Published in final edited form as:
Tob Control. 2014 January ; 23(1): . doi:10.1136/tobaccocontrol-2012-050541.

The evolution of health warning labels on cigarette packs: the role of precedents, and tobacco industry strategies to block diffusion

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Abstract

Objective—To analyse the evolution and diffusion of health warnings on cigarette packs around the world, including tobacco industry attempts to block this diffusion.

Methods—We analysed tobacco industry documents and public sources to construct a database on the global evolution and diffusion of health warning labels from 1966 to 2012, and also analysed industry strategies.

Results—Health warning labels, especially labels with graphic elements, threaten the tobacco industry because they are a low-cost, effective measure to reduce smoking. Multinational tobacco companies did not object to voluntary innocuous warnings with ambiguous health messages, in part because they saw them as offering protection from lawsuits and local packaging regulations. The companies worked systematically at the international level to block or weaken warnings once stronger more specific warnings began to appear in the 1970s. Since 1985 in Iceland, the tobacco industry has been aware of the effectiveness of graphic health warning labels (GWHL). The industry launched an all-out attack in the early 1990s to prevent GHWLs, and was successful in delaying GHWLs internationally for nearly 10 years.

Conclusions—Beginning in 2005, as a result of the World Health Organisation Framework Convention on Tobacco Control (FCTC), GHWLs began to spread. Effective implementation of FCTC labelling provisions has stimulated diffusion of strong health warning labels despite industry opposition.

INTRODUCTION

Despite different political institutions and cultures, interest group formulations and partisan ideologies, tobacco control policies (smoke-free laws, taxation, advertising restrictions and health warnings) exhibit a surprising degree of policy convergence across time and

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Contributors HH had the idea for this study and did the initial data collection and prepared the first draft. EC did additional data collection, and SAG worked with them to transform the first draft into the final manuscript.

Competing interests HH served as an expert witness for a plaintiff in tobacco litigation, Salminen v Amer Sports Oyj and BAT Finland, in 2008 and in 2009. EC and SAG have nothing to declare.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement All tobacco industry documents are freely available at http://www.legacy.library.ucsf.edu

geography,[1–3] consistently experiencing intense globally coordinated opposition from the tobacco industry.[45] Health warning labels (HWL) on cigarette packs are a low-cost, effective measure to affect smoking.[6] HWLs with graphic elements, first introduced in 1985 and which started to spread in the early 2000s, are more effective than text-only warnings. [7–11] The Guidelines for implementing Article 11 of the World Health Organisation Framework Convention on Tobacco Control (FCTC) specifies that HWLs be rotating, large (at least 30% of the front of the pack), clear, visible and legible, may include pictures or pictograms, and may disrupt the impact of brand imagery on packaging and decrease the overall attractiveness of the package.[1213]

Previous studies[14–23] documented tobacco industry strategies to block or weaken text health warnings, including submissions to government, privately influencing politicians and the media, using third parties to argue the industry's position, commissioning research (including opinion polls and legal research) arguing that people already know the hazards of smoking, and claiming that HWLs conflict with other national laws and international treaties. The process of introducing HWLs and improvements to HWLs is examined here as a diffusion of innovation.[24] HWLs are simple, compatible and observable, all factors that contribute to their diffusion.[24] The tobacco industry, which identified GHWLs as a threat as early as 1985, slowed diffusion by preventing innovations in one country from spreading to others. The tobacco industry's familiarity with this theory (refs. [25], pp 12, [26]) may have assisted them in identifying GHWLs as a global threat as early as 1985. Our review of industry documents aims to show how the industry slowed diffusion of HWLs by preventing innovations in one country from spreading to others, and demonstrates that effective implementation of FCTC Article 11 will require anticipating and overcoming tobacco industry efforts to block GHWLs.

METHODS

We searched published literature, government documents, media reports, the Tobacco Labelling Resource Center (http://www.tobaccolabels.ca) and tobacco industry documents (http://legacy.library.ucsf.edu) between January 2010 and December 2011, beginning with the terms 'health warnings', 'warning clause', 'health notice', 'warning labels', 'warning', 'graphic' country names, individuals, and Bates numbers of adjacent relevant documents using standard methods.[27] We reviewed approximately 4500 documents.

We collected information on dates of introduction and changes to HWLs since first introduced in 1966 until 2012, and categorised them into five categories (table 1 and figure 1), including HWLs mandated by law and from voluntary agreements between the tobacco companies and governments.

We initially separated all the different labels we found into distinct categories based on content (attributed to an authority or not), specificity (vague or specific), placement (side of the pack or front of the pack), size and visibility (noticeable or inconspicuous), rotation (single or multiple HWLs), and presence of included graphic elements (no or yes), then consolidated them into the five categories in table 1, focused on major areas of innovation: specificity, placement, rotation and graphic elements of the HWLs. The first category is for vague HWLs placed on the side of the pack; the second category for more specific health messages on the side, or vague messages placed on the front of the pack; the third category for specific and noticeable health messages on the front of the pack; the fourth category for rotating third category messages and, finally, the fifth category for HWLs with graphic elements. An additional category was used for 58 countries for which Phillip Morris and other companies voluntarily added English (foreign language) HWLs in 1992.

