Some practical points on harm reduction: what to tell your lawmaker and what to tell your brother about Swedish snus

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COMMENTARY

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For harm reductionists in some countries, smokeless tobacco can be used as a small backfire to help control a larger, more deadly forest fire. For tobacco prohibitionists, smokeless itself is too evil to use even as a tool. For some anti-tobacco scientists, the necessary data may still be lacking. The low tar cigarette disaster seems to have made some policy makers act as if, having been fooled once, their greatest goal is to avoid the shame of being fooled twice.

From Foulds and colleagues'[1] excellent review, proponents of smokeless tobacco for harm reduction will find useful evidence. Opponents will still question, even if there *may* be a positive effect in Sweden, whether it can or should be exported. They will disagree with Bates and colleagues[2] on ending the snuff ban in the European Union. Opponents will proliferate ''what ifs'' (for example, what if snus is a gateway to cigarettes). They will demand science based regulation (as do harm reductionists). They will say that clinical trials must be completed before taking action (forgetting perhaps that randomised controlled trials were not a requirement to prove cigarettes a cause of premature death).

We doubt that any feasible clinical trial in another country can provide us with better evidence on the possible individual and societal effects of snus. Controlled experiments can be instructive, but the Swedish example is priceless. Physicians and public health professionals are not always the key players in tobacco control—consumers appear to be active participants in the process. The Swedish effects do not appear to have arisen from physicians systematically giving advice to their patients (as a clinical trial might simulate), or from the public health community campaigning to persuade smokers to switch to the safer product, or from manufacturers' advertising.

We agree with the conclusions of this review,[1] including the special concerns about highly toxic smokeless tobacco in India and Africa. The authors' first conclusion for evidence based product regulation has long been the consensus opinion among those who work on harm reduction. The US Congress has been actively trying to develop a law to regulate tobacco through the Food and Drug Administration. (By publication date, a law may be in place.) From the sidelines, it has become obvious that there are more ways to have legislation make matters worse than better. Some current US legislative issues will be discussed in the first part of this essay.

WHAT TO TELL YOUR LAWMAKER ABOUT SNUS AND HARM REDUCTION

We do know how legislation works

We know that the economic significance of tobacco is so great that the US Congress will not allow legislation leading to the banning of cigarettes. We know any legislation will result from compromises among various powerful factions, only a few of which care a whit about science. Some factions within the health lobby lean only somewhat toward harm reduction, while others are resolved to not even permit loosened restrictions on medicinal nicotine. Many of these factions will have de facto veto power, meaning that no Bill will become law that risks too much change in the status quo.[3] We know that, at best, science is a gadfly in this process.

We also know the history of Food and Drug Administration in the USA. Apart from the letter of any law, a President can appoint an administrator who neglects some issues and prefers others, and the Congress can also set funding levels that make implementation and enforcement impossible.[4] We do not expect a panacea from the FDA, but it would be good if a law did more than create ''FDA approved'' traditional cigarettes.

Snus can help reduce smoking risks for individuals and society

The evidence from Sweden is persuasive that a certain type of smokeless tobacco is much safer than cigarettes for individuals and probably safer for society.[1] Some will argue that harm reduction products like snus are unnecessary, since comprehensive prevention and cessation programmes (like those in Massachusetts and California) have driven down smoking rates. But such programmes cannot be expected to eliminate smoking completely. Some smokers will prefer not to stop using nicotine. Some youth will take up smoking no matter what the public health community does (perhaps, to spite it). Harm reduction products like snus offer these individuals an alternative to cigarettes.

Cigarettes are *the* critical ''gateway'' to cigarettes

You, lawmaker, will hear that smokeless tobacco may be a causal gateway to cigarettes (for example, Tomar[5]), although there is significant evidence to the contrary.[1 6 7] Note that a dramatic increase in snus use in Sweden did not lead to increased smoking. *The major ''gateway'' to adult cigarette smoking is a cigarette itself*. A high risk child would be better off using snus than cigarettes, if the child is determined to use tobacco.

