The development of a ‘Sun Safe Code’

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SUMMARY
The last 20 years have seen a dramatic rise in the number of cases of skin cancer in the UK, and it is now the second most common form of cancer in this country. Since 1993, the Health Education Authority (HEA) has run a media-led campaign aimed at educating the general public about the risks associated with exposure to the sun, and the steps they can take to reduce these risks—avoiding the midday sun, seeking shade, covering up and using a high factor sunscreen. The campaign recognises the importance of working with commercial partners, and the sunscreen industry represents one such opportunity. Research suggests that it is the sunscreen message that gains the most media coverage and is the one that people are most ready to take up. There is a danger, however, that this message reinforces the idea that it is possible to tan safely and encourages people to stay out longer in the sun. In order to encourage people to recognise that sunscreens per se do not make the sun safe, and to regard sunscreens as just one part of a broader strategy for keeping safe in the sun, the HEA has developed a ‘Sun Safe Code’. This code has been developed and pretested with members of the public, and in consultation with health professionals and sunscreen manufacturers. The final code has been made available to a wide range of health educators and commercial organisations, and can be used in a wide variety of situations, either on product or at point of sale. This paper describes the developmental process.

Key words: commercial partners; qualitative research; skin cancer; sunscreens

BACKGROUND
Skin cancers (basal cell carcinoma, squamous cell carcinoma and melanoma) are very common in white populations world-wide. They are mainly caused by exposure of sun sensitive (white) skin to excessive solar radiation (sunlight), and excessive sun exposure in childhood is a critical factor (MacKie et al., 1987). Over the last 20 years the incidence of skin cancer in the UK has more than doubled and it is now the second most common form of cancer in this country [Office for National Statistics (ONS), 1996a]. In fact, many dermatologists believe it to be the most common cancer because often minor cases are not officially registered by doctors (Skinner, 1994).

The UK Skin Cancer Prevention Working Party has estimated that at least four out of five cases of skin cancer are preventable. Furthermore, skin cancers are visible cancers and so can be detected early and removed before they pose a threat to life. Thus a combination of adequate skin protection against the sun’s rays and early detection of any skin cancers that do arise has the potential to make skin cancer a disease from which few people in the UK will suffer and from which even fewer will die.

In 1993, the Health Education Authority (HEA) launched the ‘Sun Know How’ campaign, funded by the Department of Health. The campaign is media-led, aiming to raise awareness of the dangers of skin cancer and influence behavioural change by securing unpaid media coverage of national and local events and promotions. The campaign supports a network of local health professionals who take the message to the community, which in turn generates local media coverage. The campaign has also forged commercial partnerships to take the message out of traditional health settings into more everyday
surroundings, such as the high street. The purpose of this is to provide people with the means of behavioural change. The ‘Sun Know How’ range of clothing and swimwear, for example, aims to influence the high street by demonstrating the appeal and marketability of sun protective clothing. The clothes are designed to cover more of the body, but at the same time, to be cool and comfortable. All the fabrics have been tested by the National Radiological Protection Board to ensure that they block at least 98% of ultraviolet rays, even when stretched. The clothes are sold through a mail order catalogue, the success of which has attracted the interest of various retail chains who are keen to develop their own ranges of sun safe clothing. As a result, sun protective clothing is beginning to see its way on to the high street.

Research suggests that while people are becoming increasingly aware of the dangers of skin cancer and the steps they can take to protect themselves from the sun, they are still driven by the desire to have a tan (Howard, 1997). This means that they tend to rely heavily on sunscreens rather than on other forms of sun protection. Present uncertainty about the role of sunscreens in preventing skin cancer is well documented (McGregor and Young, 1996). It is reasonable to say that regular use of broad spectrum sunscreens should help prevent skin cancer if they are used to reduce the amount of sunlight reaching the skin’s surface. However, if they are used to prolong the amount of exposure time they are unlikely to afford any long-term benefits; indeed, their use may increase the risk of skin cancer.