Information on the HWLs over time came from 10 industry documents (refs. 28–30 31, pp. 287–416, 32–37), the US Department of Health, Education, and Welfare,[38–41] the Canadian Cancer Society's International Status Report on Cigarette Package Health Warnings Tobacco Labelling Resource Center[1142] (searched from October to November 2011), Physicians for Smoke-free Canada website on picture-based health warning labels (http://www.smoke-free.ca/warnings), FCTC reporting database (http://apps.who.int/fctc/reporting/database/), and WHO Report on the Global Tobacco Epidemic, 2011.[43]

HWLs were coded by two independent observers; intercoder reliability using ordinal Krippendorff 's α was 0.99.

When interpreting the results, note, that the number of UN member countries increased from 123 in 1966 to 193 in 2012.

RESULTS

There has been a steady diffusion of HWLs since they were introduced in 1966 in the USA, with warnings becoming more specific, and moving from the side to the front of the pack, particularly after the 1980s (figure 2). Graphic health warning labels (GHWLs), first implemented in Iceland in 1985 (and removed in response to industry pressure in 1996 (ref. 44, pp. 12–15) began to diffuse in the 2000s, mostly to countries that already had rotating text warning labels on the pack front. As of February 2012, 169 of 193 countries had implemented HWLs, including 49 with GHWLs; 34 still had weak firstgeneration and second-generation HWLs.

First-generation HWLs: vague health message on the side of pack

The companies began fighting HWLs in the USA in 1957, when legislation requiring warnings was first proposed in Congress.[28] In 1959, the industry defeated a bill in the South Dakota legislature that would have required a skull and crossbones on cigarette packages,[45] possibly the first GHWL proposal. These efforts accelerated following the US surgeon general's 1964 report on Smoking and Health,[46] when the US Federal Trade Commission (FTC) proposed that cigarette packages carry HWLs.[47] Rather than fighting the FTC, the industry lobbied Congress to pass the 1965 Cigarette Labelling and Advertising Act that required a weak first-generation text warning label, 'Caution: Cigarette smoking *may be* hazardous to your health [emphasis added],' on package side and preempted the FTC or any other government agency from requiring a stronger warning on packages or in advertising (ref. 48, pp. 138, 163).

By 1970, the industry stopped blocking HWLs with vague health messages attributed to the government.[142021] In 1970, British American Tobacco (BAT) sent a position paper to its global subsidiaries stating, 'Cautionary labelling, providing the wording on the pack is relatively innocuous and in small print, might well be less harmful than voluntary restrictions on the use of advertising media.'[49] In 1971, the UK became the first government to reach a voluntary agreement with the industry to add the first-generation HWL 'Warning by HM Government: Cigarettes Can Damage Your Health' to the package sides.[40]

Second-generation HWL: specific health message on the pack side

In 1969, Iceland became the second country to require HWLs when parliament required the first second-generation HWLs with the clear health message: 'Cigarette smoking could cause lung cancer and heart diseases.' This warning was stronger and more specific than the US warning (table 1).[50] US manufacturers complained that the warning was 'too strongly worded' and recalled a cigarette shipment bound for Iceland.[51] Horace Kornegay, vice

president of the Tobacco Institute (TI), the US tobacco industry's political and lobbying organisation, went to Iceland to negotiate with the State Alcohol and Tobacco Company of Iceland (ÁTVR), which imported US cigarettes. According to an ÁTVR press release, Kornegay told ÁTVR that printing Iceland's required HWL on the packages 'would give precedent to markings in other export markets'.[52] In 1969, ÁTVR convinced the Finance Ministry to replace the requirement that the HWLs be printed on the package with a sticker on the package bottom, as US tobacco manufactures insisted.[5253] The US manufacturers provided the stickers and equipment to apply them, and AVTR applied them.[53] The strong language was maintained. The US companies continued to refuse to pay the costs of attaching the stickers to the packages, and in 1971, ÁTVR convinced the parliament to abandon the HWLs.[5354]

Third-generation HWLs: specific health message on the front of the pack

In 1973, the Norwegian Ministry of Social Affairs proposed the nation's first comprehensive tobacco law,[55] including the first third-generation HWLs printed on the pack front with a specific warning.[305657] Both local Norwegian (Tiedemanns and Langaard) and multinational companies opposed the law,[58–60] and the 1975 law only required the HWL to be on the pack side.[57]

In 1987, the Arab Gulf health ministers passed 'Resolution No. 4' calling for HWLs on the pack front in all Gulf Cooperation Council countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates). Societe Nationale d'Exploitation Industrielle des Tabacs et Allumettes (SEITA), the French state-owned tobacco monopoly, began selling packs with warning labels on the pack front (in English and in Arabic) to all Gulf markets. In 1988, the Middle East Tobacco Association (META),[61] representing the major international cigarette manufacturers in the Gulf, mounted 'intensive lobbying efforts'[62] that led all countries but Saudi Arabia to move the warning to the side panel,[62] making Saudi Arabia the first country to require a clear health message on the front of the pack (without rotation). In Australia, innocuous HWLs in small print had been on the front of the pack since 1973.[14]

Third-generation HWLs did not proliferate before the early 2000s because many countries moved directly from second-generation to fourth-generation HWLs. The third-generation HWLs became more common when developing countries started implementing FCTC Article 11's minimum requirement of a third-generation HWL.

