opportunity. Firstly, the perceived conflict needs to be discussed with these agencies and a suitable resolution or clarification achieved. Secondly, these agencies are well placed, and better resourced, to be able to include sun protection messages within their own activity.

Similarly, we have already noted that the perceived conflict between the recommended SPF factors recommended in the health organisation-originated leaflets and the advice provided by major manufacturer and retailer brands must be resolved as a matter of urgency. However, as with agencies encouraging increased physical activity, there is an opportunity to leverage off the strengths of manufacturer brands to
disseminate strong and consistent messages. Developing effective working relationships with these organisations could also lead to the possibility of jointly branded sun protection merchandise that will serve to reinforce these messages.

The way in which local interventions fit in with other programmes in this area (national, regional, local) should be reviewed to ensure that messages are consistent; and that the programmes complement rather than compete with each other. Where the actions of individual organisations are not compatible with the agreed strategies, ways of minimising any negative impact from their activity should be debated to avoid alienating these organisations.

During the three day Social Marketing programme run in March 2009, a detailed discussion of the nature and potential impact of direct and indirect competition focussed on ways of minimising the impact of competitive influences.

In addition, a second detailed discussion of current and potential local partners identified a wide range of organisations (e.g. the Eden Project, the RNLI etc) that could be involved in delivering and supporting interventions. PCT staff were then to contact key organisations with a view to identifying what could be achieved for the immediate and longer-term futures.

The role of large national organisations and retailers is probably best undertaken at a national level to agree overall strategy and direction, with regional and local activity focussing on tactical implementation. Effective coordination and partnerships have the potential to increase the credibility of official health communications activity through leveraging off credible / popular brands. There is also the potential for cooperative activity such as the development or distribution of branded or co-branded merchandise to further strengthen the messages being communicated. If sun protection clothing is seen as fun, popular and ‘cool’, it is more likely to be accepted by older children, adolescents and young adults.

The role of schools in promoting sensible sun protection strategies has already been discussed. Ways of assisting schools – and other organisations whose activities centre on children – to provide adequate shaded areas should be explored, with regulatory and policy issues aimed at improving provision also being considered.

Different strategies will be needed for older children and teenagers and should be explored directly with schools, youth clubs and related facilities and with representatives of this group, particularly given the strength of social norms for this segment of the population.
Recommended Communication Strategy and Tactics

Before discussing specific communication recommendations, we believe there is value in revisiting some of the key theoretical concepts discussed in the April 2008 report to illustrate the role that they may play in designing effective interventions.

Theoretical Underpinnings (Attitudes and Beliefs Underpinning Behaviours)

We noted in the April 2008 report that theory-driven approaches to intervention development have been found to lead to more persuasive messages across the range of socio-economic groups and there is substantial evidence that, when theories are used to inform the development of interventions in practice, the interventions have proven more successful than interventions based on “practical experience” alone.

The value of these theories in guiding intervention development and implementation is that they guide the identification of important influences on actual and potential behaviour, and thus:

“guide researchers to routes to persuasion and to beliefs to target in persuasive efforts” (p. 268).

Theories do not provide a fail-safe blueprint for action; due to the complexity of human behaviours, most major theories predict only 40 – 50% of behaviour.

Additionally, the relative influence of the components of theoretical models may vary across different population segments, indicating the need for multiple strategies and ways of communicating with the various segments.

We found clear evidence from the research undertaken for the relevance of two of the theoretical models reviewed in the 2008 report to the development of future interventions. Firstly, Leventhal’s Self Regulation Model, shown in Figure 7 below, indicated that rational / cognitive and emotional processes operate in tandem in influencing behaviours. The discussion of the research conducted to date indicates that emotional factors outweigh rational processes. Developing rational arguments to reduce or prevent sun exposure or tanning by artificial means is therefore likely to be ineffective.
Figure 7 Leventhal’s Self Regulation Model