The Health Education Monitoring Survey (a series of studies designed to monitor trends in the health-related knowledge, attitudes and behaviour of adults aged 16–74 living in private households in England) clearly illustrates the problem (HEA and ONS, 1997). While over two-thirds (68%) of adults used a sunscreen, a higher proportion of people who used a sunscreen actually reported being sunburnt in the last 12 months—30% compared with 17%. This may be because people using a sunscreen feel more protected and therefore may stay out in the sun longer than is safe. Although, encouragingly, the proportion of people who thought a suntan was important decreased slightly from 28% in 1995 to 25% in 1996, attitudes towards a tan remain positive. Forty-five per cent of respondents agreed that having a suntan made them look healthier and 45% thought that a suntan made them look more attractive. This suggests that although people may be aware that the sun can damage their skin, their perception is that by wearing a sunscreen they can continue to expose their skin directly to the sun to achieve a ‘safe’, ‘healthy’ tan.

In research conducted to look at public awareness of media coverage of sun protection issues, the message most frequently recalled by the public was ‘use a sunscreen’ (55%). The next most frequently recalled messages were ‘cover up’ (36%) and ‘avoid the midday sun’ (31%) (ONS, 1996b). This is, perhaps, not surprising given the prominence the sunscreen message obtains in the media. Research into magazine coverage of information regarding protection from the sun showed that between 1990 and 1995, the number of magazines carrying sunscreen advertisements increased from 20% to 29%, and that the ‘use a high factor sunscreen’ message was mentioned by more than twice as many magazines with main articles on sun protection in 1995 as in 1990 (Bostock et al., 1997). An analysis of print and broadcast media conducted between March and August 1996, demonstrated that sunscreen manufacturers achieved the highest volume of coverage of sun protection issues, and that, as a result, ‘use a high factor sunscreen’ was the most strongly delivered of all the sun protection messages (Infopress, 1996).

For these reasons, the HEA set out to develop a ‘Sun Safe Code’ to give clear and simple advice on how to avoid sunburn and reduce the risks of skin cancer. The aim was to encourage people to recognise that sunscreens per se do not make the sun safe, and to regard sunscreens as just one part of a broader strategy for keeping safe in the sun. As a visual representation of the campaign messages, it was intended that the code be incorporated in the range of campaign materials including a leaflet, a mail order catalogue and an A3 poster.

More importantly, however, the development of a Sun Safe Code was seen as an opportunity for working in alliance with commercial partner—the value of which is becoming increasingly recognised in the area of public health (Kickbusch, 1997). Key players in the sunscreen industry in the UK [Boots plc and the Cosmetic Toiletries and Perfumery Association (CTPA)] had expressed their commitment to providing consumers with motivational and effective
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DEVELOPMENTAL RESEARCH

Objectives and methodology
Qualitative research was commissioned to make detailed recommendations for the development of a Sun Safe Code using variations of a code originally developed in Australia as a starting point (Research Works, 1996). The research was conducted in two stages: individual interviews followed by group discussions.

Thirty-two interviews lasting 20–30 min were conducted in two hall locations (Oldham and High Wycombe) in September 1996. Qualitative ‘hall’ tests are increasingly being used in situations which require individual, spontaneous feedback. A qualitative hall day involves spontaneously recruiting respondents from the street into a church hall or similar location. A qualitative interview is then carried out, usually lasting between 15 and 30 min, though sometimes for much longer. The interview can be as long or as short as each respondent needs which is an advantage over pre-recruited individual interviews of a fixed time length. Individual respondents are recruited in central locations and inevitably come from a much broader catchment area than groups. In the context of health promotion, qualitative hall days are particularly useful in pretesting advertising concepts (and in this case, a Sun Safe Code) where initial responses can be all-important. This method encouraged a range of individual responses and was used to develop elements of the code which were then tested out in the group discussions. The sampling criteria were similar to those for the groups, as described below. However, this approach also provided the opportunity to talk to those not covered in the sample structure, such as children accompanying their parents and people not normally confident enough to attend group discussions.