Fourth-generation HWLs: rotating messages on the front of the pack

In May 1976, the National Swedish board of health and welfare proposed the first fourth-generation HWLs, which included the rotation of 16 different HWLs covering at least 20 percent of the front of cigarette packs (figure 3).[6364] In August 1976, Paul Isenring, Phillip Morris (PM) director for the European region, reported to PM's top management in New York that, if enacted, Sweden would be the first and only country with multiple HWLs on the market simultaneously, and expressed concern that if Sweden moved ahead, the new multiple HWLs could spread.[65] Despite industry opposition, Sweden implemented the rotating HWLs in January 1977.

In May 1977, Isenring drafted an action plan for PM to block 'across the border spill-over' of new tobacco control innovations including HWLs, because 'legal, political and competitive developments in specific countries or regions are regarded by other governments as model cases for their own legislation. This is true world-wide.'[66] Given the severity of the threat, Isenring advocated cooperation with PM's main competitors to block the diffusion of tobacco control initiatives in Europe.[6667]

In June 1977, the multinational companies formed the International Committee on Smoking Issues (ICOSI, renamed the International Tobacco Information Center, INFOTAB, in 1980) to replicate the functions the TI performed in the USA.[6068] ICOSI member companies agreed to act together and respond worldwide by developing strategies to undermine tobacco control. In 1979, PM submitted two position papers to the ICOSI Advertising Task Force with arguments against HWLs.[69–71] The papers cited Iceland's decision to drop HWLs as an example of governments' 'uncertainty and confusion'[71] about HWLs, and how 'hasty actions may lead to the need for change at a later time',[70] to suggest that other countries abandon HWLs.

In 1978, the TI successfully used Iceland's retreat from compulsory HWLs to block a US Senate proposal to introduce rotating HWLs.[72] Rotating HWLs were not mandated in the USA until 1985, and then only on the pack side.

The implementation of multiple HWLs in Sweden and their diffusion led the multinational companies to intensify their efforts in the mid-1980s to undermine HWLs in Europe and globally.[60] On the global challenges facing the industry, in a 1985 speech to 70 representatives from multinational companies, national manufacturers' associations and local companies, INFOTAB's chair observed:

> The tendency is for each country to think its problems are unique. The fact is that tobacco issues have always been international. … Rotating labels came to us from Sweden—and the furor about environmental tobacco smoke was started in Japan. As one of our Australian colleagues puts it, 'a sneeze in one country today causes international pneumonia tomorrow!'[73]

Despite the industry's success in the USA, rotating HWLs on the pack front were emulated (after pitched battles) in other countries,[14] including Ireland (1979), Iceland (1985), Australia (1987), New Zealand (1988) and Cyprus (1988).

Voluntary HWLs on exported cigarettes to block diffusion of required HWLs

In July 1991, PM's chief financial officer wrote to PM and Kraft Foods (a PM subsidiary from 1988 to 2007) CEOs reporting that New York City federal Judge Milton Pollack had told his friend Fayez Sarofim (who managed Dreyfus mutual funds, which included PM stock) that PM would be wise to put the US-style innocuous HWLs on pack sides of all of export cigarettes to reduce future liability.[74] The company had considered doing so for some time to deflect calls for more comprehensive measures, but not acted because executives wanted to use this 'concession' as a bargaining chip in negotiations with the US Congress.[7576] Shortly after learning of Judge Pollack's advice, PM voluntarily placed US English language HWLs on all its exported cigarettes[75] to countries that did not have specific national requirements.

Other multinational companies followed. In 1992, BAT decided to add the warning "Tobacco seriously damages health" attributed to EC Council Directive 89/622/EEC[77] to the side of packs exported to markets without mandatory HWLs. However, BAT did not follow the EC directive which required the warning on the pack front with more explicit warnings on the back. BAT justified not complying with the requirement on the grounds that 'the EC labelling directive implemented from the beginning of 1992 is complicated, convoluted and confusing, and the simpler approach of placing a general warning in the traditional place (side of packet) is more appropriate.'[77]

Of those 58 countries, mostly in Africa and in Latin America, with foreign language HWLs in 1992, only five had replaced them with mandatory HWLs before 2007 when FCTC began to take effect (figure 4). The industry's voluntarily placement of foreign (English) language

warnings on their export packages effectively blocked—and was still continuing to block—diffusion of stronger language-appropriate HWLs in many countries 20 years later.

Fifth generation of HWLs: graphic images

In 1984, Icelandic health officials studied the Swedish model and recognised that over time, smokers would not read even rotating text warnings.[78] To hold smokers' interest, Ministry of Health and Social Security graphic designers proposed using several graphical illustrations to reinforce the text warnings: black lungs, a patient in bed, a diseased heart and a pregnant woman (figure 5). In May 1984, parliament approved the Icelandic Tobacco Act that required the world's first GHWLs graphic warning labels by July 1985.

