Effectiveness of Pictorial Health Warnings on Cigarette Packages

Background

On December 19, 2012, the European Commission presented a proposal for a "Directive of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products"[9]. Article 9 of this proposal stipulates "Combined health warnings for tobacco for smoking". The health warnings, which are comprised of a text warning and a corresponding color photograph specified in a picture library, are required to cover 75 percent of the external areas of both the front and back surfaces of unit packets and any outside packaging.

This proposal is based on recent scientific findings showing that larger, pictorial health warnings are more effective than currently used text-only warnings. The proposal implements Article 11 of the WHO Framework Convention on Tobacco Control (FCTC)[7,29] on "Packaging and labelling of tobacco products" and the corresponding Guidelines for implementation[30]. According to Article 11, health warnings should cover 50 percent or more of the packaging's principal display areas. At least 63 countries worldwide have introduced combined health warnings since 2001[4] and numerous studies have been conducted to evaluate the effectiveness of such warnings. In the following, we will provide a brief overview of recent scientific evidence on the effectiveness of combined health warnings.

Pictorial Health Warnings Are Effective

Health warnings on tobacco packaging capture attention, educate effectively about the health hazards of smoking and make smoking unattractive.

Smokers
- **notice health warnings on tobacco packages,**
- **perceive their message and**
- **are encouraged to think about and change their smoking behavior, particularly by pictures that elicit emotions**[6,8,10,12,15,19,24].

In a review that included a total of 94 studies, combined warnings were found to have greater impact than text-only messages in almost all studies; only three studies did not find picture-based warnings to be more effective than text-only warnings[12]. This is also the result of the International Tobacco Control Policy Evaluation Project (ITC) report, a cross-country comparison report across 19 countries including seven European countries[16]. The report finds that health warnings are more effective in countries where pictorial warnings are displayed on tobacco packaging than in those where only text messages are mandatory. In Germany and the Netherlands, for example, text-only health warnings have the lowest impact regarding perception, motivation of smokers to think about their smoking behavior and their motivation to quit. The highest effectiveness was found in countries such as Thailand, Brazil and Mauritius, which have introduced large combined health warnings[16].
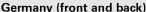- **The effectiveness of health warnings depends upon their size, positioning and design**[3,12,21].

Health warnings are particularly well noticed and can influence smoking behavior if they are printed on the front in the upper area and in a large size[2,3,19,28]: If they cover 75, 90 or 100 percent of the package, they have significantly greater impact on smokers and non-smokers than those covering only 50 percent of the package[12].

Health Warnings – The Bigger the Better

Currently, only text-based health warnings are mandatory in EU countries. These must cover at least 30 percent of the external surface of the front of a package in countries with one official language. An additional warning label on the back must cover at least 40 percent of the surface. The percentages are higher for countries with more than one official language.

Germany (front and back)   **United Kingdom (front and back)**   **Planned EU warning label**

Germany currently only has text messages that have limited visibility and are sometimes well blended into the brand design (picture on the left).

The UK introduced pictorial warnings in 2008, with text warnings covering 43 percent of the front and picture warnings covering 53 percent of the back (picture in the center). Although front text labels are larger than in Germany, they are not much more visible. The large pictorial warning on the back is considerably more noticeable, but due to its location on the back of the packet it captures much less attention of consumers than if it were placed on the front.

The planned combined health warning for the European Union is the same for front and back of the package; it will cover 75 percent of both sides and be placed in the upper area of the packaging (picture on the right). This pictorial health warning is much more eye-catching than text-only messages. Brand information becomes less noticeable. The warning label's position in the upper area of the package further increases its effect.

■ **Noticeable health warnings comprising text and pictures are better perceived and read more often by smokers than warnings that are purely text-based.**

This is shown, for example, in a study from Australia, where graphic health warnings were introduced in March 2006[3]. Accordingly, combined warnings are better at communicating the health risks of smoking than text messages[11,26,31]. Pictures that elicit strong emotions particularly capture consumers' attention[12].