You, lawmaker, should take steps now to stop misinforming the public; later, don't allow legislation that prohibits comparing the most dangerous products to the least dangerous products

Today, you could have a staffer call the National Clearinghouse for Drug and Alcohol Information (a government agency) and ask that its website stop misinforming the public that smokeless tobacco is just as dangerous as cigarettes.[8] In general, the message that ''no tobacco product is safe'' is widely known. Even Philip Morris is now also promoting that ''no cigarette is safe'' in TV commercials and on its website.[9] The ''not safe'' message is easy for agencies and industry lawyers to agree upon. Tackle instead the messages about safer products of greater interest to consumers.

Some proposed legislation[3] has included a prohibition on comparisons across product types. To provide the most useful information to consumers, information comparing the most

dangerous products (cigarettes) to much less dangerous products (snus, medicinal nicotine) is an essential component of legislation. By limiting comparative claims only to like products (cigarettes to cigarettes, smokeless to smokeless), the consumer is prevented from understanding where maximal harm reduction lies.

Individuals who do use or who are thinking of using cigarettes have a right to know that smokeless products are safer than cigarettes.[10–12] Lawmaker, you will have heard the old saw about increased use of a safer product being *potentially* able to lead to greater risk for society. For large reductions in risk, it is possible, or even likely, that use would not increase to a level that could cause net societal harm.[13] Snus and medicinal nicotine are so much safer than cigarettes that net societal harm is very unlikely.[1 12 13] Public health concerns should trump individual rights only when there is clear and convincing evidence of harm to society. Lacking that evidence, individual rights should prevail.[12 14]

Some public health advocates have proposed that no harm reduction product shown to increase overall harm to society should be allowed on the market—even if it is shown to reduce individual health risks (for example, Stratton *et al*[15]). At least one FDA bill[3] has incorporated such a clause. Philip Morris has prepared a detailed brief arguing that such a clause would be illegal (unconstitutional) on several grounds, one being the principle of free speech.[16]

Don't feel compelled to give FDA regulation over tobacco

While working toward a law to regulate tobacco, don't forget that you should still support other broad based tobacco control efforts—FDA legislation is not the be-all and end-all of tobacco control. The wrong kind of compromises on legislation could cause more harm than good and could favour the cigarette industry at the expense of the public health. Any attainable law may be worse than no law.

Remember the contributions of snus to reducing smoking caused disease arose outside of FDA-type product regulation.

Imagine a brother who has smoked for years and been trying to quit smoking for years. What follows is what we would tell this hypothetical brother about snus and harm reduction. We feel a special urgency to help him as much as possible.

WHAT TO TELL YOUR BROTHER ABOUT SNUS (IN ORDER)

1. *Quit using any tobacco, if you can*. This would provide the greatest health benefit.
2. *Try medicinal nicotine*. If possible, substitute cleaner forms of nicotine. Don't be afraid of nicotine—be afraid of smoking.
3. *Try snus as the Swedes do*. Try snus as a complete substitute for smoking and in the way the Swedes do. That Swedish snus is much safer than cigarettes is supported by ample scientific evidence.

- Use a product meeting or exceeding the Gothiatek standard
- Buy it fresh from a retailer who refrigerates the product
- Use snus that comes in the individual serving pouches or sachets
- Place the snus under your upper lip, toward the front of your mouth.

In the USA, moist snuff is placed between the cheek and gums in the lower rear of the mouth. Swedes have very low needs to expectorate compared to US snuff dippers. It is unknown if there are toxicological consequences from the excess salivation and increased swallowing of tobacco juice in the USA. Because of the lack of spitting, few people will know you are using snus. You should not care that snus has a different taste and mouth placement than US snuff: you are switching to snus from cigarettes, not US snuff.

