



**Australian Government**  
**Department of Health and Ageing**

# Evaluation of the Effectiveness of the Graphic Health Warnings on Tobacco Product Packaging 2008

## **Executive Summary**



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Graphic Health Warnings on  
Tobacco Product Packaging  
2008

**Executive Summary**

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## **Evaluation of the Effectiveness of the Graphic Health Warnings on Tobacco Product Packaging 2008 – Executive Summary**

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# ABBREVIATIONS

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**Eval 2008:** 2008 Evaluation of the Effectiveness of the Graphic Health Warnings on Tobacco Product Packaging

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**Eval 2000:** 2000 Evaluation of the Health Warnings and Explanatory Health Messages on Tobacco Products

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**Eval 1996:** 1996 Evaluation of the Health Warning Labels on Tobacco Products and the Commonwealth's Information Line

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**Lit Rev 2008:** 2008 Literature Review conducted as part of the Evaluation

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**Tel Sur 2008:** 2008 Telephone Survey conducted as part of the Evaluation

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**Grps 2008:** 2008 Group Discussions conducted as part of the Evaluation

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**Stk Ints 2008:** 2008 Stakeholder Interviews conducted as part of the Evaluation

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**Tech Rep 2008:** 2008 Technical Report: Methodological issues and details of the 2008 Evaluation

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# EXECUTIVE SUMMARY

The following report details the findings of an evaluation of the graphic health warnings on tobacco product packaging and is similar to research implemented for an earlier evaluation study conducted in 2000<sup>a</sup> (Eval 2000)<sup>1</sup>. The broad aim of the 2008 research (Eval 2008) was to determine and evaluate the effectiveness of the graphic health warnings on consumers and to evaluate the impact of the content of the health warnings system in achieving their purpose to:

- increase consumer knowledge of the health effects relating to smoking;
- encourage the cessation of smoking; and
- discourage smoking uptake or relapse.

In more specific terms, the aim was to examine smoker and non-smoker reaction to the graphic warnings as a series, as well as, to specific elements of the tobacco health warnings as per the requirements of the Trade Practices (Consumer Product Information Standards) (Tobacco) Regulations 2004. These include: the warning messages; corresponding explanatory messages; corresponding graphics; Source Attribution Statement ('Health Authority Warning'); quit message ('You Can Quit Smoking...'); Quitline phone number; Quitnow web address; and the information message on the side of cigarette packs.

## 1 METHODOLOGY

The 2008 research included:

- a literature review (Lit Rev 2008) of research studies on graphic health warning labelling on tobacco products;
- twenty eight semi-structured interviews (Stk Ints 2008) with key informants from organisations with an interest in tobacco control;
- twenty four group discussions (Grps 2008) (smokers, ex-smokers, and non-smokers); and
- a nationwide telephone survey (Tel Sur 2008) of 1304 randomly selected Australians, aged 15 years and over. Where relevant the findings from the 2008 survey were compared with those from the 2000 survey.

## 2 UNDERLYING PATTERNS OF BEHAVIOUR

In the 2008 telephone survey, there was a significant decrease in the proportion of the population who considered themselves current smokers, now 17%, compared to 20% in 2000. The majority of smokers (86%) only smoked cigarettes. One in ten smokers (10%) indicated that they had smoked cigars in the past 12 months, 1% smoked a pipe, and 3% indicated that they smoked both cigars and pipes. Of those who had purchased cigars, 71% bought them 'singularly' and 26% bought them 'in a pack'.

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a The 2000 study was an evaluation of community reaction to the text-only health warnings and accompanying explanatory messages. It comprised a nationwide telephone survey supplemented by consumer group discussions and interviews with stakeholders.



There was no significant change in the patterns of smoking behaviour in 2008 from 2000, with the majority (85%) of smokers smoking 'regularly, every day or most days', one in ten (10%) 'not smoking every day but at least once a week', and 5% claiming to smoke 'less than once a week'. However, there have been significant changes<sup>b</sup> in the proportion of females who have reduced the amount of tobacco they smoke in a day, from 27% in 2000 to 33% in 2008.

Contemplators, those smokers considering quitting in the next 1 month or 6 months, were generally more likely than non-contemplators to reduce the amount of tobacco they smoked in a day. 'Light'<sup>c</sup> smokers were also more likely than 'moderate'<sup>d</sup> or 'heavy'<sup>e</sup> smokers to have eased up in this way. Non-contemplators and 'heavy' smokers were more likely to have 'done nothing different' in the past 12 months in regard to their smoking behaviour (see Section 5.1).

Among those who took part in the group discussions (Grps 2008) similar attitudes were expressed to those found in the 2000 study; for example: committed smokers appeared more entrenched in their beliefs regarding their right to exercise freedom of choice by choosing to smoke, and were less concerned about the likely health consequences of smoking. They were more critical than either ex-smokers or those contemplating quitting, of what they saw as an increase in the number of restrictions placed on smoking in public.

Smokers in general, acknowledged the role of habit and the influence of the addictive properties of tobacco in the maintenance of their smoking behaviour. Many contended that they have an emotional attachment to the habit which appears to be stronger than any rational consideration they may have to quit. Once again, as in 2000, the benefits of smoking centred on the enjoyment and pleasure derived from smoking, together with the comfort and the relief from stress and anxiety it was thought to provide (see Section 5.1).

**Conclusion:** Between the 2000 and 2008 evaluations the underlying patterns of behaviour have largely remained unchanged; however, contemplators and 'light' smokers have demonstrated a willingness to reduce and ease up on their tobacco consumption. Of all the sub-groups, they emerged as the most conducive to changing behaviour.

### 3 NOTICEABILITY OF GRAPHIC HEALTH WARNINGS

Recall of messages and likelihood of reading is strongly linked to noticeability. Warning noticeability/salience has been shown in the literature to be a critical determinant of the overall effectiveness of health warnings on tobacco and cigarette packaging<sup>2,3</sup>. The noticeability of the Australian graphic health warnings is very high, although some design aspects have affected recall levels.

<sup>b</sup> Differences within and between surveys are only commented on when they are statistically significant at the 95% confidence level.

<sup>c</sup> 'Light' smokers: 5 and under cigarettes per day

<sup>d</sup> 'Moderate' smokers: 6-25 cigarettes per day

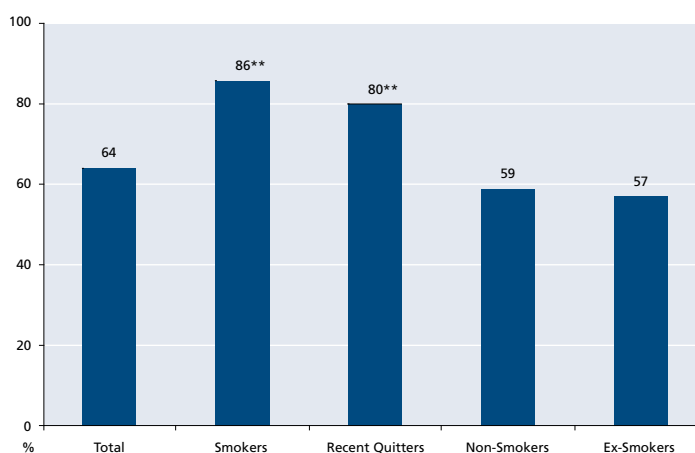
<sup>e</sup> 'Heavy' smokers: 26+ cigarettes per day

### 3.1 Recognition of Changes to the Warnings on Tobacco Packaging

In 2008, nearly two out of three (64%) people (Tel Sur 2008) were aware of changes to tobacco and cigarette packaging in the last two years. Smokers<sup>f</sup> (86%) and recent quitters<sup>g</sup> (80%) were more likely than non-smokers<sup>h</sup> (59%) and long term ex-smokers<sup>i</sup> (57%) to be aware of changes (Figure 1). Contemplators<sup>j</sup>, 6 month and 1 month, were more aware of changes than were non-contemplators, 90%, 88%, to 83% respectively.

