

How to End the Tobacco Epidemic What Tobacco Control Strategy Should be Used?

"If public health is to be the centerpiece of tobacco control - if our goal is to halt this manmade epidemic - the tobacco industry, as currently configured, needs to be dismantled."

DAVID KESSLER,
(former FDA commissioner, 2001)

INTRODUCTION

We know that cigarette smoking is highly addictive, widely prevalent and very risky, since one in two smokers end up dying of a smoking related disease.

The decrease in the smoking population occurring in some developed countries (USA, UK, Australia, New Zealand, Sweden, etc.) induces to a sense of victory in the fight against multinational tobacco companies. However, the big companies know they are winning.

In less than 20 years (1992-2010) Philip Morris International (PMI) more than doubled its cigarette sales and proportionately its profits (from 400 billion to 900 billion), holding 24.4% of the global market. Likewise for the rest of the four Big Tobacco: British American Tobacco (BAT) sells 708 billion (20.5 % market share), Japan Tobacco/Japan Tobacco International (JT/JTI) 563 billion (16.2%) and Imperial Tobacco 309 billion (8.6 %). The four Big Tobacco have 69.7 % market share of global cigarette sales, (1) although the China National Tobacco Corporation (CNTC) (state tobacco monopoly in China) sold 2290 billion cigarettes in 2009, 2.5 times more than the world market leader PMI, and increased its sales by 40 % over the last seven years. (2)

While growing tobacco still remains a social and economic challenge for small producers' stability, it continues yielding huge profits to the handful of tobacco transnational companies that buy and process it. The last two decades were marked by a large number of privatizations, mergers and acquisitions that reinforced the concentration on the four largest Big Tobacco. (1) In turn, the Chinese state poisons its people because it generates huge tax revenues; in 2005 the sale of cigarettes implied 32500 million dollars in taxes and profits, approximately 7.6 % of the total state income. In poor provinces such as Yunnan, more than 50 % of all government revenue depends on tobacco sale. (2)

In our world there are about 1300 million smokers, about 20 % of the world population. But what is

significant is that 80 % of these 1300 million people live in low to middle income countries. In three countries, Russia, Indonesia and China, the prevalence of male smokers is 60% and the number of smokers has increased markedly. One out of two subjects of the world's smoking population is in these three countries (Russia, Indonesia and China) and one out of three in China.

If the current trend continues in this century, even though people think we are beating tobacco companies, the reality is that cigarettes are predicted to kill 1000 million people, while in the last century (XX) 10 times fewer people died, only 100 million. (3)

The Oxford Group epidemiologists have estimated the distribution of deaths during the first century of the second millennium: 150 million would occur until 2025, in the following 25 years (2026-2050) there would be another 300 million deaths and in the second half (2051-2100) the remaining 550 million would occur. (4)

So, in the coming years mortality will continue to increase from 5.4 million in 2005 to 6.4 million in 2015, to 8.3 million in 2030. (5)

To prevent a substantial proportion of the 450 million tobacco deaths before 2050 would require the cessation of tobacco consumption of the already smoking adults, as smoking deterrence of new generations would avoid deaths that will occur after 2050. Therefore, if our only goal is to prevent children born in this century from smoking, we will only have a small drop in tobacco mortality during the first 50 years.

Therefore, to reduce mortality from tobacco on our contemporaries, we must have serious endgame programs that focus on tobacco as a systemic problem, changing the structure of the socioeconomic aspect produced by tobacco supply, instead of the traditional demand of individual behavior, by addressing health and political implications, reframing strategic discussions, advancing in social justice to prevent its burden from increasingly falling on the lower income sectors and fundamentally to change the consideration given to the use of tobacco and the tobacco industry.

But achieving the end point is not, or should not simply be doing more of the same, as it requires a real commitment of public policy to achieve a true end, which is quite the opposite of visualizing the public health challenge as a war of attrition, with gradual changes that cannot solve this public health emergen-

cy, at least in the absence of an end point vision when finally the threat will be eradicated. Thus, the vision and objectives are somehow more important than the specific tactics. (6)

DAMAGE OF NICOTINE AND TOBACCO

The analysis is anchored in two realities: firstly, humans are susceptible to nicotine addiction and secondly, tobacco cigarette is the most attractive and modern historical method of delivering nicotine to those who use it, but unfortunately it is also the one that produces the most damage. (7)

We should recognize that cigarettes represent 96 % of manufactured tobacco sales. In developed countries, almost 1 out of every 5 deaths annually are caused by smoking, and about 20 times more people have a serious illness caused by smoking, most of which are chronic respiratory diseases. (8)