4. *Next try medicinal nicotine*. Try to switch to cleaner forms of nicotine when you feel able.
5. *Next stop using any nicotine if you can*. But you should keep using medicinal nicotine, or even snus, as long as you need to, to keep you from smoking.

If you learn that your lawmaker is an inveterate smoker, please consider treating him as you would your brother.

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PostScript

LETTERS

Transfer of particulate matter pollution from smoking to non-smoking coaches: the explanation for the smoking ban on Italian trains

A major struggle is growing in Italy between the pro- and anti-tobacco lobbies concerning the voluntary decision of Trenitalia, the corporation that manages the long distance, reservation only Eurostar (ES) trains, which introduced a complete smoking ban starting from March 2004. However, even non-smokers are doubtful about a total ban and wonder whether this decision could be an excessive penalty for smokers on these trains, with journey times of up to six hours.

Before the ban, ES trains had two smoking coaches (the first and the last carriages out of a total of 11). The smoking coaches were separated from the adjacent non-smoking carriages by automatic sliding doors and each coach was equipped with a separate HVAC (heat, ventilation, and air conditioning) system.

To verify air quality in ES trains before the ban, we measured the concentrations of fine particulate matter (PM2.5) in the different coaches during a trip from Milan to Rome. PM2.5 comprises respirable particles < 2.5 μm in diameter, which represent a risk factor for respiratory and cardiovascular diseases and for lung cancer.[1 2] PM2.5 is also used as an official index of outdoor air quality (15 μg/m^3 as a maximum yearly average level of PM2.5 is the present US limit). It can be measured easily in real time (every two minutes) with portable instruments, and is a recognised although non-specific marker of environmental tobacco smoke (ETS).[3 4]

As shown in fig 1, the first measures taken in a non-smoking coach positioned in the centre of the train detected PM2.5 concentrations mainly within outdoor limits (15 μg/m^3), taken as reference for acceptable air quality, with the exception of a brief small peak around 7 pm. After transfer to the non-smoking coach next to the smoking car, a dramatic increase of PM2.5 concentrations was found with a peak of 180 μg/m^3. As expected, measurements taken in the smoking coach revealed exceedingly high values of PM2.5 that reached a maximum of about 250 μg/m^3. Returning to the non-smoking coach far from the smoking ones, PM2.5 concentrations returned to normal values.

Our data show that present HVAC equipments cannot preserve non-smoking coaches from ETS pollution deriving from smoking cars, which is transferred mainly to the adjacent cars, but can reach coaches further away, as shown by the isolated PM2.5 spike recorded at 7 pm. After these results were confirmed in supplementary monitoring in collaboration with Trenitalia, the company's management took the decision to issue the smoking ban.

Passengers of ES trains who choose to sit in non-smoking coaches have, for many years, been exposed to a hidden health risk, as these non-smoking coaches have, in fact, been heavily polluted by ETS from adjacent smoking cars. The acknowledgement of these data can be useful for the development of smoking policies on railways in other countries; moreover, if shared by the mass media, these findings could make a ban on smoking on trains more acceptable because such a measure is intended to preserve the health of non-smokers and rail employees, not to be merely prohibitive.