**Figure 1: Unaided Awareness of Changes to Health Warnings**

Q4. Have you noticed any changes to the warnings on tobacco/cigarette packs in the last 2 years.



Base: All respondents (N=1304)

Note: \*\* Signifies significant difference (between segments) at the 95% confidence level.

Mention of the inclusion of graphic pictures was the most frequently recalled change, with 9 out of 10 smokers mentioning this (see Section 5.2). The telephone survey findings relating to the pack changes were confirmed by the comments made by group discussion participants, where the introduction of graphic health warnings was the most frequently unprompted change mentioned. Other changes recalled included: the introduction of more warnings; removal of information relating to tar and nicotine content; wording changes linked to 'light' and 'mild'; and a perception that brand colours were more dominant on some cigarette packs (see Section 5.2).

**Conclusion:** Most people, particularly smokers and those contemplating quitting, have recognised that graphic images have been added to health warnings on cigarette packs in the last two years.

f 'Smokers': currently smoke

g 'Recent quitters': gave up in the last 12 months

h 'Non-smokers': never smoked

i 'Ex-smokers': gave up more than 12 months ago

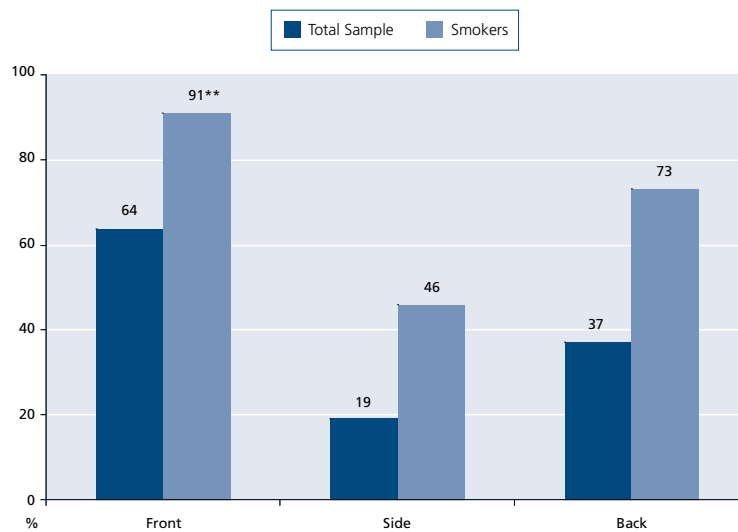
j 'Contemplators' based on the five stages of change model of Transtheoretical Model of Change and combined the stages 'contemplation' (intending to change but not in the near future) and 'preparation' (intending to change in the near future and may already be making some preparatory changes). See Prochaska, J.O & DiClemente, C.C. (1998) "Stages and processes of self change in smoking: Towards an integrative model of change". *Journal of Consulting and Clinical Psychology*, 51, 390-395.

### 3.2 Unaided Awareness of Health Information

Just under two thirds (64%) of the total sample (Tel Sur 2008) were aware of health messages or health information on the front of tobacco/cigarette packs, 37% aware of information on the back of packs, and 19% aware of information on the side of packs. Smokers showed the highest unaided awareness of health information on the pack (Figure 2) (see Section 5.2).

**Figure 2: Unaided Awareness of Health Warnings**

*Q5/4. Are you aware of any health messages or health information on the front, side, or back of a tobacco/cigarette packs in the last 2 years?*



Base: All respondents (N=1304) and Smokers (N=670)

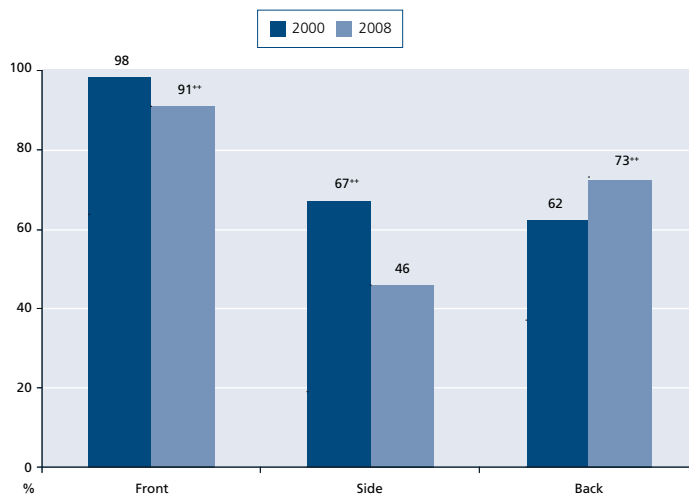
Among smokers, awareness of health messages or health information remained high for the front of pack at 91%, although a decrease on that recorded in 2000 (98%). (Figure 3)

Smokers' awareness of information on the side of pack also decreased (67% in 2000 to 46% in 2008). The side of pack has an information message replacing the previously required listing of tar, nicotine and carbon monoxide levels.

However, there has been a significant increase in awareness of information on the back of cigarette packs, from 62% in 2000 to 73% in 2008. This part of the pack has explanatory content as well as picture and health warning text. This pattern was similar across all smoker/non-smoker segments (see Section 5.2).

**Figure 3: Unaided Awareness of Health Warnings (Smokers)**

Q5. Are you aware of any health messages or health information on the front, side, or back of a tobacco/cigarette packs in the last 2 years?



Base: Smokers (N=822 in 2000, N=670 in 2008)

Note: \*\* Signifies significant difference (between years) at the 95% confidence level.

Group discussion participants frequently commented that the front of pack graphic health warning, because of its position (often on the flip top lid) and text size, was “too small” and “too difficult to read”. The position and size of the front of pack image/message was contrasted with that on the back of pack. In this regard, it is worth noting that developmental research in New Zealand has demonstrated that the exact positioning of the warning on the front of the pack affects its impact<sup>4</sup>, and contends that the positioning of the warning and image below the lid is more effective.

As reported in the Literature Review<sup>k</sup>, “many studies have examined how different design aspects of health warnings may affect their noticeability, including features such as: the size of the warning; use of colour; the position of the warning on the pack; the selection and layout of text... Most of these point to the greater effectiveness of larger, uncluttered health warnings that include pictorial representations of potential health consequences of smoking, feature contrasting colours, displayed in a prominent position on the pack, and rotated periodically.”(p.29)<sup>5</sup>.

**Conclusion:** Despite a decrease between 2000 and 2008 in unaided awareness of health information on the front and side of cigarette packs, unaided awareness is still very high among smokers, with 91% recalling health messages on the front of pack. The decline in unaided awareness of side of pack information is offset by a significant increase in unaided recall of back of pack health information. Design elements appear to have played a role in consumer noticeability and recall of the graphic health warnings in the 2008 evaluation.

k 2008 Literature Review was a research component in the 2008 Evaluation project and reported separately.

### 3.3 Unaided Recall of Health Warnings

In 2008, the most commonly recalled (unaided) health warnings from the front of pack tended to also receive good recall from the back of pack. In general, the high recall for these warnings tended to be reflected across the main smoker/non-smoker categories. For example, there was high **front of pack** recall for:

- “Smoking causes lung cancer” (total sample recall 34%; recall among smokers 38%; recall among recent quitters 42%);
- “Smoking harms unborn babies” (total 29%; smokers 43%; recent quitters 48%);
- “Smoking causes mouth and throat cancer” (total 18%; smokers 21%; recent quitters 19%); and
- “Smoking causes peripheral vascular disease” (total 17%; smoker 34%; recent quitters 26%).

Among non-smokers and long term ex-smokers recall (unaided) from the front of pack was highest for “Smoking causes lung cancer” (30% and 40% respectively), “Smoking harms unborn babies” (25% and 23% respectively) and “Smoking a leading cause of death” (18% and 20% respectively).