Tobacco smoked as a cigarette delivers nicotine and creates an addictive habit -as powerful as that of cocaine and heroin-, but in addition, cigarette smoke contains hundreds of toxic and carcinogenic substances that are primarily responsible for the harmful health effects of smoking, specially lung cancer, chronic obstructive pulmonary disease (COPD), heart disease and stroke. (3)

Therefore, because cigarette smoke produces two different effects, addiction to nicotine and damage to health, there must be a spectrum or continuum between maintaining the addictive effect and minimizing the damage. At one end is a cigarette smoker with both maximum risks and on the other end of the spectrum are nicotine medical products such as patches or gums and in the future pure nicotine inhalers which keep the addiction but would abolish death risk. Among the intermediate states would be smokeless tobacco as the Swedish "snus" (moist tobacco absorbed in the mouth) that would decrease by 90 % the risk of disease (5, 9, 10) and nicotine electronic cigarettes. (10, 11)

Michael Russell wrote nearly fifty years ago that people smoke because of nicotine but die due to tar. (12)

As a consequence of this duality, some believe that tobacco addiction should be eliminated along with the other diseases caused by smoking and therefore only consider smoking cessation as a measure against tobacco addiction. On the other hand, others believe that addiction caused by tobacco has a much lower priority for elimination and are prepared to consider tobacco addiction (nicotine actually) as a tool to "reduce harm" from the other tobacco diseases that cause disability, morbidity and mortality. (13)

The fundamental problem of the current cigarette industry is the nexus linking profit and unwanted damage (externality) due to tobacco cigarettes produced by Big Tobacco: the more they sell, the more profit they will have, hence, many more people will undergo disease and death. This is the link that must be broken by changing the incentive structure operat-

ing in the current tobacco industry. (14)

It is a perverse public health policy one that makes an addictive drug like nicotine available to everyone (including children and adolescents) in its most harmful form -the cigarette-, which is typically cheap because of subsidies to the tobacco crops, and widely available and exhibited everywhere, even in the vicinity of schools, and which in many parts of the world (including the United States) comes with minimal information about health risks. It is time for the regulation of all nicotine supplying products by a single autonomous agency, to allow an inversely proportional access to the damage they cause, the opposite of the current situation. (3, 8)

BEYOND THE FRAMEWORK CONVENTION ON TOBACCO CONTROL: CONTROLLING THE DEMAND OR CONTROLLING THE OFFER?

The full and effective implementation of the Framework Convention on Tobacco Control, (FCTC) would lead to a "new world order" in tobacco control. But the reality is that many countries are just beginning its implementation and possibly no country has fully applied it. But a few countries, such as Australia, New Zealand, Canada, Sweden and a few U.S. states are beginning to look beyond the treaty. (15)

Within the epidemiological framework describing the relationship of "smokers" (host), cigarettes (agent), big tobacco companies (vector) and the environment, both the agent (cigarettes) and the vector (tobacco companies) are manmade and, in theory, controllable up to their extinction, to end the disability and death toll of tobacco epidemic. (16)

So far, the research community has focused primarily on the host (smoker) and the agent (cigarette) but not on the industrial vector of the disease. (17) The political consensus achieved in the international arena, as reflected in FCTC agreed measures, are focused on reducing the demand side represented by the smokers (host), but a strong endgame policy has not yet emerged from the supply side, the dismantling of Big Tobacco, (18) as requested by David Kessler, former FDA commissioner, when he concluded that "small steps are not enough to restrict the power of tobacco companies, or the damage they inflict." (19)

The fact that tobacco smoking products are allowed in all countries except Bhutan (the 2004 law ended the sale of tobacco, but not its import and use), is an anomaly supported by a historical precedent and by commercial and political self-interest. If cigarettes were invented today, they would undoubtedly be banned, as happens with the new recreational and addictive psychoactive drugs that harm people. (20)

So why not make it simple and legislate to ban the use of the addictive drug that causes more deaths in the world, since in the communication of the Global Burden of Disease 2010, (21) cigarette smoking was the second most important risk factor in the world (second only to hypertension and above any other

external cause) and in 24 countries was the main cause of disability-adjusted life-years lost. (22)

Because, first of all, the substantial minority of the smoking population of all countries would oppose, claiming it would be a restriction to their freedom of choice. As would invoke sectors defending existing vested interests, the eternal opponents to a state, called by them paternalistic interfering with adult choices. Secondly, because many deceitful governments would also be reluctant to part with substantial tax revenues obtained from smoking tobacco products. Thirdly, because one would expect that the tobacco industry and their lawyers, with their immense economic power, would conduct an effective campaign, well organized and lavishly funded, opposing to the policy and lobbying with government officials. And fourth and lastly, because smoking abolition by a legislative ban would create a huge black market. (20)

These would be the reasons why an immediate removal by a *de jure* ban is not at present on the public agenda. However, the extinction of the smoking habit by a *de facto* ban, resulting from a combination of active policies that would render tobacco sale and smoking unsustainable would mark an endpoint program, with a foreseeable future ending.