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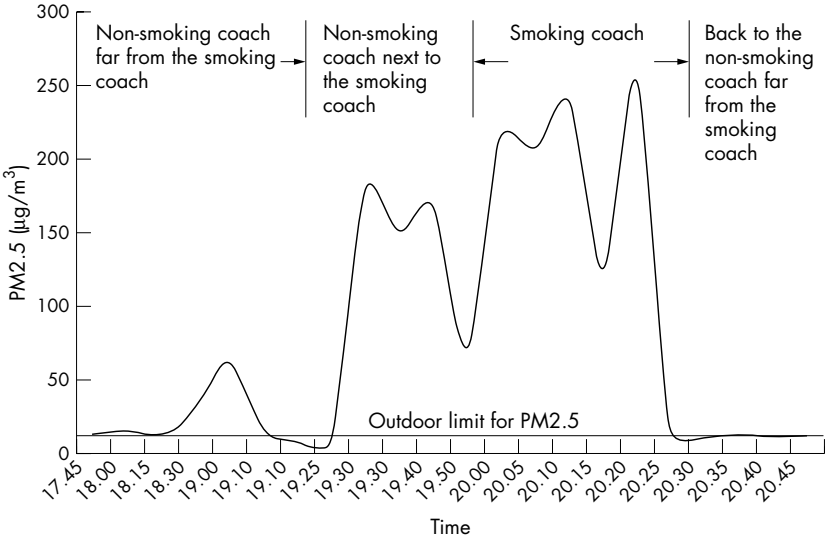

Figure 1 Particular matter concentrations (PM2.5) in smoking and non-smoking coaches on a long distance train.

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Deaths caused by secondhand smoke: estimates are consistent

In 2001 Woodward and Laugesen estimated the number of deaths caused by secondhand cigarette smoke in New Zealand, using an indirect method based on studies of disease specific mortality risks.[1] Most of the relative risks used in this estimation were taken from studies conducted in other countries. We now have an opportunity to check the accuracy of this estimate using a more direct method based on all cause mortality risks taken from a recent New Zealand study.[2]

Hill *et al* compared mortality among New Zealand never smokers living with cigarette smokers with that of never smokers in non-smoking households.[2] They report adjusted mortality rate ratios for 45–74 year olds from two periods: 1981–4 and 1996–9. For men the ratios were 1.17 (95% confidence interval (CI) 1.05 to 1.30) and 1.16 (95% CI 1.04 to 1.30) respectively; for women 1.06 (95% CI 0.97 to 1.16) and 1.28 (95% CI 1.16 to 1.42). Assuming a rate ratio of 1.15 constant over age and sex, and applying this to 1996 census counts of never smokers living in households with at least one smoker (approximately 55 340 adults), we estimate that passive smoking accounts for 73.5 deaths per year in the 45–74 year age group.

We have repeated the calculations conducted by Woodward and Laugesen, restricting the analysis to deaths caused by exposures in the home, and including only the age group 45–74. The base is again the 1996 New Zealand census population. The results are 2.7 lung cancer, 57.9 heart disease,

and 46.3 stroke deaths per year (106.9 in total). This estimate includes never-smokers and ex-smokers (compared with the study by Hill *et al*, which was restricted to lifetime never smokers[2]). In their 2001 paper, Woodward and Laugesen undertook sensitivity analysis showing that the overall number of deaths was reduced by 45% if ex-smokers were excluded.[1] In this instance, 106.9 would come down to 58.8 deaths per year. Note that this does not include deaths that may be caused by other passive smoking related conditions (such as chronic lung disease or other cancers). Thus, 58.8 deaths per year is in close agreement with the estimated 73.5 deaths based on the study by Hill *et al*.[2]

Both estimates of the number of deaths caused by passive smoking have their weaknesses—for example, Hill *et al* had to assume that living with a smoker was a reliable measure of exposure to second hand smoke.[2] As a result, these calculations should be viewed as a guide to, not a precise measure of, the burden of disease. But it is encouraging that two different methods of estimating attributable deaths in the same population produce broadly consistent answers. It should add to the confidence with which policymakers, health educators, and others use estimates of the passive smoking burden, while conscious of the significant uncertainties that accompany all calculations of this kind.

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CORRECTION

The publisher would like to apologise for the miss referencing in the Editor's choice, Chapman S. Harm reduction (*Tobacco Control* 2003;**12**:341). The references list should have read:

1 **Foulds J**, Ramstrom L, Burke, *et al*. effect of smokeless tobacco (snus) on smoking and public health in Sweden. *Tobacco Control* 2003;**12**:349–59.
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