The most frequently recalled (unaided) warnings from the **back of pack** for the total sample, smokers, and recent quitters were:

- “Smoking causes lung cancer” (13%, 13%, 18% respectively);
- “Smoking harms unborn babies” (11%, 15%, 12% respectively);
- “Smoking cause peripheral vascular disease” (8%, 15%, 6% respectively);
- “Smoking causes mouth and throat cancer” (7%, 7%, 9% respectively);
- “Smoking – a leading cause of death” (5%, 9%, 10% respectively); and
- the Quitline phone number (8%, 14%, 10% respectively).

For non-smokers and long term ex-smokers “Smoking causes lung cancer” was the only warning on the back of pack recalled of any note (14% and 10% respectively) (see Section 5.2).

Recall of **side of pack** health information was generally much lower than that for the front or back of pack warnings. There was a high ‘don’t know’ (26%) and ‘can’t recall’ (24%) response for the total sample. Among smokers and recent quitters the most commonly recalled information from the side of pack was:

- “Smoking exposes you to more than 40 harmful chemicals” (29% and 14% respectively);
- “Average levels of tar, nicotine and carbon monoxide yields” (23% and 27% respectively). This is previous side of pack text not currently displayed; and
- “These chemicals damage blood vessels, body cells and the immune system” (16% and 3% respectively).

**Conclusion:** Those specific health messages that received the highest unaided recall for the front of pack tended to also have highest unaided recall for back of pack. Messages relating to “lung cancer”, “harm to unborn babies”, “peripheral vascular disease” and “mouth and throat cancer” received the highest unaided recall.

Recall of side of pack messages was poor. Recall has declined since 2000, with now one in two people either saying, “don’t know” or “can’t recall”. There was some recall of reference to ‘harmful chemicals’ and ‘chemical damage’ with just as much incorrect reference to content relating to levels of tar, nicotine and carbon monoxide.

### 3.4 Aided Recall of the Graphic Health Warnings

Not surprisingly, aided recall of the health warnings was generally higher for smokers than it was for recent quitters. Among smokers all of the health warnings were recalled by more than six in ten smokers, and the following eight out of fourteen warnings were recalled by more than 80% of smokers:

- “Smoking causes lung cancer” (94%);
- “Smoking harms unborn babies” (90%);
- “Smoking is addictive” (89%);
- “Smoking causes heart disease” (89%);
- “Smoking clogs your arteries” (83%);
- “Smoking causes peripheral vascular disease” (83%);
- “Smoking causes mouth and throat cancer” (82%); and
- “Smoking causes emphysema” (81%) (see Section 5.2).

**Conclusion:** Aided awareness of specific health warnings is extremely high among smokers and recent quitters, with the vast majority recalling most of the health warnings.

### 3.5 Recall of Graphic Health Warnings on Cigar Packs

There are five graphic health warnings for cigar packs. Aided recall of cigar pack health warnings was lower than that for cigarette packs (there was no unaided recall of cigar pack health warnings). Aided recall of the warning “Cigars are not a safe alternative to cigarettes” was 30%, significantly lower than aided recall for the other four cigar pack warnings (ranging from 47-66%). Interestingly, “Cigars are not a safe alternative” is specific to cigars only, whereas the other four warnings are similar to those for cigarettes.

This overall lower recall could be due to the fact that most cigars are purchased singularly (71%) and single cigars are not required to have health warnings. This has important ramifications as some smokers in the group discussions wondered if a transitional period of cigar smoking would be one way of making it easier to quit (see Section 5.2 and 5.9).

**Conclusion:** The lower recall of cigar health warnings is possibly linked to the absence of health warning information on cigars sold singularly. This is an important finding given that some smokers in the study felt that cigars may be less harmful than cigarettes because they tend not to be inhaled. Consequently some thought they could be a stepping stone to quitting.

### 3.6 Read Health Information

In 2008, readership of the front of pack health warning was greater than that for the side or back of pack information. For the information on the front and side of pack there has been a significant decrease in readership since 2000, but an increase in readership of the back of pack health information.

In 2008, among smokers and recent quitters:

- 80% (93% in 2000) of smokers and 82% (92% in 2000) of recent quitters had read the **front** of pack information;
- 41% (58% in 2000) of smokers and 33% (47% in 2000) of recent quitters had read the **side** of pack; and
- 66% (57% in 2000) of smokers and 62% (45% in 2000) of recent quitters had read the **back** of pack information (see Section 5.2).

Comments made by study participants (Grps 2008) indicate that design features may have influenced the decline in readership of the front and side of pack information and the increase in readership of the back of pack health information. These include the size and position of the front of pack information, the absence of ingredient data on the side of pack, and the inclusion of pictures per se which obviate the need to read (see Section 5.2 and 5.5).

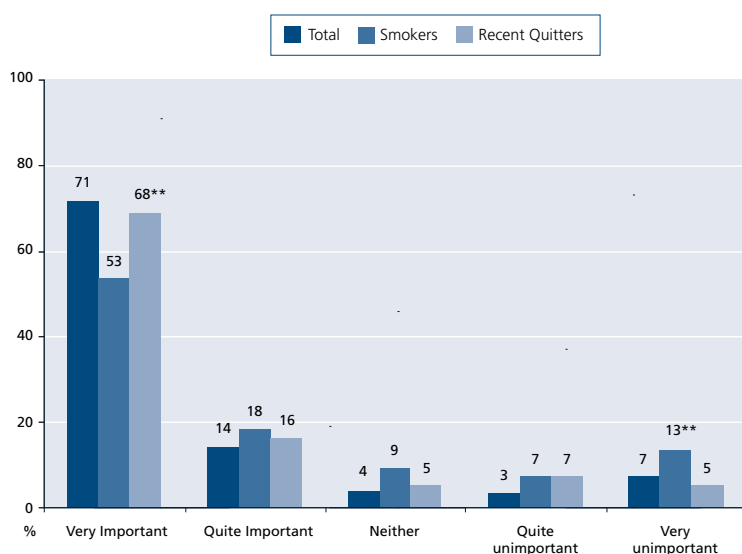
**Conclusion:** In 2008, as in 2000, readership of the front of pack health information was greater than that for the side or back of pack. However, there has been a decrease in 2008 in readership of the front and side of pack but an increase in readership of back of pack health information. Design features and the inclusion of pictures seem to have influenced readership levels generally.

## 4 THE IMPORTANCE OF THE HEALTH WARNINGS

The vast majority (85%) of the total sample (Tel Sur 2008) considered it 'very' or 'quite important' that the Government has health warnings on packs of tobacco and cigarettes. A high proportion of people (71%) considered it 'very important', and this high proportion was reflected across all sub-samples (Figure 4) (see Section 5.3).

**Figure 4: Perceived Importance of Health Warnings**

Q14. How important is it that the Government has health warnings on packs of tobacco and cigarettes?



Base: Total Sample (1304), Smokers (N=670), and Recent Quitters (N=120)

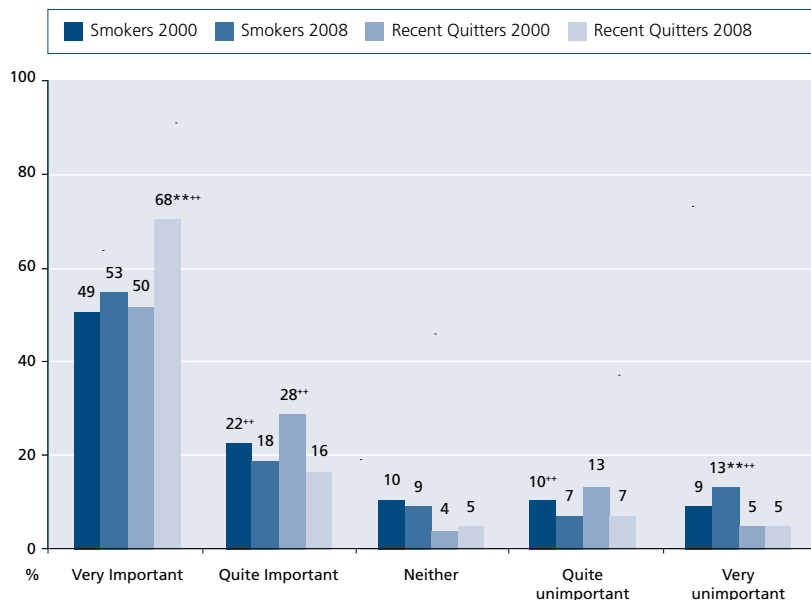
Note: \*\* Signifies significant difference (between segments) at the 95% confidence level.