PARALLEL PROCESSES OF SELF-REGULATION

<table>
<thead>
<tr>
<th>COGNITION</th>
<th>EMOTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive perceptions of threat / illness formed by:</strong></td>
<td><strong>Emotional perceptions of threat / illness formed by:</strong></td>
</tr>
<tr>
<td>• Causes of threat / illness</td>
<td>• Causes of threat / illness</td>
</tr>
<tr>
<td>• Perceived consequences of threat / illness</td>
<td>• Perceived consequences of threat / illness</td>
</tr>
<tr>
<td>• Threat / illness as a short or long term problem</td>
<td>• Threat / illness as a short or long term problem</td>
</tr>
<tr>
<td>Coping with <strong>objective</strong> features of threat / illness</td>
<td>Coping with <strong>subjective</strong> features of the threat / illness</td>
</tr>
<tr>
<td>Appraisal of <strong>cognitive</strong> perceptions</td>
<td>Appraisal of <strong>emotional</strong> responses</td>
</tr>
</tbody>
</table>

Dual Influences
Of more direct value in planning future interventions is the Integrative Model of Behavioural Prediction and Change (more commonly referred to as simply the Integrative Model. This is a recent extension of the well known Theory of Planned Behaviour and is shown in Figure 8 below. The foundation of this theory and of the versions that preceded it is that:

“any given behaviour is most likely to occur if one has a strong intention to perform the behaviour, has the necessary skills and abilities required to perform the behaviour, and there are no environmental or other constraints preventing behavioural performance” ¹³² (p. 52).

Our immediate challenge is that both the available literature and the research findings indicate that intentions to modify behaviour are weak if they exist at all, there are problems in encouraging cooperation from children who regard the application of sun creams, wearing of protective clothing etc as unpleasant and restrictive, and there are both environmental and perceptual constraints that present major barriers to behaviour change. Addressing these issues will require sustained and coordinated activity at all levels. We now focus on the specific elements of the Integrative Model that have relevance to communication strategies.

Models such as this allow the identification of the determinants of behaviour, which may vary across population segments or cultures, thus guiding the development of communication messages appropriate to elicit the desired behaviour change. While there may be a finite number of variables to consider, the relative importance of each will change according to the specific intervention area and the specific segment of the population (for example, the preceding discussion has shown that social norms are important, particularly for adolescents and young adults; environmental constraints may hinder outdoor workers from undertaking sun protection measures even if they wish to do so and school sun protection policies appear inconsistent).

The effective use of theories such as this is dependant on research to understand what attitudes and beliefs may underpin or inhibit particular behaviour and their relative strengths as the goal of interventions will centre on attempting to:

“increase the strength of beliefs that will promote healthy behaviours, reduce the strength of beliefs that promote risky behaviours, or prime existent beliefs that support healthy behaviours (i.e. increase their accessibility) so that these beliefs will carry more weight as determinants of attitudes, norms self efficacy and intentions ”¹³⁵ (p. S14).

It is intended to use the quantitative data once it has been collected and analysed to revisit some of the recommendations as it is hoped that a sufficiently large data set will allow differences in attitudes and beliefs to be compared across population segments and thus to fine tune some of the recommendations contained in this report.
Figure 8: Fishbein et al. Integrative Model of Behavioural Prediction and Change

Background influence

- Past behaviour
- Demographics & culture
- Attitudes towards targets (stereotypes & stigma)
- Personality Moods and emotions
- Other individual difference variables (perceived risk)
- Intervention exposure Media exposure

Behavioural Beliefs and Outcome Evaluations

Attitude

Normative Beliefs and Motivation to Comply

Norm

Control Beliefs and Perceived Power

Self Efficacy

Environmental factors

Intention

Skills and abilities

Behaviour
Taking each of the model’s components in turn, we now discuss the implications for future interventions.

**Background Influences**

**Past behaviour**
This includes past tanning and sun burn experiences of individuals, family members and social groups and is relevant only in that past experiences have shaped current and probable behaviours. Given the failure to recognise the implications of skin damage that has already occurred, emphasis should be placed on increasing recognition of the damage and in communicating the signs of suspicious lesions, with recommendations for medical professional consultation. We have noted earlier the promise offered by appearance-focussed interventions for adolescents and young adults both in recognising damage already done to skin and in breaking the cycle of behaviour that will lead to further damage in the future.