The ‘hall’ days were followed by eight group discussions lasting an hour and a half, with seven or eight respondents in each group. The sample was biased towards women (five groups of women and three groups of men) since women are more likely to regard having a suntan as important and more likely to use a sunscreen (HEA and ONS, 1997). Groups were structured by age (ranging from 16 to 54 years), lifestage (three groups were composed of mothers with children under 5 years), socio-economic group (half with ABC1s, half with C2DEs), location (Watford, Birmingham, Brighton and Newcastle), and attitude towards sunbathing (five groups with people who thought a suntan was very or fairly important; three groups with people who thought a suntan was not important). Anyone who completely rejected the idea of being out in the sun was excluded. At least two people in each group had bought a sunscreen within the last 12 months and no one rejected the idea of using a sunscreen. Within each group there was a good representation of skin type (ranging from fair skin which never tans and always burns, through to olive skin which never burns and always tans). Respondents were identified by ‘recruiters’ using a contact questionnaire. ‘Recruiters’ work freelance from home for a number of different research companies. They use a contact questionnaire to select people according to the desired knowledge, attitude and behaviour characteristics.

Topics for discussion included the following: attitudes towards sunbathing (behaviour in the sun, importance of having a tan, knowledge of the dangers); perceptions of sunscreens (use of and knowledge of different types); impact and understanding of sunscreen labelling; reactions to the concept of a Sun Safe Code; reactions to specific examples of a Sun Safe Code. The original wording used in the ‘hall’ tests (presented with and without icons) is given below. Variations of this wording were introduced in the group discussions to test out the acceptability of different approaches.

- Avoid midday exposure.
- Seek natural shade.
- Wear cover-up clothing.
- Use a broad spectrum sunscreen SPF 15+.
- Never expose babies and children under 6 months to the sun.

The individual interviews and group discussions were taped and transcribed to allow subsequent analysis. The data were analysed by reading through the transcripts and annotating the margins. These annotations summarised relevant points and, whenever appropriate, included interpretative thoughts about them. This approach to the analysis of qualitative research is described in detail in Gordon and Langmaid (1988).
Findings and recommendations

Most respondents relied on sunscreen for their main form of sun protection. Few felt that it was necessary to take further steps to protect themselves. This was largely because protection from the sun tended to be re-active rather than pro-active, based around avoidance of burning rather than the risk of skin cancer. Most felt that it was unnecessary to adopt a wider Sun Safe Code unless burning, peeling or discomfort were experienced. Those who had themselves a high propensity to burn and those who were looking after children were the most likely to adopt a pro-active approach to sun protection.

I only bother with sun cream when I can actually feel that I am burning. (Male, 34–55 years, sun tan not important)

I put cream on my son every half hour, but for me I put it on once and then I think that’s OK. If I start burning then I will put on some more. (Female, 19–24 years, sun tan is important)

These results suggest that in order to have an impact upon behaviour a Sun Safe Code would need to take into account what people currently know and feel about sun safety. Thus it would need to:

- provide reasons to motivate adherence to the Sun Safe Code; an introductory line giving clear warnings about the incidence of skin cancer, for example, attracted people’s attention and provoked reading;
- emphasise that the code should be adopted as a preventative measure, rather than as a response to burning;
- be realistic and achievable for all, particularly those most committed to getting a tan.

Visual images proved vital in drawing attention to the code and sustaining interest. They tended to raise the impact of the code in comparison to other information on the bottle. Visuals were more successful when directly actionable and complementary to the advice. They provided a clear, concise and instant means of conveying the information.

Findings and recommendations on individual elements of the code were as follows.