Let us think for a moment in the economic power against which we must fight; for example, the market value * of the global private tobacco industry is approximately US\$ 599000 millions, (23) although about 40 % of cigarettes sold worldwide are manufactured by tobacco companies that are owned by the state and not listed in the market.

In turn, it causes the world (through illness and death) almost 1% economic loss of the Gross World Product, which is more than the market capitalization of all private tobacco companies. If we accept as valid a recent Canadian government study reporting that the present value for a smoker to quit smoking at half-life is 421000 Canadian dollars (US\$ 400000), (16) the cost of 1.5 million smokers to quit the addiction equals the total market value of tobacco private companies. **

WHAT ARE THE STRATEGIC PLANNING ELEMENTS TO END CIGARETTE SMOKING?

When it comes to endgame, Ruth Malone eloquently states: "An endgame addresses tobacco as a systemic issue, rather than an individual behavior; it addresses health and political implications; reframes strategic debates; advances in social justice; and is fundamentally transformer in changing how tobacco use and the tobacco industry are considered... Gradual changes cannot fix this public health emergency, at least in the absence of an endpoint vision when the threat will be eradicated. Thus vision and goals are in some

way more important than specific tactics. What is still surprising is the degree in which the social construction of tobacco as normal and desirable, accomplished over the last century by a shrewd industry, still blinds many to the urgency of our task and to the inherent contradictions in our own messages about tobacco"(6)

EXTENSION OF THE FRAMEWORK CONVENTION ON TOBACCO CONTROL PROVISIONS

We may consider modest FCTC extensions whose implementation would not be costly. Policies in this category such as: banning display of cigarette packs in retail locations, far from schools and blank cigarette packs or with 95 % of graphic warnings about the damage to health, would be simple extensions of the ban on the displayed and promoted advertising at eye level. The restriction on the packaging and display are publicly accepted for other products such as prescription drugs. (15)

It is forbidden to drive and talk on a cell phone due to distraction danger. Smoking while driving, with cigarette maneuvers, smoking and ashes disposal, are unnecessary distractions, increasing 1.5 times the possibility of traffic accidents (24) and also exposing other vehicle occupants, even children, to higher levels of passive smoking. (25)

It is likely that the net effect of these measures added to those of FCTC is slow, but with a steady downward reduction of smoking, so we need more radical approaches to achieve a faster impact such as "harm reduction" with low nitrosamine smokeless tobacco or recreation or therapeutic products with clean nicotine.

THE SCIENTIFIC BASIS OF TOBACCO "HARM REDUCTION"

Tobacco "harm reduction" involves its replacement by much safer sources of nicotine for smokers who are unable or unwilling to achieve abstinence from tobacco nicotine.

In countries where 24% of adults still smoke, with a reduction of the currently achieved 0.2 % per year with conventional measures, it would take many years to reduce smoking prevalence by half. (3) Because it is unlikely that millions of people quit smoking in the near future, we argue, based upon the support of tobacco harm reduction of the American Council on Science and Health, 2006 and the Royal College of Physicians, 2007 (26) that in addition to conventional tobacco control policies, the application of the principles of harm reduction could currently achieve substantial drops in morbidity and mortality caused by the consumption of tobacco cigarettes. However, achieving this risk reduction will require radical structural reform of the ways

* The calculation of the amount of capital corresponding to the 58 companies listed was 598615000000 US dollars on August 27, 2013.

** It results from calculating the total capital of private companies by the cost of one person in Canada quitting smoking: 598615000000 / 400000 = 1.496.538 persons.

in which nicotine and tobacco products are regulated and used by competent authorities.

Most people continue to smoke because they are really “addicted” to tobacco inhaled nicotine, quickly delivering high doses of nicotine to the brain cells, which when occurring at an early age also determines the intensity of the addiction through effects on the number of nicotinic receptor in the brain.

It has not been proved that nicotine has carcinogen activity per se or that it produces COPD, or has effects on cardiovascular risk. Therefore, the risk associated with medicinal nicotine for practical purposes and when compared with smoking, is usually very low or negligible.

Swedish Snus

The snus (oral moist tobacco) of Swedish origin is a product with a low level of nitrosamines; therefore, it does not increase the risk of oral or lung cancer or COPD, although it increases pancreatic cancer, but much less than cigarette; and has also little or no effect on cardiovascular risk. It is estimated that adverse events associated with snus are lower than those associated with smoking by 90 % to 98 %. (10)

Smokeless tobacco products have a history of temporary smoking replacement, going back to coal miners who could not smoke while working for the risk of explosion. In Sweden, a substantial reduction in daily prevalence of smoking in the past 25 years partly appears to be attributable to replacement of tobacco cigarette by smokeless snus tobacco, especially in men.