The industry reacted strongly. In November 1984, PMI prepared a detailed industry-wide strategy to stop GHWLs in Iceland before the health ministry approved the regulation.[79] PMI corporate affairs, PM Washington relations office, and PM consultants contacted the Icelandic Ambassador to the USA, US assistant secretary of state for European Affairs, head of the Icelandic desk at the US State Department, and the office of the US Special Trade Representative to oppose the GHWLs.[79] Meanwhile, INFOTAB supplied the sales director for Rolf Johansen Co, which imported RJ Reynolds (RJR) cigarettes to Iceland, with arguments contesting the Finance Ministry's number of deaths caused by smoking.[80] Nevertheless, in December 1984, the Icelandic health minister approved regulations implementing the GHWLs.

In January 1985, the US companies again threatened an embargo.[7981] In February 1985, INFOTAB's secretary general, Bryan Simpson, travelled to Iceland to lobby legislators before the regulations took effect.[82] In the first mention of the effect of HWLs on 'brand presentation' we located, Simpson wrote PM, RJR and Brown & Williamson (B&W) lawyers in the USA in February 1985, emphasising that the Icelandic law was 'in effect introducing, within the pack, a form of advertising which seriously affects brand presentation,'[82] recognising the ability of fifth generation of HWLs to disrupt the package as a marketing device.

Simpson anticipated that other governments would copy the Icelandic warnings, and noted that Norway was already showing interest.[8283] He continued, 'The warning technique would have particular appeal in areas such as the Third World where it would be claimed that the message would be better understood by societies where there was high incidence of illiteracy.'[82]

This time the Icelandic government was determined to keep GHWLs. The industry won only two minor changes: the text of one HWL was changed from 'about 300 Icelanders die each year from smoking' to 'annually hundreds of Icelanders die from smoking'[80] and a Christian cross (suggesting death) was dropped from an image of a body. Tobacco Trade Barometer, the US Tobacco Merchants Association's newsletter, reported in April 1985, that 'in Iceland, effective July 1, 1985, cigarettes, cigars, pipe tobacco and chewing and snuff tobacco will be required to carry the most graphic health warning notices ever legislated by any government, national or local, in the world.'[84] All US manufactures complied with Iceland's health warning requirements, although PM stopped shipping Marlboro to Iceland (but continued importing a minor brand, Stanton).[85] PM resumed importing Marlboro in 2000 (with the required Icelandic warnings) when Canada implemented stronger GHWLs.[86]

Tobacco companies learned from Iceland that GHWLs were effective. In November 1985, the US publication, Flue Cured Tobacco Farmer, reported that 'graphic label warnings spur tobacco sales drop in Iceland.'[87] Between 1984 and 1985, sales of tobacco products in Iceland declined by 3.5%,[87] and smoking prevalence among Icelandic men dropped from

42.9% to 37.2%, and from 37.0% to 35.2% among women.[488] The Icelandic Smoking Control Programme attributed these declines to the new law that included GHWLs, prohibited stores from displaying tobacco products, banned smoking in government buildings and on buses, and restricted smoking in restaurants by establishing non-smoking areas, a conclusion reiterated in 1987 by the Icelandic Smoking Control Programme.[4]

Blocking the diffusion of fifth-generation HWLs

The Icelandic fifth-generation warnings attracted attention elsewhere. In 1989, the *Journal of American Medical Association* published a US study showing that federally mandated text-only warnings in tobacco advertisements were ineffective among adolescents[89] and cited the Icelandic GHWLs as reason to introduce graphical warnings in the USA. The TI obtained the manuscript before publication and submitted it to three public relations agencies to suggest countermeasures, one of which described it as posing 'devilish problems' for the industry.[90] The agencies suggested the TI conduct its own surveys on children's smoking perceptions. Afraid of adverse findings, the Institute decided not to pursue this recommendation[90] and, instead, arranged for several letters to be written to *JAMA* and the *Wall Street Journal*.[91–93]

In 1989, a proposed revision of the Swedish Tobacco Act included fifth-generation GHWLs covering almost 70% of the pack front,[9495] including skull and crossbones, crosses and cancer symbols, arguing that 'the introduction of an illustrative element substantially increases the attention value' citing Iceland's experience.[94]

PM management in Europe considered the proposal a 'HWL crisis.'[96] PM's local corporate affairs officials began lobbying politicians, contacting media, and developing a network of supportive third parties, including labour unions[9697] and the smokers' rights group, Smokepeace Sweden, the industry had organised.[6098] PM, Turmac Tobacco Company and Svenska Tobak filed a complaint with the National Board of Health and Welfare alleging that the proposal violated tobacco companies' rights of freedom of expression and property rights as embodied in their trademarks.[99–101] PM argued that the 'purpose of the legislation is to inform about possible health hazards' associated with tobacco use, which was already met by existing text warnings,[99] that the Board had not presented any investigation 'that shows that attention value of the present warning text system has diminished,' and that the pictorial elements were 'misleading from a scientific point of view,' 'purely opinion-influencing' and 'extraordinarily difficult to decipher,' and 'misleading even for this reason.'[99] PM also argued that the proposed GHWLs conflicted with European Community (EC, the precursor to the European Union) Directive 1989/622 regarding tobacco product labelling, [102103] that only required a warning covering 4% of the pack front.[37] Complying with EC directives was important because Sweden was preparing, together with Finland and Norway, to apply for EC membership, and the application process required identifying policy areas where harmonisation with EC directives would be necessary. PM led the Finnish National Manufacturer's Association in a meeting with the secretary of the Ministry of Social Affairs in Finland who, despite the Ministry's support of GHWLs, sympathised with the tobacco industry.[104–106] PM aimed to show the Swedish Health Board that Finland and Norway, which considered joining the EC, would oppose changing HWLs before entering the EC.[96]