**Demographics and Culture**
Current individual, family and social behaviours and lifestyles that influence sun protection should be recognised, with the focus on communal responsibility for encouraging safe sun exposure strategies. While there is evidence that parents take particular care to prevent young children from excess sun exposure, this appears often to be at the expense of their own sun protection. Strategies should focus on communicating ongoing risk for all age groups and on providing practical advice for parents for ensuring their children accept and support sun protection measures. This should include such possibilities of enabling children to select measures from a range of options such as types of clothing, style of sun hats, brands or types of sun cream.

The benefits of increasing the role of schools in communicating, modelling and reinforcing sensible sun protection strategies has already been discussed in earlier sections. Gaining active participation from children rather than communicating information passively as part of standard lessons is recommended. Strengthening awareness of the facilities available on the Cancer Research UK’s SunSmart website will assist in achieving this.

**Attitudes towards tanning**
The literature review and the research findings all highlight the strength of attitudes regarding the perceived social and individual benefits of acquiring a tan. As we have noted, changing attitudes and perceived norms is not a simple task and will require coordinated action at all levels and the investment of resources over time. Changes can be expected to be small but incremental. Given that attitudes are a key component of behavioural, normative and control beliefs, this should a central component of any future intervention strategy. Strategies used in previous studies discussed earlier (e.g. Mahler et al 2006) which used excerpts from focus groups discussing the positive aspects of sun protection to address social norm issues should be considered.
Personality, Moods and Emotions
This links closely to issues relating to self concept and to attitudes and perceived norms discussed above.

Individual differences and perceived risk
This includes skin type, history of ability to tan rather than burn and other related factors. Individual risks due to skin type appear to be recognised; with those particularly prone to burning noting the precautions they have been obliged, through past painful experiences, to take. Those with children who have difficulty tanning appear to recognise the problems and to have developed effective strategies for their children.

What requires addressing is the unrealistic optimism and denial of individual risk which was a clear central theme throughout the research. There is a need to balance raising awareness of personal risk through a range of communication channels with the danger of maladaptive responses to negative images and excessive fear appears resulting in resistance to, and denial of, the messages.

Intervention and media exposure
A major challenge is that awareness of prior intervention activity including SunSmart UK is extremely low and reaction by focus group participants to existing information leaflets was not overly positive. We have discussed the need to strengthen the way in which these leaflets are distributed and also to consider delivering the key information through other channels such as posters and signage.

Of greater significance is the need to counter the confusing, conflicting and often sensationalised media coverage of issues such as sun beds and Vitamin D and we have already noted the need for both reactive and proactive media liaison.

An additional aspect that should be considered is the role of media editorial and programme content in perpetuating and reinforcing perceptions regarding the desirability and glamour of a sun tan. This is best addressed at national, regional and local levels and will, like social norms, take a lengthy period of time before any discernable changes are evident. While legislation might be desirable, it is unlikely to be effective due to the large amount of television and print material that originates from outside the UK. International liaison to lobby for change is recommended but is unlikely to achieve change in the short term.

The perceived conflict between SPF factors recommended by commercial marketers and that provided in health-sourced information has already been discussed, as has the apparent conflict in advice regarding avoiding the sun from 11am – 3pm and advice from other agencies to increase physical activity. However, we must stress that the impact and credibility of these other sources, particularly commercial sources far outweighs the impact provided by health organisation sources in regard to sun protection and must be resolved.
These background influences directly feed into the three key beliefs shown in Figure 8, with normative beliefs known to be strong across all segments and particularly influential among younger age groups. The impact of each of these beliefs is now discussed in more detail.

**Behavioural, Normative and Control Beliefs**

Each of the three sets of beliefs are relevant and are discussed in terms of their potential impact on current and future sun protection behaviours as they directly impact on attitudes, norms and perceived self efficacy to modify individual behaviours or to influence the behaviour of others.

**Behavioural Beliefs**

There are several incorrect beliefs that should be addressed in all future leaflets, posters, face-to-face communication and in all material supplied to the media:

- artificial tans protect against burning / skin damage
- moisturiser prevents skin damage

The strongest beliefs evident from both the research and extant literature relate to unrealistic optimism regarding personal risk of sun exposure-related behaviours. Coupled with this is the failure to accept that lack of adequate sun protection for children jeopardises their future health.