Effectiveness in Health Education
■ **Health warnings convey information.**

Combined health warnings increase smokers' knowledge about the health hazards of smoking[13,14,21,23]. Graphic warnings are better suited than text-only warnings to capture attention, and the communicated information is memorized for a longer time[12,24]. They are a direct and cost-effective means of communication, because they reach every smoker and have a continuous impact as smokers are confronted with a warning message every time they have a packet in their hands[21]. Therefore, health warnings on cigarette packages are an important health education measure.

■ **Warning labels reach everybody – including underprivileged population groups.**

Pictorial warnings are comprehensible even for individuals who rarely or never read anything, because a message in graphic form is more rapidly captured and easier to understand than a text message.

Even those population groups whom health education normally fails to reach will notice pictorial warning messages. Recent studies from the USA show that such warning labels may therefore contribute to reducing health-related social inequality[5,25].

Impact of Pictorial Warning Labels on Youth: Preventing Initiation
■ **Picture health warnings deter youth from starting to smoke and motivate adolescent smokers to quit.**

Over 90 percent of youth in Canada and the United Kingdom state that pictorial warnings convey important information about smoking and make smoking less attractive for them[12,28]. Almost one third of survey participants aged 11-16 years in the United Kingdom indicated that picture warnings had stopped them from having a cigarette at least once in the last month prior to the survey[19]. Adolescents who already smoke or are experimenting with smoking do smoke fewer cigarettes or tend to think about quitting due to health warnings[12].

Impact of Pictorial Warnings on Adults: Promoting and Maintaining Cessation
■ **Combined warning labels motivate smokers to quit.**

A study with participants in Germany has shown that graphic health warnings on cigarette packets lead to a significantly greater motivation to stop smoking than text-only warnings[22].

Smokers from other countries report that warnings have caused them to reduce tobacco use and have increased their readiness to quit and the chances of staying smoke-free after quitting[1,6,10,12]. In Canada, over 40 percent of smokers have been motivated by health warnings to quit smoking; in Australia, picture warnings have supported 62 percent of former smokers in their efforts to quit[13].

■ **Combined health warnings that include a quitline telephone number can increase the number of calls[3,17].**

In Australia, the number of calls to the quitline doubled in the year that pictorial warnings were introduced. The effect was greater than the one achieved by TV advertising campaigns[18].

■ **Combined warning labels help former smokers to stay smoke-free.**

A study with former smokers from Australia, Canada, the UK and the USA has shown that health warnings can reduce the odds of a smoking relapse, because they may remind former smokers of the reasons they had for quitting[20].

Public Support of Picture Warnings
■ **Support of combined health warnings is great.**

According to a European survey, 76 percent of those questioned supported introducing combined health warnings – only 19 percent disapproved of it. In Germany, 72 percent of participants would like to see combined warning labels, with the disapproval rate being equally low as across the European Union[27].

■ **Smokers would rather get more than less information on tobacco packages.**

According to the ITC report[16], about one third of male smokers would like to get more information about the health risks of smoking on cigarette packets. About half of them are satisfied with the amount of health information currently provided and only twelve percent would prefer to have less information displayed on tobacco packages. In all of the countries where the survey was conducted, the percentage of smokers wishing for more health information was greater than those wishing for less information. Only in the Netherlands, which had only text-based health warnings when the survey was taken, considerably more smokers were against adding more information.

Conclusion
Large pictorial health warnings are an effective means of tobacco prevention, because they
■ **prevent young people from taking up smoking,**
■ **motivate smokers to quit smoking,**
■ **prevent relapse in former smokers.**

Therefore, pictorial health warnings help to reduce tobacco use and contribute, in the long term, to reducing tobacco-related morbidity and mortality and hence to improving public health.