In January 1991, the Board dismissed the tobacco companies' complaint, concluding there was no conflict between Sweden's membership in the EC and the proposed HWLs.[100101] The Board obtained similar opinions from Ministries in Norway and Iceland where trade agreements with EC were discussed.[107] Even so, in December the government dropped the planned fifth-generation GHWLs to avoid any question about harmonisation with the EC.[108]

The industry's strategy of claiming EC pre-emption of country-level HWL innovations proved successful. In 1996, Iceland abandoned the GHWLs it adopted in 1985 to harmonise with weaker EC Health Warning Directives.[3754] Despite expressing interest in fifth-generation HWLs in 1985, Norway's 1995 regulations followed the weaker EC Health Warning Directive by reducing the label size and colour contrast between text and background, and eliminating the requirement for design according to a given template and a certain font size.[57] Norway abandoned the idea of graphic elements until 2011.

Breakthrough on fifth-generation GHWLs

In the late 1990s, the Canadian government health agencies, non-governmental organisations, and health professionals began campaigning to increase the size of warning labels and include strong photographs depicting the damage caused by tobacco.[109]

The Canadian Tobacco Manufacturers Council (CTMC) tried to stop the proposed regulations by polishing the industry's public image and launching a major lobbying programme.[110111] CTMC recognised that 'the Industry's agenda is simply not compatible with that of Canadians'[110] because of the public 'perception that the Industry does not tell the truth'[111] about the health risks, and 'markets its products to youth or, at least, does nothing to discourage it.'[111] In summer 1999, CMTC mounted an advertising campaign claiming that the industry needed to be heard on issues concerning packaging and youth smoking.[111] The industry launched what a 1999 memorandum in PM files described as a 'full blown government relations programme' to lobby government agencies, including 'Revenue, Treasury Board, Finance, Justice, Trade departments and Ministers' offices and the Standing Committee on Health members by CTMC representatives and individual companies.'[110] Despite this pressure,[112–115] in January 2000, the Canadian health minister, with strong support from the health community, announced that he would initiate rulemaking for a regulation to require cigarette companies to devote 50% of the front of the pack to graphic photos of diseased human organs.[116]

In January 2000, the PM corporate affairs director in Australia reported to PM headquarters in New York that the Canadian proposal had been enthusiastically copied there,[117] with leading Australian public health groups urging government to adopt Canadian-style GHWLs. In June 2000, PMI's CEO produced an internal position paper on GHWLs to be distributed to regional PM presidents and corporate affairs heads to oppose proposals in 'Canada and elsewhere' that would supplement written warnings with 'shock' illustrations 'designed to disparage the product and to make the products' packaging repulsive.'[118]

By January 2001, Canadian cigarette packs featured labels with graphic photos of the effects of cancer, making Canada the first country to use graphic photographs on GHWLs.[119120] GHWLs, together with tax increases, dropped per capita tobacco consumption in Canada by 8.1% from 2001 to 2002.[121]

During negotiations for the FCTC in the early 2000s, the industry initiated Project Cerberus, a worldwide voluntary code for self-regulating tobacco advertising as an alternative to the FCTC,[122] including offering voluntary third-generation HWLs to pre-empt FCTC Article 11, which states that HWLs occupy '50% or more of the principal display areas but shall be no less than 30% of the principal display areas.' To promote self-regulation and corporate social responsibility, BAT produced several 'Social Reports,' which detailed the company's voluntary measures, including HWLs.[123]

The industry built on its successful strategies in Sweden 1991 to oppose GHWLs in Asia and Latin America in the 2000s. In Uruguay, Brazil and Paraguay, the industry litigated to stop or delay GHWLs by claiming they infringed trade agreements.[124] In India, the industry

blocked the use of the skull and crossbones symbol in 2007 by claiming that the skull symbol would be offensive to Muslims.[125] Nevertheless, beginning in 2005 as a result of FCTC implementation, fifth-generation graphic warning labels began to spread (Figure 2), mostly replacing second-generation and fourth-generation HWLs. In 2003, only two countries (Canada and Brazil) had implemented GHWLs. By 2012, this number increased to 49.

DISCUSSION

The diffusion of HWL innovations illustrates that the tobacco industry approached the issue globally from the very beginning. By contrast, until the FCTC, the health community viewed HWLs as a local issue. In 1985, the multinational tobacco companies began fiercely opposing GHWLs when Iceland first proposed them, because they understood that, in addition to providing information, GHWLs had the potential to disrupt advertising and marketing. They failed to stop Iceland's GHWLs in 1985, but succeeded in Sweden in 1991. This local defeat was a major loss for global public health because these effective warnings were not implemented elsewhere until a decade later in Canada. The tobacco industry was able to block the diffusion of a tobacco control innovation for many years by preventing implementation in one country, which would set a precedent for other countries to follow.

Bad policies can also be exported. The tobacco industry used Iceland's decision to abandon HWLs in 1971 to oppose warning labels in the USA, and the adoption of weak HWL in Sweden in 1991 to neighbouring Finland, Norway and Iceland, and later, Canada.