**Normative Beliefs**

The strength of social norms regarding the personal and social value of acquiring a sun tan presents a significant barrier to intervention effectiveness. Changing social norms and the entrenched behaviours they generate will require an integrated effort from all possible relevant organisations over many years. It would be extremely beneficial to obtain the support of the media in this, although getting changes to the way people are portrayed in television programming, movies etc will require not just national but international collaboration.

**Control Beliefs and Perceived Power**

This includes the following:

- Outdoor workers who feel that the nature of their job prevents them from using effective sun protection strategies and who therefore present a fatalistic perspective of their own risk.

- Outdoor workers who believe that current legislative and regulatory provisions prohibit their providing sun protection for children, let alone advising or assisting children in effective application of sun cream.
Parents who face resistance from their children to the application of sun cream or the wearing of sun protective clothing.

Specific Communications-focussed recommendations

Our specific communications-focussed recommendations are as follows:

Align SPF advice in all future leaflets with the advice provided by major commercial organisations to ensure that the perceived conflict does not jeopardise the acceptance of advice from existing health sources.

Simplify wording in all written communications to ensure that readability does not compromise comprehension; convert leaflets to posters for outdoor workers and posters / signs for use at key outdoor locations such as beaches. The assistance of local authorities and organisations such as RNLI to display material is recommended. This is particularly relevant in relation to UV index information as the current leaflet was identified as confusing and it is known that people do not understand the personal relevance of the various index levels to their own behaviour.

Improve perceived power and self efficacy by providing clear advice to outdoor workers and their employers regarding current rights and responsibilities under existing legislation and regulations. In addition, endeavour to improve the availability of sun protection measures such as sun cream packs or dispensers, protective clothing such as hats and shaded areas wherever possible at key outdoor sites.

Improve self efficacy by providing practical advice and tips for parents who have difficulty in getting children to practice sun protection strategies. Emphasise that sensible sun protection does not mean stopping enjoyable activity. In order to gain visibility, the local media should be contacted to investigate whether this type of activity could be turned into a competition or other form of promotion with prizes being offered for interesting, effective or novel approaches to gaining buy-in from children.

Change attitudes by increasing awareness of the relevance of health risk information for individuals and for children, possibly using appearance-based interventions initially until momentum can be gained in relation to coordinated communications involving other organisations such as commercial marketers.

Influence attitudes and norms by utilising schools as a key partner in communicating sun protection messages and modelling appropriate behaviours and seek active participation from children in the design and distribution of messages. Encourage local businesses, including local newspapers, to display winning competition entries and to donate prizes where competitions are used.

Reinforce self efficacy by involving all health professionals, including retail pharmacy staff, health visitors lifeguards etc in communicating practical advice and
tips. Develop a tailored version of practical advice that can be used by hospital staff to communicate with parents of new born infants regarding sun protection strategies as part of existing skills and information delivery, with messages being later reinforced by health visitors etc. This type of activity should then be extended to incorporate provision of relevant information, including practical advice and recommended strategies, for all child care venues.

**Specific Skin Cancer Detection Strategies**

We discussed detection strategy options in the April 2008 report and can find no evidence to suggest that these options should be revised. Many of the intervention strategies discussed so far will help to raise awareness not just of sun protection strategies but of the need to face personal risk and to actively check for suspicious lesions. The biggest barriers to detection are: optimism bias / risk denial and self efficacy.

Interpersonal / face-to-face communications are more likely to be effective rather than information provisions through leaflets or even mass media in addressing optimism bias and overcoming risk denial, therefore the involvement of all relevant health professionals in proactive approaches is recommended. In addition, the appearance-based interventions discussed earlier have merit in getting people to accept evidence of personal skin damage.

There is a need to improve self efficacy in terms of self checking particularly among younger age groups and to make screening checks available where people work and relax. Again, face-to-face individual contact is likely to be more effective than more impersonal forms of communication. This would involve mobile screening facilities which would visit key sites including beaches, major outdoor venues such as the Eden Project and workplaces. Having screening facilities available on site was endorsed by the outdoor workers who participated in the focus groups as a positive action. This could readily be extended to encompass community centres, retirement facilities etc. We noted in the 2008 report that over 70% of those screened in a Veteran’s Affairs population revealed skin changes warranting further investigation, indicating that a focus on similar populations here could easily be justified.