- ‘Avoid midday exposure’ presented a number of problems. Many respondents were uncertain what was intended by the term ‘midday’, relying heavily on the visual for further clarification. They did not like the words ‘avoid’ and ‘exposure’ in this context, arguing that they were not colloquial enough. ‘Stay out of the sun when it’s hottest’ used more everyday language and helped to give a sense of the strength of the sun during these times by conveying a feeling of danger (though ‘Stay out’ was sometimes perceived as being too forceful and unfriendly).
- ‘Seek natural shade’ often prompted people to ask why the shade had to be ‘natural’ as opposed to ‘man made’.
- Many younger respondents felt that ‘cover up’ clothing conjured up the image of protective, full-length garments. The accompanying visual needed to reassure people that cover-up clothing could be achievable and desirable.
- Of all the information on the code, the phrase ‘Use a broad spectrum sunscreen SPF 15+’ was the least likely to be understood. Most respondents were not familiar with the term ‘broad spectrum’. Few related it to UVA/UVB radiation or had any idea that it was suggesting achieving a level of protection against both. Although the majority were familiar with Sun Protection Factor (SPF), most did not use it properly (according to length of time in the sun) or know the parameters (what protection they needed for their skin type and time in the sun). In reality, choice was often made on a ‘trial and error’ basis—based on estimations of low, medium and high protection. This supports the findings of previous research conducted by the HEA which found that although 67% of respondents had heard of SPF, only one in five correctly understood what the term meant (Raw, 1996). Technical information on sunscreen products seemed to cause misunderstanding for members of the public.

I don’t really know what factors are; it has never been explained to me before, so I just use what seems to suit my skin. (Male, 19–24 years, suntan is important)

If the bottle says it has protection from UVA/UVB in it, then I would expect it to have the same level in low and high factor sunscreens—it’s got nothing to do with burning, has it? (Female, 19–24 years, suntan is important)

- For many mothers, the message ‘Never expose babies and children under 6 months to the sun’ reflected an existing feeling that this was particularly important. However, since the majority were already aware that babies should be kept out of the sun, referring specifically to babies...
rather than children risked narrowing the focus of the message. Respondents were less likely to recognise the importance of the message to children who had reached an age where they could play outside. Although mothers were still adamant that burning should be avoided, concern about exposure to the sun was reduced since many felt that children looked ‘healthy’ with ‘a bit of colour’.

**CREATING THE CODE**

Using the findings and recommendations from this research, the HEA had a series of brainstorming sessions with members of the Sun Know How team and its Advisory Group (which includes a photobiologist and a dermatologist). The most difficult decision was how to tackle the sunscreen labelling issue given the current level of confusion over technical terms and the difficulties of trying to communicate complicated issues in a clear and concise way. Given the fact that most UK products now contain good UVA protection, it was decided to concentrate on encouraging people to use sunscreens properly, rather than trying to go into detailed explanation about UVA and UVB. Many people, if not most, do not apply the sunscreen at the same application density at which it is tested (under these conditions, one 100 ml bottle would be enough for about three whole body applications). Recent research has shown that although almost two-thirds of women used sun protection products in 1996, only 25% of these were heavy users (using three or more tubes, bottles or other containers a year). The majority (43%) tended to be light users, using one or fewer containers a year. The remainder (32%) were medium users using two containers a year. Sunscreen usage levels among men showed a similar pattern: 57% of men used a sunscreen product in 1996; 23% of these were heavy users, 31% medium users and 46% light users (Mintel, 1997).

As a result of these discussions, the following wording was proposed.

Reduce your risk of skin cancer by taking a few simple precautions:

- Take care not to burn
- Head for the shade when the sun is hottest
- Cover up
- Wear a hat and sunglasses
- Generously apply a high factor sunscreen
- Take special care to protect children and babies

Three design companies were asked to design icons for the code which were simple, easy to understand, non-ambiguous, eye-catching, motivating and, above all, versatile. The designs produced are illustrated in Figure 1.

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**Fig. 1:** New codes used in pretesting.
PRETESTING

Objectives and methodology
Qualitative research was commissioned to determine which set of icons was most eye-catching, appealing and motivating to the general public (across different contexts) and to make detailed recommendations for any improvements to the icons and text (Front Line, 1996). Fifty-nine individual interviews lasting ~20 min were conducted with teenagers and adults aged between 13 and 54 years in two hall locations (Bromley and Birmingham) in November 1996. The sampling criteria were similar for the developmental research described above (mix of sex, age, socio-economic group, skin type, and attitudes towards sunbathing). The same exclusions applied. The final code was developed in consultation with the sunscreen industry. Meetings were held with Boots and the CTPA to discuss the designs and the research findings.