Effectiveness of Pictorial Health Warnings on Cigarette Packages

Literature

(1) Azagba S & Sharaf MF (2012) The Effect of Graphic Cigarette Warning Labels on Smoking Behavior: Evidence from the Canadian Experience. Nicotine & tobacco research : official journal of the Society for Research on Nicotine and Tobacco

(2) Bansal-Travers M, Hammond D, Smith P & Cummings KM (2011) The impact of cigarette pack design, descriptors, and warning labels on risk perception in the U.S. American journal of preventive medicine 40: 674-682

(3) Borland R, Wilson N, Fong GT, Hammond D, Cummings KM, Yong HH, Hosking W, Hastings G, Thrasher J & McNeill A (2009) Impact of graphic and text warnings on cigarette packs: findings from four countries over five years. Tobacco control 18: 358-364

(4) Canadian Cancer Society (2012) Cigarette Package Health Warnings. International Status Report. Third edition, http://www.cancer.ca/Canada-wide/About%20us/Media%20centre/CW-Media%20releases/CW-2012/International%20Warnings%20report.aspx?sc_lang=en (accessed on 18 January 2013)

(5) Cantrell J, Vallone D, Thrasher J, Nagler R, Feirman S, Muenz L, He D & Viswanath K (2013) Impact of Tobacco-Related Health Warning Labels across Socioeconomic, Race and Ethnic Groups: Results from a Randomized Web-Based Experiment. PLoS ONE 8: e52206

(6) Centers for Disease Control and Prevention (CDC) (2011) Cigarette package health warnings and interest in quitting smoking – 14 countries, 2008-2010. MMWR. Morbidity and mortality weekly report 60: 645-651

(7) Deutsches Krebsforschungszentrum (2011) Perspektiven für Deutschland: Das Rahmenübereinkommen der WHO zur Eindämmung des Tabakgebrauchs. WHO Framework Convention on Tobacco Control (FCTC). Deutsches Krebsforschungszentrum (DKFZ), Heidelberg http://www.dkfz.de/de/tabakkontrolle/download/Publikationen/sonstVeroeffentlichungen/Das_Rahmenuebereinkommen_der_WHO_zur_Eindaemmung_des_Tabakgebrauchs_FCTC.pdf (accessed on 18 January 2013)

(8) European Commission (2009) Survey on Tobacco. Analytical report. Flash Eurobarometer 253 – The Gallup Organisation

(9) European Commission (2013) Proposal for a Directive of the European Parliament and the Council on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products. http://ec.europa.eu/health/tobacco/docs/com_2012_788_en.pdf (accessed on 18 January 2013)

(10) Fathelrahman AI, Omar M, Awang R, Cummings KM, Borland R & Bin Mohd Samin AS (2010) Impact of the new Malaysian cigarette pack warnings on smokers' awareness of health risks and interest in quitting smoking. International journal of environmental research and public health 7: 4089-4099

(11) Fong GT, Hammond D, Jiang Y, Li Q, Quah AC, Driezen P & Yan M (2010) Perceptions of tobacco health warnings in China compared with picture and text-only health warnings from other countries: an experimental study. Tobacco control 19 Suppl 2: i69-77

(12) Hammond D (2011) Health warning messages on tobacco products: a review. Tobacco control 20: 327-337

(13) Hammond D, Fong GT, Borland R, Cummings KM, McNeill A & Driezen P (2007) Text and graphic warnings on cigarette packages: findings from the international tobacco control four country study. American journal of preventive medicine 32: 202-209

(14) Hammond D, Fong GT, McNeill A, Borland R & Cummings KM (2006) Effectiveness of cigarette warning labels in informing smokers about the risks of smoking: findings from the International Tobacco Control (ITC) Four Country Survey. Tobacco control 15 Suppl 3: iii19-25

(15) Hitchman SC, Mons U, Nagelhout GE, Guignard R, McNeill A, Willemsen MC, Driezen P, Wilquin JL, Beck F, Du-Roscoat E, Potschke-Langer M, Hammond D & Fong GT (2012) Effectiveness of the European Union text-only cigarette health warnings: findings from four countries. European journal of public health 22: 693-699

(16) International Tobacco Control Policy Evaluation Project (ITC) (2012) Health Warnings on Tobacco Packages. ITC Cross-Country Comparison Report. University of Waterloo, http://www.itcproject.org/documents/keyfindings/crosscountry-comparisons/itc-crosscountrylabelfinalwebpdf (accessed on 18 January 2013)