Assessing the Swedish snus harm reduction in a model for the Australian population, including those who never used cigarettes and smokers, shows a difference in healthy life expectancy range of 5.0 to 2.4 years in men between 35 and 75 years, respectively, and from 4.1 to 1.9 years in women between 35 to 75 years. For snus to produce net harm in men, 17 current smokers who have stopped smoking without snus aid would be necessary to balance the health gain for one smoker who passes to snus. (5)

In a national survey in Sweden, Ramström and Foulds found that among men who used only one aid to quit smoking, 58 % used snus and success among these people was 66 %, significantly higher than those who used chewing nicotine (OR 2.2) or nicotine patches (OR 4.2). They also observed that smoking initiation was significantly lower in men who had started using snus than in those who had not (OR 0.28, 95% CI 0.22 to 0.36). Therefore, they conclude: “The use of snus in Sweden is associated with a reduced risk of becoming a regular smoker and an increased probability of quitting” (27)

In 2008, the European Scientific Committee on Emerging and Newly Identified Health Risks concluded that: “The data from Sweden ... do not support the hypothesis that ... snus is a gateway to smoking in the future.” (28)

In follow-up studies those who make dual use

(smoke and snus) are less likely to achieve complete tobacco abstinence as exclusive smokers (9 % vs. 36 % at 13 years), but it is also less likely that they carry on smoking (9 % vs. 46 % at 13 years); the vast majority (69 %) has stopped smoking or uses snus only. These follow-ups also suggest that the risk to health of residual dual users (the remaining 22%) is lower than that of exclusive smokers. (9)

Electronic cigarettes (e-cigarettes)

The “e-cigarette” was invented by a Chinese pharmacist Hon Link in 2003. It is a battery-powered device that vaporizes a mixture of water, propylene glycol, nicotine and flavoring in an interchangeable cartridge. Inhalation activates a pressure sensitive circuit that heats the atomizer and transforms the liquid into vapor, which is inhaled through the mouthpiece. The vapor is a fine mist without smoke or carbon monoxide, which dissipates faster than smoke. Although due to its shape it mimics smoking, because a light burns at its end during inhalation, with the e-cigarette there is no smoke inhalation (smoking), and instead vapor is inhaled and exhaled (vaping).

Theoretically, delivering nicotine by vaping without the thousands of known and unknown toxic tobacco substances is less harmful than smoking. (29) Regarding the safety of electronic cigarettes, we have a broader knowledge of their chemical components than of around 5300 components of the estimated 10000 to 100000 components of cigarette smoke. The vapor and liquid components of the electronic cigarette detected by gas chromatography are propylene glycol, glycerin and nicotine. Regarding risky components such as nitrosamines, only some studies show traces similar to those of authorized nicotine patches and 500-1400 times lower than combustion cigarettes; the other disturbing element, diethylene glycol, was not detected in most studies. (9, 29) Although the existing research does not warrant the conclusion that e-cigarettes are safe in absolute terms and clinical studies are needed to assess their long-term safety, the prevalence of the available evidence shows them to be much safer than tobacco cigarettes and comparable in toxicity to conventional nicotine replacement products recommended to help smoking cessation and approved by regulatory mechanisms. (29)

The risk reduction strategy with licensed nicotine replacement products recently announced by NICE (National Institute for Health and Care Excellence) constitutes the first global public health guideline recommending the use of chewable or nicotine patches to patients who think they are not able to quit smoking, to those who want to quit smoking without necessarily giving up nicotine and to them who are not ready to quit but want to reduce the amount they smoke. (30)

The NICE advises doctors to reassure patients that licensed products containing nicotine are “a safe and effective way to reduce the amount they smoke

... either in the short or long term.” They add that they must also reassure them that “it is better to use these products to reduce the amount they smoke than to continue smoking at their current level.”