Individual doctor’s surgeries could also offer skin checks, either as part of normal consultations or as dedicated clinic sessions. It may be possible to leverage off skin cancer screening of high profile sportspeople (such as the recent moves to screen all Somerset cricket players or other popular figures to encourage screening amongst particular consumer segments. Similar strategies have proven effective in Australia.

As we noted in the 2008 report, there are issues relating to the education of health professionals in detecting suspicious lesions and in terms of resources that require addressing.
Additional factors that should be included in the development of interventions include the use of quantitative benchmark surveys, systems for evaluation and review of current and proposed future interventions.

**Benchmark surveys**

As already noted, an additional component of the preparation for intervention delivery is the establishment of benchmark measures of existing attitudes, beliefs and actual sun exposure and sun protection behaviours. A benchmark survey of attitudes, beliefs and actual sun protection / skin cancer detection behaviours was therefore developed in conjunction with SWPHO staff, building on the pilot study conducted with UWE students in 2008 and aligning the questions with wider national research currently underway. The questions are compatible with those used in previous studies undertaken in other countries, particularly previous studies by Langford et al (2005)\textsuperscript{142} and Jopson & Reeder (2004)\textsuperscript{143} and the results will be compared with these studies.

The questionnaire (shown in Appendix D of Volume Two of this report) was distributed in print form through a variety of routes (including health trainers and other relevant staff) by Cornwall PCT employees with a hyperlink to an online version also available. This data will be analysed once sufficient questionnaires have been completed and a separate report compiled, comparing the data to previous international and UK-based studies and the pilot study conducted for the initial report in 2008.

It is important that this, or other similar instruments be used to measure attitudes and behaviours at the end of the summer period to gauge the impact of the 2009 interventions and identify aspects that will require specific focus in future years. This activity is a key component of overall evaluation and review strategies discussed in the next section.
Evaluation and Review

Decisions regarding how success will be evaluated should be determined at the initial stages of intervention development. Evaluation is not just the final stage in a particular programme, but it also serves to provide valuable insights for the development of future phases of activity.

In working with partners it is important to gain agreement on what will count as success (or otherwise) for components that you may not have direct control over. Where interventions are largely based in a community, the resources and techniques by which data can be collected needs to be determined and agreed by all parties – and contingency measures put in place to ensure that data can be collected as agreed if participating organisations or individuals within them become unable to continue to collect the data over time.

The following material draws on the sparse literature that specifically focuses on the evaluation of the effectiveness of social marketing interventions. Interventions pass through a hierarchy of effects, progressing from awareness through to, ultimately, an improvement in overall societal or environmental wellbeing. Given the lengthy time period between adoption of behaviours and potential impact on health issues, such as in the case of obesity-related illnesses, skin cancer etc, wellbeing may be something to aspire to, but more pragmatic interim measures may be needed. In the short term, we will need to focus on the three lower levels. Changes in social norms may occur over time, as they appear to be doing in relation to tobacco products, but it will be many years before any impact in skin cancer rates can be determined.

Figure 9: Levels of Social Marketing Effectiveness

- **Wellbeing**
  - (Improvement in social and environmental outcomes)

- **Social norm**
  - (Wide spread and sustained change in individual behaviour)

- **Behaviour**
  - (Change in desired behaviour)

- **Engagement**
  - (Connection with the concepts)

- **Awareness**
  - (Awareness of the concept)
Figures 10 and 11 provide guides to the types of changes that should be sought at each of the preceding levels – and provides a selection of techniques by which these changes can be measured.