There are four elements to diffusion: the innovation itself, the communication channels, time and the social context. The industry has acted on each element, using specific approaches—denaturing the innovation by trying to make it meaningless, polluting the communication channels with disinformation, delaying the process, and using propaganda and lobbying to undermine social support for proposed HWLs. The industry also worked to influence the factors that determine the rate of adoption of an innovation, relative advantage by communication tactics that denied the advantage and effectiveness of HWLs, compatibility by convincing people that HWLs are not compatible, for example, with European law: complexity by declaring that printing HWLs in all languages would be a 'tremendous burden'; triability by preventing innovator countries from trying HWLs; blocking the process at its inception (as the industry was trying to do in 2012 with respect to the introduction of plain packaging by Australia); observability by giving a false external presentation of the innovation so that international observers will have a wrong perception of it. Thus, the theoretical framework of diffusion of innovation offers a powerful taxonomy to understand tobacco industry tactics.

The impediments from the tobacco industry can be overcome. After the first HWLs were implemented in the USA, innovative package warnings diffused from small countries to larger ones (table 1). Before the FCTC, the tobacco industry was successful in slowing the diffusion of HWLs using its strategy to move the debate on HWLs from national to international level. This pattern reversed following the FCTC: from 2008 to 2012, the number of countries with large HWLs on the pack front (Generation IV) increased from 43 to 57, and the number with Generation V GHWLs increased from 21 to 49.[24] There has been a surprising degree of policy convergence towards more comprehensive HWLs once industry opposition was overcome in a few countries, to establish effective precedents.

While the companies vigorously opposed HWLs they thought would be effective, they realised as early as 1970 (refs. 126 127 p. 254) that first-generation HWLs with innocuous messages attributed to health officials (rather than the companies themselves) provided them

a substantial benefit: a defence in litigation. [2021] The companies realised that they could denature HWLs by 'attributing' them to a third party, a public health authority, or some piece of legislation. Attribution changes the meaning of the message, by adding one level of indirection to it: rather than being a statement about what smoking does (eg, 'Smoking causes cancer') it becomes a statement about what a public health authority says it does ('Surgeon General Warning: Smoking causes cancer'). Attribution was seen as 'a major benefit to the industry,'[128] something it lobbies to have added to HWLs,[129] and a necessary condition for the industry's acceptance of HWLs.[130] While the companies denied that smoking caused disease, they could claim that injured smokers had been warned and assumed the risk of smoking.[131] Between 1971 and 1995, the tobacco companies convinced 17 countries to adopt weak voluntary HWLs. In 1992, PM and other international tobacco companies agreed to place English (foreign) language HWLs on exported cigarettes to 59 developing countries. This strategy delayed implementation of government-mandated HWLs until 2010 when FCTC began to take effect. As of 2012, at least 25 countries still had the industry's weak voluntary English HWLs dating from 1992.

In the early 1990s, Australia and Canada proposed mandatory plain packaging of cigarettes. In response, the major tobacco companies (BAT, Rothmans, PMI, RJ Reynolds, Imperial Tobacco, Reemtsma, and Gallaher) created the Plain Pack Group, a new coordinated global strategy of collaborating internationally to prevent the diffusion of plain packaging proposals using international treaties to claim violation of their trademark rights.[132] As a result of these scare tactics, both countries withdrew their proposals, thus delaying plain packaging for almost 20 years until Australia enacted plain packaging in November 2011.[133]

LIMITATIONS

The publicly available tobacco industry documents may not be the complete record of all tobacco industry activities against HWLs, which may limit our knowledge of such activities.

It was not possible to find complete information on the status of HWLs for all countries and years. The uncertainties concern some African and Asian countries, as well as some very small countries where it was difficult to identify the exact year of implementation of various HWL policies. For some countries, the transition period for warning implementation on packages has not been completed as of early 2012 when this paper was written.

CONCLUSIONS

Diffusion of tobacco control innovations, such as HWLs, has been influenced by the tobacco industry actions at critical junctures where innovations were introduced. The industry has blocked the diffusion of HWL innovations and also tried to set adverse precedents where innovative HWL policies have been replaced by less effective policies. GHWLs are easy to implement and to understand. They could make a major impact especially in multilanguage countries, and in countries with high illiteracy, to overcome the problem of not having the warning text in all local languages.[22] The FCTC was followed by an acceleration of HWL innovations. The global diffusion of HWLs since 2005 shows that effective implementation of FCTC labelling provisions can overcome tobacco industry efforts to blocking effective HWLs both in developed and developing countries, so long as public health forces learn from experiences in other countries, and anticipate industry opposition and deal with it in a forthright manner.

Acknowledgments

We thank Ashley Sanders-Jackson for independently coding the HWLs (along with HH) and computing the reliability statistic.

Funding This work was supported by National Cancer Institute grant CA-87472 and the Erkki Poikonen Foundation. The funding agencies played no role in the selection of the specific topic, research or preparation of this paper.

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What is already known on this topic

- Cigarette health warning labels are a low-cost, effective measure to decrease smoking, and are increasingly effective with graphic images.