John Britton, chairman of the tobacco advisory group of the Royal College of Physicians, said: “We should encourage all smokers to take up the opportunities presented by this guideline, and if they can't quit using nicotine altogether, to switch as much as they can to an alternative nicotine product. This guideline has the potential to change millions of lives for the better. We recommend it.” (30)

Researchers like Marisa de Andrade and Gerard Hastings were commissioned by Cancer Research UK to review the literature and consult with experts on tobacco harm reduction and nicotine replacement therapy to identify research questions that need answers about benefits and damage. In a recent publication (May 29, 2013) they urge the government and other regulatory entities to agree to a unified approach on the use and regulation of e-cigarettes and other nicotine products as part of tobacco harm reduction. (31)

In the UK, a growing number of smokers are using e-cigarettes and in the last 2 years the use increased six times, from 2% to 12%. (32)

In a personal survey to 104 experienced electronic cigarette smokers, 78 % had not used tobacco in the previous 30 days, although they previously smoked an average of 25 cigarettes per day and had tried to quit an average of nine times before starting to use e-cigarettes. (33)

In a qualitative design group to know the reasons why electronic cigarettes were chosen over other methods to stop smoking, such as nicotine replacement therapy, lack of effectiveness of nicotine replacement therapy to prevent recurrence and the behavioral and social components that enabled them to use the e-cigarette were mentioned. (34)

A study group first performed a pilot study for smoking reduction and cessation due to e-cigarette effect in 40 smokers: at 6 months reductions were more than 50% and abstinence was 55%, with a total drop of cigarettes smoked per day of 88%. (35)

In another study of 14 schizophrenic patients, more than 50 % reduction or abstinence was achieved in 64.3 % of participants at one year. (36)

In a prospective clinical trial, controlled at 12 months (ECLAT) to assess smoking reduction or abstinence, 300 smokers not willing to quit smoking were randomized to 3 cartridges with different amounts of nicotine in an e-cigarette model: Group A (n = 100) received 7.2 mg cartridges for 12 weeks, group B (n = 100) 7.2 mg cartridges for 6 weeks followed by 5.4 mg cartridges for an additional 6 weeks, group C (n = 100) received no nicotine cartridges for 12 weeks. (37)

At 3 months (12 weeks), the reduction or abstinence from smoking was: group A 37 %, group B 37% and group C 25%, which at 24 months was reduced to 23 %, 18% and 16 %, respectively. Rapidly after enroll-

ment, over 50 % reduction in the number of cigarettes smoked was achieved in the three groups, and this was manifested in a significant drop of carbon monoxide emission. An unexpected but interesting finding was that the reduction of cigarettes smoked was not related the amount of nicotine content in the cartridges and that group C, with nicotine-free cartridges, behaved in a similar way to groups A and B with nicotine in most analyses. This suggests that the relationship with tobacco dependence may partly be due to factors other than nicotine and could involve handling rituals and cigarette manipulation, both imitated with the use of the electronic cigarette. (37)

Recently, Bullen et al. randomized 657 adult smokers who wanted to quit smoking to 16 mg nicotine (as many as necessary) e-cigarettes, 21 mg nicotine patches (one per day) or placebo e-cigarettes (no nicotine as many as necessary) in a 4:4:1 ratio, with no other additional support. At 6 months, 7.3% of participants in the e-cigarette group with nicotine had achieved a biochemically verified abstinence, compared with 5.8 % of participants in the patch group and 4.1% in the placebo e-cigarette group [relative risk of nicotine e-cigarettes vs. patches: RR 1.51 (95% CI -2.49 to 5.51) and for nicotine e-cigarettes vs. placebo: RR 3.16 (-2.29 to 8.61)]. Fifty-seven percent participants in the group of nicotine e-cigarettes had reduced tobacco cigarette consumption at least by half, compared with 41 % in the patch group (p = 0.0002) and use of e-cigarettes received greater support than patches. General adverse events were not serious and were the same among the different groups. (38)

Because the number of abstinent observed was much lower than expected, the study was not powered to show superiority of e-cigarette with nicotine. However, despite the remaining doubts, this was a pioneering study which generated new and useful information that in any case supports that for many smokers, the e-cigarette is at least as effective as nicotine patches, more attractive and with a lower cost. These advantages suggest that electronic cigarettes have the potential to massively increase the cessation of smoking and reduce costs for patients and health services. (39)

Britton and Edwards expressed eloquently:

“In the 50 years since the health risks of smoking became widely recognized, the political and public health responses to smoking at national and international levels have been grossly inadequate “ ... A logical harm reduction approach for the millions of smokers who are unlikely to achieve complete abstinence ... is to promote the substitution of tobacco smoking with an alternative, less hazardous means of obtaining nicotine... We believe that the absence of effective risk reduction options for smokers is perverse, unjust and acts against the rights and best interests of smokers and public health. Addicted smokers have the right to choose from a range of safer nicotine products, as well as accurate and unbiased information to guide their choice ... Regulatory frameworks should, therefore,

apply the levers of affordability, promotion and availability in direct inverse relationship to the hazard of the product, thus creating the most favorable market environment for the least hazardous products, while also strongly discouraging the use of smoked tobacco.” (3)

Or as the oldest and most prestigious medical society in the world, the Royal College of Physicians, simply explained : “ Compiled by outstanding experts in the field, this paper argues for harm reduction strategy to protect smokers. It shows that smokers smoke predominantly for nicotine, that nicotine itself is not particularly hazardous, and that if nicotine could be provided in a form that is acceptable and effective as a cigarette substitute it may save millions of lives.” (26)

OPTIONS FROM THE SUPPLY SIDE TO PUT AN END POINT TO TOBACCO INDUSTRY

While governments have imposed behaviors to tobacco companies, the tobacco industry has not aligned its purposes to public health goals.