**Figure 10 Changes Sought at Each Level of Effectiveness**

| Level       | Key changes sought                                      | Result level                                                   |
|-------------|----------------------------------------------------------|                                                              |
| Awareness   | Increase in awareness of issue                           | Individual changes in awareness                               |
| Engagement  | A change of attitude and contemplation of behaviour change | Individual changes in attitude and responses to programmes     |
|             | Behavioural responses to individual programmes            |                                                              |
| Behaviour   | Individual behaviour change                              | Individual changes in behaviour                               |
| Social norm | The desired behaviour change has permeated widely and     | Normative changes in attitude and behaviour                   |
|             | sustainably and is therefore maintained                  |                                                              |
| Well being  | The desired behaviour change has resulted in an           | Changes in social and environmental outcomes                  |
|             | improvement in quality of life for individuals and        |                                                              |
|             | society                                                 |                                                              |
Figure 11: Possible indicators of success at each level of effectiveness

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Means of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Awareness</strong></td>
<td>Surveys (formal / informal- advisable at the end of each summer period)</td>
</tr>
<tr>
<td>X% aware of issue</td>
<td></td>
</tr>
<tr>
<td><strong>Engagement</strong></td>
<td>Surveys as above</td>
</tr>
<tr>
<td>X% contemplating changing behaviour</td>
<td></td>
</tr>
<tr>
<td>X% discussing / responding / participating</td>
<td>Behavioural data (e.g. website hits, requests for brochures, calls to help-lines etc)</td>
</tr>
<tr>
<td><strong>Behaviour</strong></td>
<td>Self report as above</td>
</tr>
<tr>
<td>X% self report behaviour</td>
<td>Behavioural data (e.g. from organisations providing outdoor activities)</td>
</tr>
<tr>
<td>X% behaviour changes recorded</td>
<td></td>
</tr>
<tr>
<td><strong>Social norms</strong></td>
<td>Surveys</td>
</tr>
<tr>
<td>X% positive attitudes / positive media coverage</td>
<td></td>
</tr>
<tr>
<td>Anecdotal feedback / observation</td>
<td>Media and political tracking</td>
</tr>
<tr>
<td>Political environment, including regulatory provisions and policy changes</td>
<td>Anecdotal feedback</td>
</tr>
<tr>
<td><strong>Well being</strong></td>
<td>Social reports (annual complications of indicators of wellbeing)</td>
</tr>
<tr>
<td>X% increase in social outcome</td>
<td>Epidemiological data</td>
</tr>
<tr>
<td>X% increase in environmental outcome</td>
<td>Environmental data</td>
</tr>
</tbody>
</table>
Social marketing capacity building and training

This activity comprised two parts: Firstly, the Bristol Social Marketing Centre’s 3-day Continuing Professional Development Programme *Social Marketing Principles and Practice* was run in Cornwall by Lynne Eagle March 16 – 18, with the focus and all practical exercises relating specifically to sun protection / skin cancer detection strategies. The full programme is outlined in Appendix E of Volume Two of this report.

In addition, workshop training for Cornwall PCT staff is to be provided in the next few months to help build capacity and skills to enable staff to conduct future focus groups. Training will include the strengths and weaknesses of focus group-based research, recruitment strategies, development of moderator guides, participant information and consent processes, data gathering (e.g. audio recording), transcription and data analysis.

The data analysis section will provide an overview of the main computer-based analysis packages such as NVivo, but the focus will be on manual analysis of transcripts, thematic analysis techniques and the linking of data to theoretical models and the subsequent development of possible interventions. Simon Jones will deliver this part of the programme.

This will enable local PCT staff to conduct their own focus group research at suitable periods throughout the year in order to gain feedback from specific population segments or in relation to specific intervention development or delivery.
References


96 Anonymous (2004) Barnardo’s Work Bugs the BPCA. *Campaign UK*, 1 September, 32.


125 For examples of Worker and Employer guides to the provisions of Australian legislation regarding Skin Cancer risks for outdoor workers, see Cancer Council (Australia) and Work Cover New South Wales (www.workcover.nsw.gov.au)


Appendix One: EBSCO Resources: Key Elements

**AMED (Alternative Medicine)**
AMED provides an alternative medicine database for physicians, therapists, medical researchers and clinicians looking to learn more about alternative treatments. AMED contains basic bibliographic records for relevant articles from over 500 journals, with the scope of coverage being mainly European. AMED is produced by the Health Care Information Service of the British Library.