Compared to the 2000 telephone survey results on 'importance', the 2008 results showed a significant increase in the proportion of smokers and recent quitters who nominated the response 'very important', with now 53% of smokers and 68% of recent quitters saying the health warnings are 'very important' (Figure 5). Those smokers contemplating quitting were significantly more likely to consider the health warnings 'important' (i.e. either 'very' or 'quite' important) than were non-contemplators. Similarly, 'light' smokers were significantly more likely than 'moderate' or 'heavy' smokers to consider the health warnings 'important' (see Section 5.3).



**Figure 5: Perceived Importance of Health Warnings (Smokers/Recent Quitters)**

Q14/8. How important is it that the Government has health warnings on packs of tobacco and cigarettes?



Base: Smokers 2000 (N=822), Smokers 2008 (N=670), Recent Quitters 2000 (N=130), Recent Quitters 2008 (N=120)

Note: \*\* Signifies significant difference (between years) at the 95% confidence level.  
 \*\*\* Signifies significant difference (between segments) at the 95% confidence level.

**Conclusion:** The 2008 study, with 85% of the total sample saying they are ‘important’ (either ‘very’ or ‘quite important’), shows strong public support for the health warnings on packs of tobacco and cigarettes, reflecting findings from studies conducted overseas.<sup>6,7,8</sup> The increase in the proportion of smokers who considered the inclusion of health warnings on packs of tobacco and cigarettes to be ‘very important’ further demonstrates the influence and significance of the graphic health warnings.

## 5 BELIEVABILITY OF THE GRAPHIC HEALTH WARNINGS

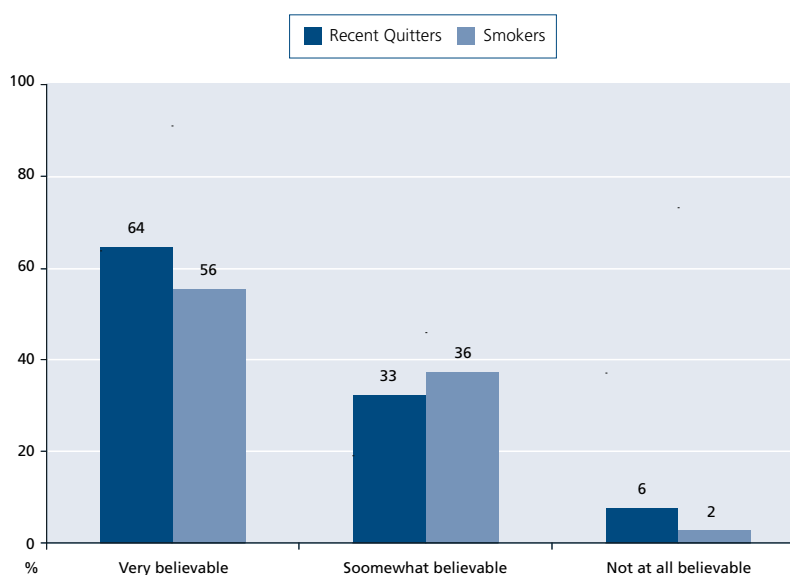
In 2008, a total of 92% of smokers and 97% of recent quitters said they found the health warnings 'believable', with a majority saying they were 'very believable' (smokers, 56%, recent quitters, 64%) (Figure 6). Again, contemplators, 6 month and 1 month, were significantly more likely than non-contemplators to say 'very believable' (63%, 62% and 48% respectively) (see Section 5.4).

Overall, group discussion participants accepted that the health conditions depicted on the warnings could result from smoking, reflecting general acceptance of the notion that smoking is very dangerous to health. However, the perceived risks of personally contracting these diseases varied considerably.

According to many in the group discussions, the most credible warnings were those linked to well-known smoking related health issues. Interestingly, warnings about diseases or conditions that had also been covered in anti-smoking television commercials were generally looked upon as more credible and more involving for consumers (see Section 5.4).

**Figure 6: Health Warning Believability (2008)**

Q11c. Overall, do you find the health warnings very believable, somewhat believable or not at all believable?



Base: Smokers (N=670) and Recent Quitters (N=120)

**Conclusion:** Recent studies<sup>5,9</sup> continue to demonstrate the significance of health warning credibility in increasing knowledge and awareness of the effects of smoking. The widespread acceptance of the credibility of the current Australian graphic health warnings is an important finding in this regard, and in particular, the strong measure of belief in the health warnings held by contemplators.

## 6 RESPONSE TO KEY ELEMENTS OF THE GRAPHIC HEALTH WARNINGS

### 6.1 Understanding of the Key Elements

Consumer understanding (not necessarily acceptance) of the three main elements (graphic image, text warning, and explanatory text) was very good. Barriers to understanding centred on: in some cases, difficulty in deciphering the graphic image due to picture quality or size of the image; ignorance of some language used in the text (e.g., ‘peripheral’); or use of technical terms (e.g. ‘nitrosamines’) unfamiliar to most people (see Section 5.5).

Stakeholders also believed that consumer understanding of the health messages and warnings has been enhanced by the use of graphic images. The graphic images were considered by them to be the main element for communicating the health warning message (see Section 6).

### 6.2 Importance of the Graphic Image

The overall reaction of respondents in the current study (Eval 2008) indicates that the use of the graphic images on cigarette packs in Australia has facilitated community recall of the health warnings. The findings of the research (Eval 2008) support much of the literature on graphic health warnings (Lit Rev 2008)<sup>5</sup>. The literature (Lit Rev 2008) shows that the use of graphics in itself increases the noticeability of health warnings, making it difficult for smokers to ‘screen out’ or avoid the image and accompanying message<sup>10</sup> with the larger graphic health warnings likely to have the greatest impact.<sup>9,11</sup>

Group participants were adamant that “the picture tells the story” and the significance and dominance of the pictures was reflected in the findings from both the discussions and the telephone survey. Throughout the group discussions (Grps 2008) the graphic health warnings were invariably considered to have greater impact than the previous text-only health warnings. The images were often described as “*dramatic*”, “*confronting*”, “*ugly*” and “*unavoidable*”. They were often the first pack element recalled and the focus of discussion.

### 6.3 Front of Pack Elements

The front panel on the pack was invariably seen as the most important element conveying the intended health message. It was generally considered the part of the pack most likely to be seen and most frequently seen. Unaided awareness of health information remained high at 91%, although a decrease on that recorded in 2000 (98%). The position and size of the warning on the front of pack was often described as “too small” and contrasted with the image on the back of pack (see Section 5.2).