(17) Li J & Grigg M (2009) New Zealand: new graphic warnings encourage registrations with the quitline. Tobacco control 18: 72

(18) Miller CL, Hill DJ, Quester PG & Hiller JE (2009) Impact on the Australian Quitline of new graphic cigarette pack warnings including the Quitline number. Tobacco control 18: 235-237

(19) Moodie C, MacKintosh AM & Hammond D (2010) Adolescents' response to text-only tobacco health warnings: results from the 2008 UK Youth Tobacco Policy Survey. European journal of public health 20: 463-469

(20) Partos TR, Borland R, Yong HH, Thrasher J & Hammond D (2012) Cigarette packet warning labels can prevent relapse: findings from the International Tobacco Control 4-Country policy evaluation cohort study. Tobacco control

(21) Sambrook Resarch International (2009) A review of the science base to support the development of health warnings for tobacco packages. Prepared for European Commission, Directorate General for Health and Consumers, http://ec.europa.eu/health/tobacco/docs/warnings_report_en.pdf (accessed on 18 January 2013)

(22) Schneider S, Gadinger M & Fischer A (2012) Does the effect go up in smoke? A randomized controlled trial of pictorial warnings on cigarette packaging. Patient education and counseling 86: 77-83

(23) Shanahan P & Elliott D (2008) Evaluation of the Effectiveness of the Graphic Health Warnings on Tobacco Product Packaging 2008. Prepared for Australian Government, Department of Health and Ageing, http://www.health.gov.au/internet/main/publishing.nsf/content/F22B9115FD392DA5CA257588007DA955/$File/hw-eval-full-report.pdf (accessed on 18 January 2013)

(24) Strasser AA, Tang KZ, Romer D, Jepson C & Cappella JN (2012) Graphic warning labels in cigarette advertisements: recall and viewing patterns. American journal of preventive medicine 43: 41-47

(25) Thrasher JF, Carpenter MJ, Andrews JO, Gray KM, Alberg AJ, Navarro A, Friedman DB & Cummings KM (2012) Cigarette warning label policy alternatives and smoking-related health disparities. American journal of preventive medicine 43: 590-600

(26) Thrasher JF, Hammond D, Fong GT & Arillo-Santillan E (2007) Smokers' reactions to cigarette package warnings with graphic imagery and with only text: a comparison between Mexico and Canada. Salud publica de Mexico 49 Suppl 2: S233-240

(27) TNS Opinion & Social (2012) Attitudes of Europeans towards Tobacco. Special Eurobarometer 385, Wave EB77.1, im Auftrag der Europäischen Kommission

(28) Wardle H, Pickup D, Lee L, Hall J, Pickering K, Grieg K, Moodie C & MacKintosh A-M (2010) Evaluating the impact of Pictorial Health Warnings on Cigarette Packets. Final Report. Public Health Research Consortium, http://www.natcen.ac.uk/study/evaluating-the-impact-of-picture-health-warnings-on-cigarette-packets

(29) World Health Organization (WHO), Conference of the parties to the WHO FCTC (2003) WHO Framework Convention on tobacco control. http://www.who.int/fctc/text_download/en/index.html (accessed on 18 January 2013)

(30) World Health Organization (WHO), Conference of the parties to the WHO FCTC (2008) Guidelines for implementation of Article 11 of the WHO Framework Convention on Tobacco Control (Packaging and labelling of tobacco products) (Leitlinien für die Umsetzung von Artikel 11), http://www.who.int/fctc/protocol/guidelines/adopted/article_11/en/index.html (accessed on 18 January 2013)

(31) Yong HH, Fong GT, Driezen P, Borland R, Quah AC, Sirirassamee B, Hamann S & Omar M (2013) Adult Smokers' Reactions to Pictorial Health Warning Labels on Cigarette Packs in Thailand and Moderating Effects of Type of Cigarette Smoked: Findings From the International Tobacco Control Southeast Asia Survey. Nicotine & tobacco research: official journal of the Society for Research on Nicotine and Tobacco