**British Nursing Index**
British Nursing Index is a nursing and midwifery database, covering over 200 UK journals and other English-language titles. Produced by a partnership of UK libraries serving nurses, it is the most current nursing database for UK journals, and has featured concise original abstracts for every reference included since January 2004.

**Business Source Premier**
Business Source Premier is the industry’s most used business research database, providing full text for more than 2,300 journals, including full text for more than 1,100 peer-reviewed titles. Business Source Premier is superior to the competition in full text coverage in all disciplines of business, including marketing, management, MIS, POM, accounting, finance and economics. This database is updated daily on EBSCOhost.

**CINAHL Plus**
CINAHL Plus provides indexing for 3,802 journals from the fields of nursing and allied health, with indexing back to 1937. CINAHL Plus also contains searchable cited references for more than 1,270 journals. Full text material includes nearly 80 journals plus legal cases, clinical innovations, critical paths, drug records, research instruments and clinical trials.

**EconLit**
EconLit, the American Economic Association’s electronic database, is the world’s foremost source of references to economic literature. The database contains more than 1,010,900 records from 1969-present. EconLit covers virtually every area related to economics.

**Education Research Complete**
Education Research Complete is the definitive online resource for education research. Topics covered include all levels of education from early childhood to higher education, and all educational specialties, such as multilingual education, health education, and testing. Education Research Complete provides indexing and abstracts for more than 1,870 journals, as well as full text for more than 1,060 journals, and includes full text for more than 133 books and monographs, and for numerous education-related conference papers.
EJournals from EBSCOhost®: Find article-level access for thousands of E-Journals available through EBSCO's Electronic Journal Service (EJS). For users with a valid subscription, EBSCO's SmartLinks Technology provides links directly to publishers' content.

GreenFILE
GreenFILE offers well-researched information covering all aspects of human impact to the environment. Its collection of scholarly, government and general-interest titles includes content on global warming, green building, pollution, sustainable agriculture, renewable energy, recycling, and more. The database provides indexing and abstracts for more than 384,000 records, as well as Open Access full text for more than 4,700 records.

International Bibliography of the Social Sciences
The International Bibliography of the Social Sciences (IBSS), produced by the London School of Economics and Political Science, includes over 2.5 million references to journal articles, books, reviews and selected chapters dating back to 1951. IBSS focuses mainly on the four core social science disciplines - anthropology, economics, politics and sociology - but it also covers a range of interdisciplinary subjects. IBSS is especially strong on international material with over 50 per cent of journals published outside the US or UK. Over 2,800 journals are regularly indexed and some 7,000 books included each year. IBSS is updated weekly.

MEDLINE
MEDLINE provides authoritative medical information on medicine, nursing, dentistry, veterinary medicine, the health care system, pre-clinical sciences, and much more. Created by the National Library of Medicine, MEDLINE uses MeSH (Medical Subject Headings) indexing with tree, tree hierarchy, subheadings and explosion capabilities to search citations from over 4,800 current biomedical journals.

SocINDEX
SocINDEX is the world's most comprehensive and highest quality sociology research database. This database features more than 1,986,000 records with subject headings from a 19,600+ term sociological thesaurus designed by subject experts and expert lexicographers. This product also contains informative abstracts for more than 1,130 "core" coverage journals dating as far back as 1895. In addition, this file provides data mined from more than 430 "priority" coverage journals as well as from over 2,800 "selective" coverage journals.

SPORTDiscus
Provided by the Sport Information Resource Centre, SPORTDiscus offers comprehensive, bibliographic coverage of sport, fitness and related disciplines. This database contains well over 1,392,000 records with journal and monograph coverage going back to 1800; over 22,000 dissertations and theses and reference to articles in 60 different languages.
Appendix Two: Appendices Contained within Volume Two

Appendix A: Moderators Guide Used for Focus Groups

Appendix B: Information Summary Letter for Respondents

Appendix C: Leaflets and Photographs Used During Focus Groups

Appendix D: Benchmark questionnaire

Appendix E: Social Marketing Principles and Practice Professional Development Programme Outline

Appendix F: Competition and Partnership Evaluation Checklists