When recalling health messages from the front or back of cigarette packs, respondents (Tel Sur 2008) were given the opportunity to indicate whether they were recalling the picture only, the text, or both the picture and the text. The importance of the inclusion of pictures is shown in these findings (see Section 5.5); for example, for the **front of pack**:

- of those smokers and recent quitters who claimed to have read them, the largest proportion mentioned the 'picture and the text' (combined) when describing their recall of the warning for 13 of the 14 warnings (for smokers, the exception was "Smoking – a leading cause of death" with 54% saying 'text only' and among recent quitters, "Quitting will improve your health" was the exception, where 51% of recent quitters mentioned the 'text only'); and
- among smokers, the highest proportion who mentioned 'picture only' or 'picture and text' was for: "Smoking causes peripheral vascular disease" (95%), "Smoking causes mouth and throat cancer" (92%), and "Smoking causes blindness" (94%) (see Section 5.5).

## 6.4 Back of Pack Elements

Again, the importance of the graphic image either on its own or in combination with the text warning was further demonstrated in total sample recall of the **back of pack** warnings. Here, the 'picture and text' (combined) received most mentions for all warnings except: "Smoking causes blindness", where 64% of all those who mentioned this health warning nominated 'picture only'; and, "Smoking – a leading cause of death", where 'text only' received 45% of mentions (see Section 5.5).

Comments made by those in the group discussions reinforced the telephone survey results, with the picture on the back of packs considered to be contributing to a dominant graphic health image. The increased size of the picture (compared to the picture on the front of pack) was said to generate high impact and noticeability. In addition, the text warnings on the back of packs were said to be more noticeable because of white type on red background. Red conveyed "danger", and readability and noticeability were said to increase as a result. As noted in the Literature Review<sup>5</sup>:

*"Research into safety warnings more generally indicates that red may be the most powerful colour in terms of communicating risk. In experiments comparing response to signal words printed in a range of colours, red has been consistently found to convey the highest level of hazard (Chapanis, 1994; Braun & Silver, 1995), with one study indicating that red signal words were also associated with greatest behavioural compliance (Braun & Silver, 1995).*

*In research to inform the development of New Zealand health warnings it was observed that the use of white-coloured font on a red background not only stood out, but also conveyed a sense of "danger" to study participants (BRC Marketing & Social Research, 2004)".*

Overall, there was some mixed response (Grps 2008) to the explanatory text on the back of packs. Some people were critical of what they considered was "too much text", "too cluttered", and some were clearly threatened or confronted by the text. However, others were complementary about many of the explanatory texts maintaining they add credibility and facilitate understanding of the potential health consequences because of their, in general, simple, easy to read content (see Section 5.5).

## 6.5 Side of Pack Elements

The health information on the side of pack was not as well known as that depicted on the front or back of cigarette packs. Even though the removal of information on tar and nicotine was noticed smokers expressed very little motivation to look at the side of pack. The side of pack information seemed to be regarded separate to the front and back panels, which were linked through the use of the same graphic image and text warning (see Section 5.5).

## 6.6 Tonal Qualities

The graphic images influenced the perceived tone of the health information. The tonal qualities were considered by consumers and stakeholders to be appropriately serious, confronting, and informational. The more confronting graphic images (e.g. 'the foot', 'the eye', and 'the mouth') tended to be largely responsible for the consumer perception of the tonal qualities for the series of health warnings. The overall negative tone of the graphic health warnings was to some extent offset by the more positive Quitline messages, phone number and some reassuring explanatory texts (see Section 5.5).

## 6.7 Awareness of Quitline/Quitnow

In 2008, 63% of those interviewed claimed to be aware of a Quitline telephone number included with the health messages on tobacco packs. Smokers (90% compared to 60% who recalled the Information line number in 2000<sup>1</sup>) were significantly more likely to be aware of the Quitline phone number on packs than were recent quitters (73% in 2008, 52% in 2000), long term ex-smokers (57% in 2008, 17% in 2000), or non-smokers (56% in 2008, 15% in 2000) (see Section 5.5).

Importantly, there was a much higher awareness in 2008 among contemplators (92% - 6 month; 91% - 1 month) than non-contemplators (87%) of the Quitline phone number being included on packs.

A total of 5% of people claimed to have called the Quitline. Among smokers and recent quitters there was an increase on the 2000 results (smokers, 4% to 15% in 2008; recent quitters, 6% to 9%). In 2008, there was much higher usage among contemplators (20% - 6 month; 17% - 1 month) compared to non-contemplators (10%).

In 2008, one in three smokers and one in ten recent quitters thought they would call the Quitline in the future. Intention to call the Quitline was higher among contemplators (43% - 6 month; 36% - 1 month) than non-contemplators and among 'light' (32%) and 'moderate' (39%) smokers compared to 'heavy' (16%) smokers (see Section 5.5).

One in four people were aware of the Quitnow website address on tobacco packs. Current smokers (45%) were significantly more likely to be aware than recent quitters (35%), long term ex-smokers (25%) or non-smokers (19%). About four in ten smokers (41%) and recent quitters (40%) claimed they would be more likely to access the Quitnow website now that the address is on packs.

Again, contemplators (49% - 6 month; 47% - 1 month) were more likely than non-contemplators (31%) to access the website, as were 'light' smokers (45%) compared to 'moderate' (36%) or 'heavy' (28%) smokers (see Section 5.5).

<sup>1</sup> In 2000 cigarette packs included an Information line phone number which was a recorded message about the harmful effects from tobacco. It was not advertised through other media.

## 6.8 Health Authority Warning

There was uncertainty among consumers about the benefits of having the authority notation. There were mixed views expressed regarding the notation, which centred on whether or not it was the Government or the manufacturers trying to alleviate blame by placing warnings and asking buyers to be responsible for purchasing a potentially harmful product (see Section 5.5). Stakeholders on the other hand tended to consider the authority notation as a factor contributing toward the credibility of the health warnings (see Section 6.1).

**Conclusion:** The significance of graphic health warnings has been noted in past research<sup>4,12</sup> which has shown that they have greater impact than larger sized text-only warnings. In 2008, the graphic images have been shown to be the most important component for the vast majority of health warnings/messages. They have dominated consumer response and recall of health information, particularly in regard to the back of pack health information.

The very nature of the graphic images (i.e. size, image, position on pack) has had an effect on recall and readership. The use of graphic images, particularly when considered with the text warning, have effectively conveyed a well balanced series of health warnings. However, the image on the front of packs was thought “too small” and was often contrasted with the larger picture on the back of packs. The back of pack image was said to be dominant because of its size, and the text warnings on the back of packs because of white type on red background were more noticeable. Despite appreciation for the language and format of side of pack information, it was regarded separate to the front and back panels which were linked through the use of the same picture and text warning.

The inclusion of the Quitline phone number and reference to the Quitnow address on tobacco and cigarette packs has resulted in an increase in intended usage of both the Quitline and website, particularly among those contemplating quitting and among ‘light’ smokers. Given the increase in the proportion of people aware of the Quitline compared to that for the previous Information line, it is hypothesised that the inclusion of a Quitline is a more motivating element than was the previous reference to an Information line.

## 7 EFFECTIVENESS OF THE GRAPHIC HEALTH WARNINGS

The effectiveness of the Australian graphic health warnings was demonstrated in a number of ways, throughout the 2008 Evaluation. The graphic health warnings communicated potential health effects; improved consumer knowledge; discouraged smoking; and have contributed to behavioural change.