What this study adds

- The process of introducing cigarette health warning labels is examined using the theory of diffusion of innovations as a conceptual framework.
- Tobacco companies have prevented and delayed advanced health warning labels by implementing weak voluntary advertising agreements, influencing politicians and the media.
- While tobacco companies have successfully delayed this diffusion by operating at the international level to prevent innovations in one country from spreading to others, since 2003, the public health community, which used to view health warning labels as a local issue, started viewing diffusion of health warning labels in a global context, a process encouraged by the World Health Organisation Framework Convention on Tobacco Control.

Figure 1.

Examples of different generations of HWLs. (Sources: 1. China, export, 2010, http://www.tobaccolabels.ca/gallery/chinapacks/marlboromenthollightschinamay2010jpg; 2. Costa Rica, 2008, http://www.tobaccolabels.ca/gallery/costaricapacks/marlborolightsmentholcostaricasept2008rightsideang; 3. Australia, c. 1990, http://www.tttt.ru/03819.jpg; 4. Belgium, 2007, http://www.tobaccolabels.ca/gallery/belgiumpacks/marlbororedbelgium2007rightsideanglejpg; 5.Uruguay, 2010, http://www.tobaccolabels.ca/gallery/uruguaypacks/marlbororeduruguaynov2010rightsideanglejpg. All accessed 7 July 2012). This figure is only reproduced in colour in the online version.

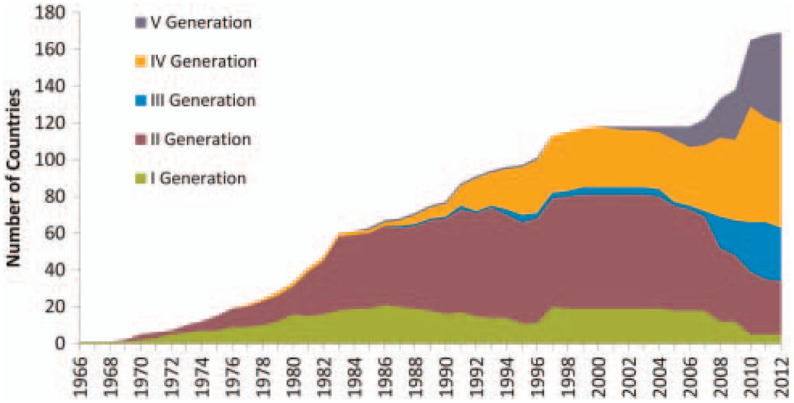

Figure 2.
Evolution of HWLs by Generation type 1966–2012.

Figure 3.
English language presentation of fourth-generation HWLs implemented in Sweden in 1977.[64]

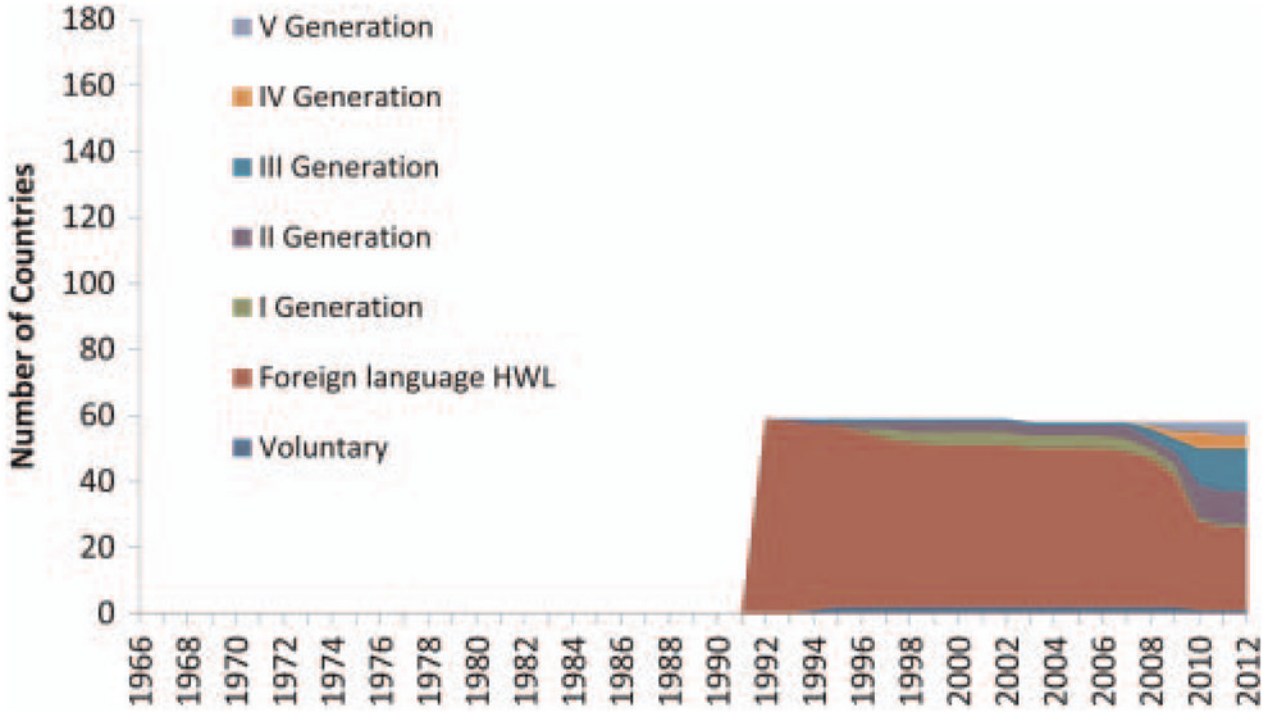

Figure 4.
Diffusion of HWLs among countries with voluntary tobacco industry foreign (English) language HWLs in 1992.