Tobacco companies are governed by imposition of legal rights and obligations. “Their obligations “ include a responsibility to maximize the financial returns to shareholders and be solely responsible to shareholders, and “their legal rights “ include those given to real human beings as the right to freedom of expression among others; and even when they are owned and effectively controlled by governments (as in China and Japan), the choice has been to focus on monetary targets disregarding individual and public health objectives. From the point of view of public health, they are far from being optimal choices and reflect neglect, inconsistency or even coalition with vested interests on the part of states’ health policy that have not helped to curb the epidemic use of tobacco. (18)

In the past decade several regulatory innovations were proposed as a way of better aligning the industry actions with public health needs, but so far none have been put into operation. These policy suggestions share the goal of providing a supplement, from the supply side, to the conventional strategies of demand reduction, but differ in the assumptions they make and in the regulation and governance approach they take.

These proposals include the “Regulated Market Model “ postulated by Ran Borland in 2003, (14) which suggests transferring the distribution to a monopoly that would operate in the supply chain between free market tobacco companies and retailing, with the mandate to “serve the existing market, but shape it to minimize the damage.” (14) The authority of all tobacco purchase and sale would create the context in which the strength of competition would be redirected to the interest of reducing the damage of tobacco products. (7)

In 2005 the establishment of a “ Non-Profit Company with public health mandate ,” was suggested to

change the economic and legal conditions under which tobacco companies operate and eliminate the tobacco supply system profit, thus achieving the public health objective, that is tobacco elimination.

In 2005 and more completely in 2009, Sugarman describes the use of “Performance-Based Regulations”, blaming the companies of improving public health outcomes and enforcing a legal requirement to reduce the number of people who smoke their products imposing effective financial penalties for those who fail to do so. (18)

The fourth suggestion, made in 2010, is the creation of an independent regulatory agency, the “Office of Smoked Tobacco Regulation” which would reduce the market power of private monopolies, imposing price controls at the level of industries and reducing their financial return.

Another suggestion for 2010 is the “Sinking Lid” proposed by Thomson, which seeks the end of tobacco through the progressive imposition of limits on the amount of commercial tobacco legally released for sale; with a reduction of 5 % the initial volume every two years, the authors predict its elimination in two decades. (40)

The latest proposal is an appeal by Robert Proctor to the “abolition” of commercial tobacco, prohibiting its trade and allowing smokers to grow their own tobacco. He states: “This is the simplest approach to disease prevention and would obviate the need for most of the other solutions.” (41)

As Callard and Collishaw end: “ Health authorities who wish to follow the advice of Dr. Kessler have now to take advantage of various conceptual approaches and can anticipate the generation of new ideas. There may come a time in the search of end point measures when changing the tobacco supply can be included as a policy option. “(18)

CONCLUSIONS

In our society it is increasingly impossible to reconcile the message against smoking, which expresses “ danger: don´t do it” with the ubiquitous availability and legitimacy of tobacco products. The inconsistency with which tobacco is regulated, compared with other much less lethal products, is completely inconceivable.

Faced with this situation, the scheme of only four national policies to eliminate commercial cigarettes in 2020 presented by the “New Zealand Council to Quit Smoking” members is a valuable proposal.

In brief: 1) to raise taxes on all cigarettes equally, 2) to allocate cigarette-sale quotas and lower them gradually to reduce supply, 3) to reduce gradually the nicotine content of the cigarette imposing limits or raising taxes if they failed to comply and 4) to allow the sale of products containing only non-combustible nicotine. As supply is reduced, prices rise and nicotine satisfaction decreases, smokers will stop smoking and the risk of the black market will be minimized.

If everyone was a non smoker (i.e., a historically

non-smoking society), mortality from all causes would be 26 % lower in men and 25 % lower in women. (42)

As stated by Ruth Malone: "The risks of not visualizing an end point are clearly much greater than the risks of attempting any of these solutions and fail ... But it is worth addressing radical ideas, because even short term failures can help to achieve long term objectives: as testimony is the first attempt to achieve smoking sections in restaurants in California, which failed, but started a public conversation which eventually led to 100 % smoke-free spaces. Therefore, we should not exclude too early conversations about more radical end game strategies, even if they are not successful at first." (6)

All agree that the tobacco end point will require continuing, explicitly and aggressively, the policy of facing the standardization of the industry of tobacco, thereby facilitating existing measures and accompanying product changes, limiting retail sales, and eventually phasing out the cigarette market.