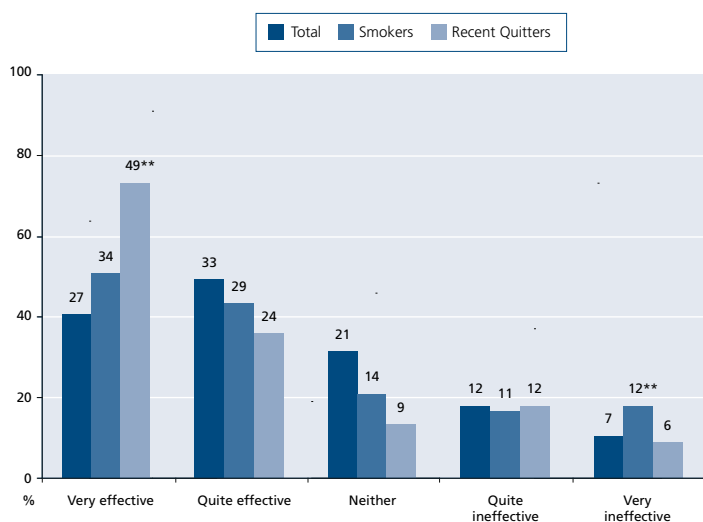
## 7.1 Effectiveness in Communicating Health Effects

The pictures on tobacco and cigarette packs were considered to be effective in communicating the health effects of smoking. Six in ten (60%) people (Tel Sur 2008) considered the pictures on the packs to be effective in communicating the health effects. As age increased, the proportion of people thinking the pictures were effective in communicating the health effects decreased. Young people generally were more likely than older people to consider the pictures on packs to be effective (see Section 5.6). Other studies have suggested that graphic health warnings may have greater success in communicating to young smokers<sup>6,13</sup>.

Among smokers, 63% considered them effective in communicating the health effects, compared to 73% of recent quitters. Nearly one in two (49%) recent quitters said they were ‘very effective’ (Figure 7).

**Figure 7: Perceived Effectiveness of Health Warnings**

Q14a. How effective are the pictures on packs at communicating the health effects of smoking?



Base: Total Sample (1304), Smokers (N=670), and Recent Quitters (N=120)

Note: \*\* Signifies significant difference (between segments) at the 95% confidence level.

The vast majority of non-smokers (84%) and long term ex-smokers (79%) claimed the graphic health warnings ‘are a good way of getting across how smoking affects health’.

Group discussion members frequently made reference to the effectiveness of the graphic images in conveying potential health effects, either in a broad and general sense or in terms of specific diseases or illnesses. The graphic images have, not only generated impact but also raised the profile of health consequences in general. The graphic images have seemingly increased or reinforced awareness of those consequences that were previously text only (e.g. ‘lung cancer’, ‘heart disease’, ‘addiction’, etc) as well as, communicated new information (e.g. ‘mouth and throat cancer’, ‘gangrene’, ‘blindness’, etc) (see Section 5.6).

**Conclusion:** There has been widespread acknowledgement that the graphic images have been effective in conveying the potential health effects of smoking tobacco, particularly among current smokers and recent quitters.

## 7.2 Improving Knowledge

The inclusion of pictures with the text health warnings have increased consumer knowledge of the range of potential health conditions of smoking and reinforced awareness of the health consequences that were previously text-only (see Section 5.6).

In 2008, 38% of smokers and 59% of recent quitters (Tel Sur 2008) indicated the inclusion of health warnings and information on cigarette packs had improved their knowledge of the health effects of tobacco consumption. This represents a significant increase on the 32% of smokers and 28% of recent quitters who responded in this way in 2000 (Eval 2000) (see Section 5.6).

**Conclusion:** The well established link between exposure to health warnings and knowledge of health consequences of smoking<sup>14,15,16</sup> has once again been confirmed in the 2008 telephone survey. There has been an increase in the number who indicated that their knowledge had improved as a result of inclusion of the graphic health warnings compared to the previous text-only warnings.

## 7.3 Discouraging Smoking and Helping Prevent Relapse

In the current study (Tel Sur 2008) the majority of non-smokers (63%) and long term ex-smokers (54%) claimed the graphic health warnings 'would help prevent people from taking up smoking'. Previous studies have also indicated that graphic health warnings are more effective than text-only warnings in discouraging the uptake of smoking.<sup>17,18</sup>

Non-smokers (22%) also indicated that the warnings had 'helped them from taking up smoking' and 35% of long term ex-smokers said they 'have helped them to stay quit' (see Section 5.6). More than half of recent quitters (55%) also agree that the graphic health warnings have helped them to stay quit (see Section 5.6).

Many group discussion participants (Grps 2008) felt that the graphic health warnings and the pictures especially, have contributed significantly to deglamourising smoking as a behaviour as well as, countering the influence of cigarette branding and imagery. Confirming the telephone survey results was the consideration by many in the group discussions that the graphic health warnings have helped discourage people from taking up smoking and helped reinforce the decision of those who have quit to stay quit (see Section 5.6).

A total of 67% of smokers and 69% of recent quitters (Tel Sur 2008) nominated a specific graphic health warning when considering a warning that they thought was the 'most effective' at discouraging people from smoking.

Those warnings chosen as the 'most effective' received similar response from both smokers and recent quitters:

- "Smoking causes throat and mouth cancer" (15%, 21% respectively);
- "Smoking causes lung cancer" (11%, 14% respectively);
- "Smoking causes peripheral vascular disease" (10% each); and
- "Smoking harms unborn babies" (10%, 9% respectively) (see Section 5.6).



**Conclusion:** The majority of people (Tel Sur 2008) considered the graphic health warnings to be effective in discouraging the uptake of smoking and helping prevent relapse. As well, they were seen as contributing toward deglamourising smoking and making it a less desirable behaviour.

#### 7.4 Effects on Quitting Intentions and Behaviour

As noted in the 2008 Literature Review<sup>5</sup>, research in other countries makes mention of positive influence of graphic health warnings in increasing the intention of smokers to quit<sup>19,20,21</sup>. Evidence from both the telephone survey and the comments made throughout the group discussions have also indicated that the graphic health warnings are having an effect on smokers' and recent quitters' behaviour and quitting intentions. For example, when they saw health warnings on packs, smokers and recent quitters said without prompt, "I should stop/quit" (28% smokers; 30% recent quitters) (see Section 5.6).

When prompted respondents (Tel Sur 2008) agreed that the graphic health warnings had:

- 'Raised your concerns about smoking' (57% smokers; 72% recent quitters);
- 'Helped you smoke less' (36% smokers; 62% recent quitters);
- 'Helped you give up smoking' (62% recent quitters);
- 'Helped you try to quit' (34% smokers; 64% recent quitters);
- 'Have made you think about quitting' (57% smokers; 75% recent quitters); and
- 'Have helped you stay quit' (55% recent quitters).

In most cases there were significant differences between the results obtained in 2008 with those from the 2000 telephone survey on the prompted statements that were used in both telephone surveys (see Section 5.6); for example:

- 'Raised your concerns about smoking' (recent quitters 72% in 2008 compared to 60% in 2000);
- 'Helped you smoke less'
  - recent quitters (62% in 2008 to 47% in 2000),
  - smokers (36% in 2008 to 31% in 2000);
- 'Had no effect on behaviour'
  - recent quitters (25% agreed compared to 83% in 2000),
  - smokers (49% agreed compared to 79% in 2000);
  - 'Helped you give up smoking', (recent quitters 62% in 2008, 49% in 2000).

The main reasons for quitting focussed very strongly on health issues and the influence of family/friends in encouraging them to quit (see Section 5.6). However, the graphic health warnings have also played an important role in encouraging smokers to quit; for example: among recent quitters the 'health warnings on cigarette packs (pictures)' were mentioned by 53% as a reason for quitting and 44% made mention of the text (Tel Sur 2008) (see Section 5.6).

As well, there were a number of behaviours adopted by smokers to avoid looking at the graphic health warnings, suggesting the warnings and pictures are disconcerting, and have an effect in making smokers feel uncomfortable about their habit. Close to one in four (24%) smokers in the last 2 years had avoided buying packs with particular warnings on them, hidden or concealed the pack in some way, or both avoided and concealed packs. Among recent quitters 27% had behaved in this way.

Of those smokers who admitted to some form of avoidance behaviour in the last 2 years, nearly 6 in 10 (58%) were still behaving in this way. Avoidance behaviours mentioned throughout the group discussions included:

- when buying cigarettes request packs with less threatening photos;
- conceal or hide pack through the use of covers or stickers;
- avoid looking at the back of the pack;
- place the pack on its side so the image is not so obvious;
- remove cigarettes without looking at the graphic images;
- use an old pack (without pictures) to store cigarettes;
- avoid having packs lying around;
- laugh off warnings and make fun of them; and
- discredit the graphic health warnings because of feeling threatened or guilty.