Findings and development of final design
The results of this research identified code C as having the most potential. Respondents across the sample found the circular format more eye-catching and interesting than the alternatives, which they felt lacked originality. They also felt it was appropriate to focus on ‘Take care not to burn’ as the core message. This was perceived as underlining all other elements of the code—it was the motivation for taking the actions suggested. It also emphasised the importance of taking action before starting to burn—encouraging a pro-active approach to sun protection.

The designer’s attempts to solve the problem of legibility by reducing the number of words (‘Apply generously’ for example), had been successful, largely because the phrase worked in combination with the icon to ensure that none of the meaning was lost. As a result, a decision was taken to follow this example by reducing all the messages (with the exception of the core message) to two words each, thus improving the design and increasing legibility.

Although the introductory line, ‘Reduce your risk of skin cancer by taking these simple precautions’, worked well, this line could only be included for use on the Sun Know How campaign’s materials. It had to be excluded from the code that was to be included on the product label due to legal reasons. In Europe, a sunscreen is considered a cosmetic, and, as such, cannot make medical claims. This differs from the USA where sunscreens are classified as cosmetic-drugs and Australia where they are classified as therapeutic drugs.

Although the overall design of code C was more successful, in terms of individual icons, respondents felt that each design had its strengths. Indeed, there was a high level of agreement over which icons would make up an ideal set, and the final code drew on elements of more than one design. The final design is illustrated in Figure 2.
The research findings relevant to the development of each element of this are as follows.

- The ‘Take care not to burn’ icon was thought to encapsulate the core message in a way that was original and effective. The only problem was a practical one, identified in discussions with manufacturers after the research. Unless the code was contained within the box, it would pose problems for manufacturers wishing to incorporate it on sunscreen bottles. A decision was taken to draw the icon into the middle of the box, keeping it larger than the other icons to maintain its stance as the core message.
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- The ‘Apply generously’ icon was redesigned with slightly less sunscreen coming from the bottle because respondents felt that the original suggested a puddle of spilt sunscreen rather than simply a generous amount.
- The ‘Seek shade’ icon was made into a complete circle and labelled with ‘11’ and ‘3’ because it was not considered clear in its portrayal of the 11 a.m.–3 p.m. time frame.
- The ‘Protect children’ icon was replaced with the alternative showing a buggy and a parasol. Respondents felt this communicated the message more clearly than the original, which many thought looked more like a shopping trolley than a pram with a sunshade.
- The icon combining ‘Cover up’ and ‘Wear sunglasses and a hat’ was well received. The sunglasses and hat images were self-explanatory, and including them with a T-shirt under the title ‘Cover up’ appeared to strengthen the association of a hat and sunglasses with the prevention of skin cancer and sunburn (as well as the prevention of sunstroke). Shorts were not thought necessary, and respondents felt that the sunglasses should be slightly less masculine than in the original.

CONCLUSIONS

This paper demonstrates how research can be built into the design process to ensure the development of a code which is appealing and motivating to the target audience. The final Sun Safe Code, described above, (including the introductory line, ‘To reduce your risk of skin cancer follow these simple precautions’) is now used on all the Sun Know How campaign’s materials including leaflets, posters and clothing tags. The code is also available for sunscreen manufacturers for use in a wide variety of situations such as on pack or at point of sale. Major UK retailers including Boots, Superdrug, Asda and Tesco are using the code at point of sale. Boots and Sainsbury are using the code on pack. The uptake of the Sun Safe Code demonstrates how, by involving commercial partners right from the beginning, a health promotion message can be taken out of the ‘health setting’ into more everyday surroundings. Although, in this context, the explicit connection with skin cancer had to be removed, the implicit connection remains through being the logo for the Sun Know How campaign.

The code is a registered trademark of the Health Education Authority, and guidelines have been produced for any organisation or individual wishing to use the logo on any printed item or product intended for sales, sales promotion, or commercial gain of any kind. Licensing information on the Sun Safe Code can be obtained from The Licensing Company on 0171-868 0066 or at Suite One, Cumberland House, Kensington Road, London W8 5WX, UK.

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