Returning to Malone, "... every single policy of effective tobacco control that was once proposed collided initially with skepticism. When people in Richmond, California, demanded smoke-free air in their apartment complexes proposers were told it could not be done. When in charge of flights personnel demanded smoke free airplanes, they were told that smokers would be upset and planes might probably fall. When smoke-free, bars and Irish pubs were promoted their own colleagues mocked. But what seemed impossible happened in all these places." (6)

Things happen because there are groups that face them to make possible what is necessary; the only battles always lost...are those that are not fought.

Dr. Hernán C. Doval^{MTSAC}

Director of the Argentine Journal of Cardiology

REFERENCES

1. Aguinaga Bialous S, Peeters S. A brief overview of the tobacco industry in the last 20 years. *Tob Control* 2012;21:92-4. <http://doi.org/ntm>
2. Wright AA, Katz IT. Tobacco tightrope - Balancing disease prevention and economic development in China. *N Engl J Med* 2007;356:1493-96. <http://doi.org/ffszbj>
3. Britton J, Edwards R. Tobacco smoking, harm reduction, and nicotine product regulation. *Lancet* 2007;371:441-5. <http://doi.org/c6xpr8>
4. Peto R, Lopez AD. Future worldwide health effect of current smoking pattern. En: Koop CE, Pearson CE, Schwarz MR, editors. *Critical issues in global health*. San Francisco: Wiley; 2001. p. 154-61.
5. Gartner CE, Hall WD, Theo V, Bertram MY, Wallace AL, Lim SS. Assessment of Swedish snus for tobacco harm reduction: an epidemiological modeling study. *Lancet* 2007;369:2010-4. <http://doi.org/fb92nh>
6. Malone RE. Tobacco endgames: what they are and are not, issues for tobacco control strategic planning and a possible US scenario. *Tob Control* 2013;22:i42-i44. <http://doi.org/ntn>
7. Borland R. Minimising the harm from nicotine use: finding the right regulatory framework. *Tob Control* 2013;22:i6-i9. <http://doi.org/ntp>
8. Foulds J, Kozlowski L. Snus-what should the public-health response be? *Lancet* 2007;369:1976-8. <http://doi.org/bxct8s>
9. Rodu B. The scientific foundation for tobacco harm reduction, 2005-2011. *Harm Reduct J* 2011;8:19. <http://doi.org/bqzrdn>
10. Luo J, Ye W, Zendehele K, Adami J, Adami H-O, et al. Oral use of Swedish moist snuff (snus) and risk for cancer of the mouth, lung, and pancreas in male construction workers: a retrospective cohort study. *Lancet* 2007;369:2015-20. <http://doi.org/cctqrd>
11. Cahn Z, Siegel M. Electronic cigarettes as a harm reduction strategy for tobacco control: A step forward or a repeat of past mistakes? *J Public Health Policy* 2011;32:16-31. <http://doi.org/fqxjp3>
12. Russell MA. Low-tar medium-nicotine cigarettes: a new approach to safer smoking. *Brit Med J* 1976;1:1430-3. <http://doi.org/flk3g2>
13. Kozlowski LT. Ending versus controlling versus employing addiction in the tobacco-caused disease endgame: moral psychological perspectives. *Tob Control* 2013;22:i31-2. <http://doi.org/ntq>
14. Borland R. A strategy for controlling the marketing of tobacco products: a regulated market model. *Tob Control* 2003;12:374-82. <http://doi.org/bn2zng>
15. Gartner C, McNeill A. Options for global tobacco control beyond the Framework Convention in Tobacco Control. *Addiction* 2009;105:1-3. <http://doi.org/cz5rw5>
16. Callard C, Collishaw NE. Exploring vector space: overcoming resistance to direct control of the tobacco industry. *Tob Control* 2012;21:291-2. <http://doi.org/ntr>
17. Cohen JE, Chalton MO, Planinac LC. Taking stock. A bibliometric analysis of the focus of tobacco research from the 1980s to the 2000s. *Am J Prev Med* 2010;39:352e6.
18. Callard CD, Collishaw NE. Supply-side options for an endgame for tobacco industry. *Tob Control* 2013;22:i10-3. <http://doi.org/nts>
19. Kessler D. A question of intent. A great American battle with a deadly industry. New York: Public Affairs, 2001.
20. Hall W, West R. Thinking about the unthinkable: a de facto prohibition on smoked tobacco products. *Addiction* 2008;103:873-4. <http://doi.org/ddbhr7>
21. Lim S, Vos T, Flaxman AD, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012;380:2224-60. <http://doi.org/j3t>
22. Opie LH. Recording of smoking history in death notification. *Lancet* 2013;382:661-2. <http://doi.org/ntt>
23. Alacrastore. Tobacco Industry Snapshot. <http://www.alacrastore.com/company-index/public/Tobacco-89> (accedido el 27 de agosto 2013).
24. Brison RJ. Risk of automobile accidents in smokers. *Can J Public Health* 1990;81:102-6.
25. Curto A, Martínez-Sánchez JM, Fernández E. Tobacco consumption and second hand smoke exposure in vehicles: a cross-sectional study. *BMJ Open* 2011;1:e000418. doi:10.1136/bmjopen-2011-000418. <http://doi.org/d88nz6>
26. Tobacco Advisory Group of the Royal College of Physicians. Harm reduction for nicotine addiction. London: Royal College of Physicians, 2007.
27. Ramström L, Foulds J. Role of snus in initiation and cessation of tobacco smoking in Sweden. *Tob Control* 2006;15:210-4. <http://doi.org/fmsszg>
28. http://ec.europa.eu/health/ph_risk/committees/04_scenihnr/docs/scenihnr_o_013.pdf
29. Cahn Z, Siegel M. Electronic cigarettes as a harm reduction strategy for tobacco control. A step forward or a repeat of past mistakes? *J Public Health Policy* 2011;32:16-31. <http://doi.org/fqxjp3>
30. Iacobucci G. News: Smokers can use nicotine replacement products to reduce harm, says NICE. *BMJ* 2013;346:13663. doi: 10.1136/bmj.13663.
31. Mayor S. News: Governments must agree unified approach to use of e-cigarettes, report says. *BMJ* 2013;346:13537. doi: 10.1136/bmj.13537
32. Britton J, McNeill A. Comment: Nicotine regulation and tobacco harm reduction in the UK. *Lancet* 2013;381:1879-80. <http://doi.org/ntv>
33. Foulds J, Veldheer S, Berg A. Electronic cigarettes (e-cigs): views of aficionados and clinical/public health perspectives. *Int J Clin Pract* 2011;65:1037-42. <http://doi.org/b23bsx>
34. Barbeau AM, Burda J, Siegel M. Perceived efficacy of e-cigarettes