In regards to the future behavioural intentions of smokers, 53% (Tel Sur 2008) said they 'intend to make a definite attempt to quit', which represented a significant increase on the number of smokers (47%) who indicated this intention in the 2000 telephone survey (see Section 5.6).

**Conclusion:** The Australian graphic health warnings have had an effect on smokers and recent quitters including raising their concerns about smoking, helping them smoke less, increasing their intention to quit and actual quitting. As well, there are a number of avoidance and concealment behaviours adopted by smokers that suggest that the pictures are disconcerting and make smokers feel uncomfortable about their habit. The current study reflects the findings of other research studies<sup>22,23</sup> that have shown that health warnings have brought about changes in actual smoking behaviour.

## 8 ATTITUDE CHANGE AND THE GRAPHIC HEALTH WARNINGS

Comparison of 2008 survey response to that given in 2000 to a series of attitude statements about smoking indicates that the graphic health warnings have had a positive effect on attitudes in regard to raising concern and increasing knowledge about the effects of smoking on health. As well, the response to the statements supports earlier findings relating to intention to quit. For example, 57% of smokers and 75% of recent quitters agreed that the warnings ‘have made them think about quitting’. This was confirmed through response to an attitude statement, where 56% of smokers maintained that ‘seeing the health warnings on packs makes me think about quitting’.

Among **smokers** there has been a number of key positive attitudinal movements between 2000 and 2008 regarding the graphic health warnings. For example, in response to a series of attitudinal statements the following attitudinal shifts emerged:

- smokers are now less likely to ‘believe most people don’t take any notice of the health warnings on cigarette packs’ (65% in 2008 compared to 77% in 2000); and, most noticeably, a decrease among those who said ‘agree a lot’ (39% in 2008 vs. 56% in 2000);
- among smokers an increase in agreement, with the statement ‘seeing the health warnings on packs makes me think about quitting’ (56% in 2008 vs. 50% in 2000);
- a higher proportion of smokers in 2008 (48% vs. 42% in 2000) agreed that they worry ‘more about the effects of cigarettes on my health since the picture health warnings were put on cigarette packs’;
- smokers were more likely to agree that ‘smoking probably does increase the risk of health problems occurring’ (88% vs. 81% in 2000). Again, the greatest change was in the proportion who ‘agreed a lot’ (63% vs. 53% in 2000); and
- a greater level of disagreement among smokers with the statement, ‘I don’t think smoking has any real negative effect on your health at all’ (90% in 2008 vs. 85% in 2000) (see Section 5.7).

In an overall sense in 2008, contemplators (6 month and 1 month) were more likely than non-contemplators to hold negative attitudes towards smoking and positive attitudes towards the graphic health warnings (see Section 5.7).

**Recent quitters** also displayed a number of key attitudinal movements between 2000 and 2008; for example:

- there was a greater proportion of recent quitters (67% in 2008 versus 40% in 2000) who agreed that they worried ‘more about the effects of cigarettes on my health since the picture health warnings were put on cigarette packs’. The greatest change was in the proportion who ‘agreed a lot’ (from 25% in 2000 to 45% in 2008);
- they were less likely to ‘believe most people don’t take any notice of the health warnings on cigarette packs’ (66% in 2008 versus 82% in 2000), particularly in terms of the proportion agreeing with this statement ‘a lot’ (44% vs. 64% in 2000);
- they were more likely to agree that their ‘past smoking probably has increased the risk of health problems occurring’ (87% vs. 76% in 2000); and
- there was a greater level of disagreement with the statement ‘I don’t think smoking has any real negative effect on your health at all’ (97% in 2008 vs. 89% in 2000) (see Section 5.7).

**Non-smokers** and to a lesser extent long term ex-smokers, also showed significant movement in their response to key attitudinal statements. For example: compared to the 2000 telephone survey findings, the 2008 telephone survey indicated a significant increase in the proportion of non-smokers in agreement with the following:

- 'I think seeing the health warnings on packs would make people think about quitting', with agreement increasing from 50% in 2000 to 76% in 2008;
- 'the health warnings on cigarette packs should be stronger', with agreement increasing from 68% in 2000 to 79% in 2008;
- being 'more aware of the effects of cigarettes on my health since the picture warnings were put on cigarette packs', with agreement increasing from 48% to 58%; and
- the belief that 'most people don't take any notice of the health warnings on cigarette packs', with agreement for this statement encouragingly decreasing from 75% in 2000 to 65% in 2008 (see Section 5.7).

**Conclusion:** The use of graphic health warnings has brought about some significant positive attitude shifts when responses to the attitude statements in 2008 are compared with those given in 2000. The focus of these positive shifts is on the association of the pictures with an increase: in the knowledge of health risks with smoking, concern about effects of smoking on health, and the intention to quit.

## 9 WEAR OUT

Some smokers who took part in the group discussions felt that some of the graphic health warnings (e.g. "Smoking clogs your arteries", "Smoking causes heart disease", "Tobacco smoke is toxic") and specifically the graphic images, have become so familiar that their potency in conveying a health message has decreased (see Section 5.10).

**Conclusion:** There is evidence of wear out and some smokers have suggested a need to update some of the health warnings with new graphic images to strengthen their effectiveness and possibly changing warning design aspects to revitalise the strategy.

## 10 PLAIN PACKAGING

Some smokers in the group discussions contended that the graphic health warnings are competing for consumer attention with manufacturer's messages through the use of typeface, colour, and brand imagery in general. This led them to consider that the introduction of plain packaging could help consumer recall of health warnings particularly on the front of packs.

Consideration of plain packaging was further seen in the response given by consumers to the attitude statement, 'I think that cigarettes should be sold in plain (generic packs, specifying only brand name and Government information such as health warnings and information to assist smokers to quit', with 57% of respondents agreeing with the statement (see Section 5.11).

**Conclusion:** In the 2008 Evaluation there was consideration by smokers of the introduction of plain packaging for tobacco products in an attempt to strengthen the impact of the health warnings. Other research<sup>3,24,25,26</sup> has indicated how tobacco packaging can be used to target specific consumer groups, communicate misleading information and weaken the impact of the health warning message.

## 11 STAKEHOLDER RESPONSE TO THE GRAPHIC HEALTH WARNINGS

Key findings regarding the views of stakeholders (see Section 6) who were interviewed include the following:

- stakeholders see graphic health warnings as impactful, relevant, and effective, in conveying the health consequences of smoking. They also regard them as an improvement on text-only warnings, but in need of updating and refreshing;
- stakeholders considered the tone of the warnings to be appropriately negative, with the inclusion of some positive message content generally seen as an important addition, although there was some mixed response to the possible inclusion of more warnings in a positive tone;
- stakeholders believe that consumer understanding of the health messages and warnings is enhanced by the use of graphic images;
- the graphic health warnings were considered believable and their credibility reinforced by promotion of the health messages through other media (most notably television);
- the existing range of graphic health warnings was regarded as a well balanced, effective combination of a wide variety of health messages. They were felt to reinforce and extend existing consumer knowledge and, in some cases provide new information;
- the graphic health warnings were said to have most relevance for older and "lighter" smokers and for the non-Indigenous community. However, many considered the warnings will help deter the uptake of smoking among the young;
- stakeholders have positive perceptions of the various components of graphic health warnings but a desire to improve and revise some of the pack elements;
- further refinements and revisions to the pack elements were suggested to heighten the impact and sustain interest in the graphic health warnings;

- the need to develop a more efficient process to update and introduce new or revised health warnings was regarded as an important consideration;
- many stakeholders expressed the need to ensure that the warnings are easy to be seen on all tobacco product packaging, particularly tobacco for use in water pipes and on cigars sold singularly;
- on the condition that the warnings were more regularly updated and refreshed, there is strong support for the system of rotation as a means of maintaining the salience of the graphic health warnings;
- a strong belief that improved effectiveness and strengthening of the graphic health warnings occurs through the use of additional media support;
- the need to develop and maintain an integrated strategy to enhance the effectiveness of the graphic health warnings; and
- plain packaging is seen as the next major step by many stakeholders.