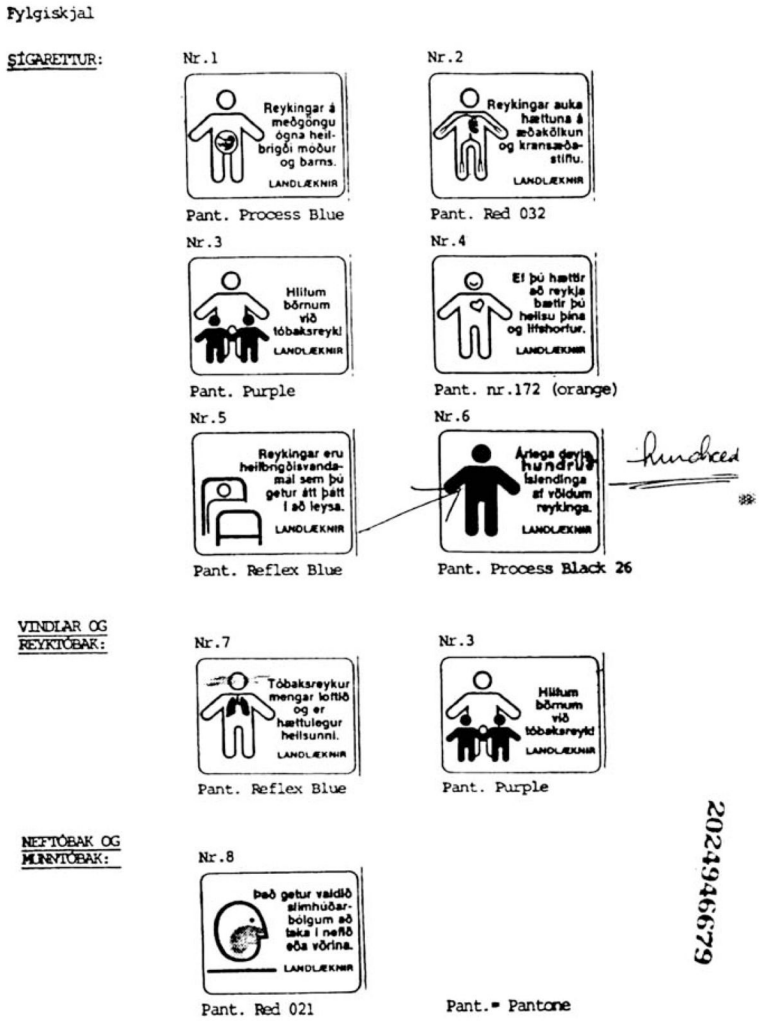

Figure 5.

Graphic health warning labels implemented in Iceland in 1985.[78] Text reads: 1. Smoking during pregnancy causes damage to infants; 2. Smoking causes blockage of the arteries; 3. Let's protect children against tobacco smoke; 4. To stop smoking improves health and prolongs life; 5. Smoking is a health problem that you can help solve; 6. Annually, hundreds of Icelanders die from tobacco smoking.

Table 1

Five generations of health warning labels, and tobacco industry strategies to block diffusion

HWL generation (year)	HWL description	First implemented example (country, year)	Tobacco industry strategy	Diffusion outcome/local outcome
First generation (1966)	Government requirement and vague health message warning on the side of the pack	'Caution: cigarette smoking may be hazardous to your health' (USA, 1966)	Voluntary agreements	Voluntary agreements in 17 countries between 1971 and 1995
Second generation (1969)	Smoking established as a definite health hazard, or specific diseases mentioned, message on the side of the pack (or innocuous message on the front)	'Warning: Cigarette smoking can cause lung cancer and heart diseases" (Iceland, 1969–1971)	Suspended shipments to Iceland, publicising Iceland's decision to withdraw HWLs	Law repealed in Iceland in 1971
Third generation (1987)	Affirmative and visible health message on the front of the pack and or on the back of the pack	'Smoking is a main cause of cancer, diseases of the lung, and diseases of the heart and the arteries' (Saudi Arabia, 1987)	Lobbying, defending united front	Generation III HWLs dropped in Norway in 1973, delayed progress in placing HWLs on the front of the pack
Fourth generation (1977)	Rotating detailed health messages on the front of pack	'Smokers run an increased risk of heart attacks and certain diseases of the arteries. National Board of Health and Welfare' (one of 16 HWLs) (Sweden, 1977)	Lobbying, developing global strategies to oppose HWLs	Rotating HWLs quickly diffused beginning in 1979
Fifth generation (1985)	Graphic health warnings, pictures to reinforce the health message on front and or back of the pack	Eight cartoon GHWLs with images such as a pair of black lungs, a patient in bed or a diseased heart (Iceland, 1985–1996)	Corporate social responsibility, trade agreements	Generation V HWLs stopped in Sweden 1991

GHWL (HWL), graphic health warning labels.