versus nicotine replacement therapy among successful e-cigarette users: a qualitative approach. *Addiction Science & Clinical Practice* 2013;8:5. <http://doi.org/ntw>

- 35.** Polosa R, Caponnetto P, Morjaria JB, Pape G, Campagna D y Russo C. Effect of an electronic nicotine delivery device (e-Cigarette) on smoking reduction and cessation: a prospective 6-month pilot study. *BMC Public Health* 2011;11:786. <http://doi.org/dhd5vr>
- 36.** Caponnetto P, Auditore R, Russo C, Capello GC, Polosa R. Impact of an electronic cigarette on smoking reduction and cessation in schizophrenic smokers: a prospective 12-month pilot study. *Int J Environ Res Public Health* 2013;10:446-61. <http://doi.org/kjc>
- 37.** Caponnetto P, Campagna D, Cibella F, Morjaria JB, Caruso M. Efficiency and safety of an electronic cigarette (ECLAT) as tobacco cigarettes substitute: a prospective 12-month randomized control design study. *PloS ONE* 8(6):e66317. <http://doi.org/ntx>
- 38.** Bullen C, Howe C, Laugesen M, McRobbie H, Parag V, Williman J, Walker N. Electronics cigarettes for smoking cessation: a randomized controlled trial. *Lancet* 2013 [http://dx.doi.org/10.1016/50140-6736\(13\)61842-5](http://dx.doi.org/10.1016/50140-6736(13)61842-5).
- 39.** Hajek P. Electronic cigarettes for smoking cessation. *Lancet* 2013 [http://dx.doi.org/10.1016/50140-6736\(13\)61534-2](http://dx.doi.org/10.1016/50140-6736(13)61534-2).
- 40.** Wilson N, Thomson GW, Edwards R, Blakely T. Potential advantages and disadvantages of an endgame strategy: a “sinking lid” on tobacco supply. *Tob Control* 2013;22:i18-i21. <http://doi.org/ntz>
- 41.** Proctor RN. Golden holocaust: origins of the cigarette catastrophe and the case for abolition. Berkeley: University of California Press, 2011.
- 42.** Laugesen M, Glover M, Fraser T, McCormick R, Scott J. Four policies to end the sale of cigarettes and smoking tobacco in New Zealand by 2020. *NZMJ* 2010;123:55-67.