**Conclusion:** Stakeholders have shown a very favourable response to the inclusion of graphic health warnings on tobacco packs. In general they have considered them to represent a balanced, effective combination of a variety of health messages conveying a range of health issues. They emphasised the need to develop an integrated strategy to enhance their effectiveness and the implementation of a more efficient process to update and introduce new health warnings.

## 12 KEY OUTCOMES AS A RESULT OF THE USE OF GRAPHIC HEALTH WARNINGS

### 12.1 Achieved Their Purpose

The 2008 evaluation study of the effectiveness of the graphic health warnings on tobacco product packaging has shown, on a number of indicators, that the introduction of the graphic health warnings has achieved the intended purpose of:

- increasing consumer knowledge of the health effects of smoking;
- encouraging the cessation of smoking; and
- discouraging smoking uptake or relapse.

## 12.2 Behavioural and Attitudinal Impact

In addition, the graphic health warnings on tobacco product packaging have also resulted in the following:

- heightened consumer concern about smoking and contributed to deglamourising smoking, making it a less desirable behaviour;
- generated controversy and facilitated community discussion about smoking and its health effects, as well as the effects of passive smoking;
- had a positive effect on the behaviour of smokers, recent quitters, and non-smokers; for example: encouraged people to smoke less, to think about quitting, to give up smoking and stay quit. As well, the graphic health warnings have discouraged people from taking up smoking; and
- importantly, the graphic health warnings have resulted in positive attitudinal shifts among smokers and recent quitters. The attitudinal shifts have focussed on: heightening the belief that smoking increases the risk of health problems occurring, generating an increase in concern about the health effects of cigarettes, and predisposed smokers to consider quitting.

## 12.3 Graphic Images Have Had an Impact

The graphic images (and particularly in combination with the text warning) have emerged as a dominant element. Unaided recall of the health information either as a 'picture only' or 'in combination' with the text health warning has been instrumental in the potential effectiveness of specific health messages for the front and back of pack health warnings. For 13 out of the 14 warnings, some reference to the picture was made by the majority of smokers and recent quitters (Tel Sur 2008) in their recall.

## 12.4 A Balanced Approach

The series of images and health messages appears to have presented a balanced approach through the range and variety of health consequences depicted. Some images were frequently recalled or commented on throughout the study. Warnings portraying graphic, "shocking images" were often the warnings that received high recall and most comment; for example:

- "Smoking causes mouth and throat cancer";
- "Smoking causes peripheral vascular disease"; and
- "Smoking causes blindness".

Other than the high impact, "shocking" pictures, there were other health warnings that also elicited a strong response from those who took part in the study and these did not necessarily have "shocking" imagery. They were meaningful because they touched an emotion or were acknowledged as having a close association with smoking; for example:

- “Smoking harms unborn babies”;
- “Don’t let children breath in your smoke”;
- “Smoking causes lung cancer”;
- “Smoking doubles your risk of stroke”;
- “Smoking causes heart disease”;
- “Smoking is addictive”; and
- “Smoking – a leading cause of death”.

### 12.5 High Noticeability and Readership Despite Some Decline

The graphic health warnings have achieved a high level of noticeability among smokers in particular with, for example, 9 in 10 aware of health information on the front of packs. However, there has been a decline in recall and readership of the front and side of pack warnings, in contrast to the increase in recall of warnings and information on the back of packs:

- the decline in recall of the front of pack appears to be due to positioning of the picture and the warning as well as its size (compared to that on the back of pack); and
- the decline in recall of side of pack information appears to be the result of removal of information relating to strength of ingredients. Smokers now see no need to read the side of pack. Unlike the front and back of pack, the side of pack is not linked to the other panels through the inclusion of similar graphic imagery or the repeat of the health warning.

### 12.6 The Warnings are Believable and Important

Throughout the current 2008 evaluation research there was widespread acceptance of the health warnings indicated by: the strong support for their inclusion on tobacco packs and the high level of believability, with 92% of smokers and 97% of recent quitters saying they are ‘believable’.

### 12.7 Areas for Improvement

The graphic health warnings on tobacco and cigarette packaging have emerged as an important and effective component in the overall National Tobacco Strategy aimed at reducing smoking prevalence in Australia. However, areas for improvement were raised by consumers and stakeholders, for example: changes to design and content elements, as well as periodic review and revision of the health messages. This increases the variety of warnings and boosts the warning salience and relevance for different consumer groups. Many of these suggestions were raised in other research studies<sup>23,27,29</sup> covered in the 2008 Literature Review<sup>5</sup>.



In regard to design elements to improve noticeability, recognition and understanding the suggestion was made by consumers and/or stakeholders:

- to use only clear, well-defined graphic images. A view supported by other research<sup>30-32</sup>;
- to increase the size of the warning and the picture (particularly on the front panel) to improve noticeability, promote visibility and enable the warning to compete with other pack elements. Other research has also found that an increase in size is important<sup>3,4,33,34</sup>;
- to improve readability and understanding through careful choice of typeface and print style;
- to aid understanding and meaningfulness of the messages by using uncluttered text in simple, non-technical language;
- some stakeholders suggested considering the use of statistics in the explanatory text of some warnings to enhance the sense of urgency of the warnings;
- poor readership of side of pack information led some consumers and stakeholders to suggest simplifying the text by for example, including: tips to quit, a large Quitline phone number, and information about ingredients (in lay terms); and
- consumers maintained that package design and colour can be an enticement to purchase a brand. Design elements were thought to often be in conflict and competition with the health message for consumer attention. To this end, plain packaging (i.e. restricting or prohibiting the use of logos, colours, brand imagery or text other than brand names printed in a standard colour and font size) was suggested by both consumers and particularly stakeholders as one way of strengthening the impact of health messages. The suggestion made by many of those who took part in the 2008 Evaluation that the potential effect of plain packaging is in strengthening the impact of the health warnings has also emerged in other research<sup>19,20,21</sup>.

In regard to the graphic images, both consumers and stakeholders suggested keeping some of the key messages but updating and refreshing the existing images (e.g. Heart Disease, Stroke, Toxic, Addictive, Lung Cancer, Children, Emphysema, Clogged Arteries, Quitting).

Consumers and stakeholders suggested introducing new diseases with established links to smoking (e.g. Impotence, Kidney Disease, Bladder Disease, Bowel Cancer, Pancreatic Cancer, Infertility, Hearing Loss, Osteoporosis). Consumers reacted with interest to the possible inclusion of other diseases resulting from smoking and stakeholders felt that new warnings need to reflect new research findings on the health effects of smoking as well as encouraging quitting.

Allied to this was the suggestion to add more credibility to warnings with mention that 'images are from people who smoked'. Some also felt that the social consequences of smoking (e.g. time lost from family) could be explored. Several other studies have raised this issue together with the suggestion of social threat and social disapproval<sup>28,30</sup>.

Other proposed improvements from consumers or stakeholders included:

- the suggestion to integrate pack imagery for use in other media (e.g. TV). This it was thought would reinforce the warning and heighten impact in general;
- a suggestion by stakeholders to extend graphic health warnings to other tobacco products, particularly tobacco for water pipes and cigars sold individually; and
- stakeholders also suggested developing a more efficient mechanism for introducing new warnings, and more consumer research on the impact of the graphic health warnings.

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