This report was written by Ruth Malone, Patricia McDaniel and Elizabeth Smith
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The authors

Ruth E. Malone, RN, PhD, FAAN*

University of California, San Francisco

School of Nursing

Department of Social and Behavioural Sciences

3333 California Street, Suite 455

San Francisco, CA 94118

ruth.malone@ucsf.edu

Patricia A. McDaniel, PhD

University of California, San Francisco

School of Nursing

Department of Social and Behavioural Sciences

Elizabeth A. Smith, PhD

University of California, San Francisco

School of Nursing

Department of Social and Behavioural Sciences
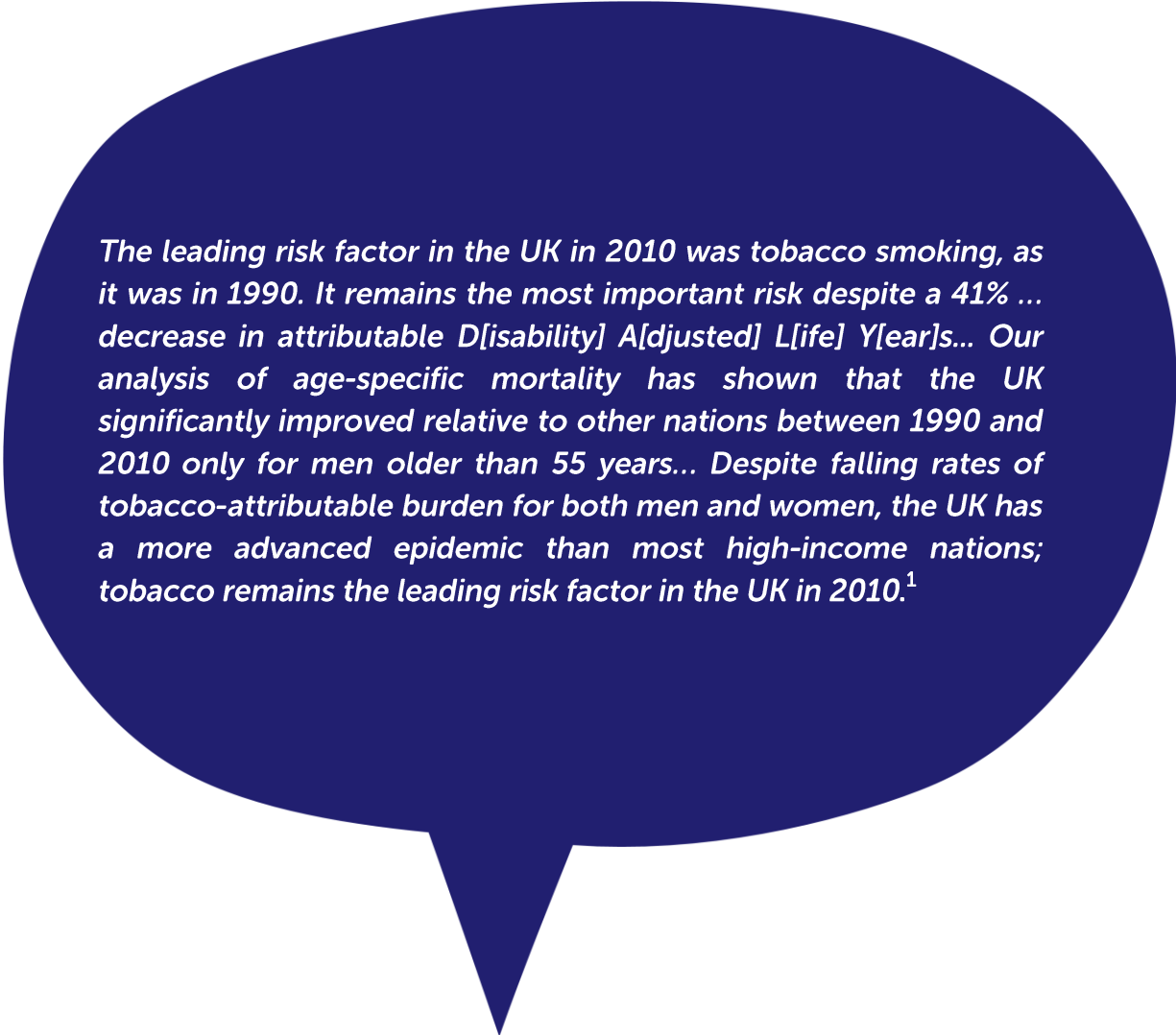

*Corresponding author

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The leading risk factor in the UK in 2010 was tobacco smoking, as it was in 1990. It remains the most important risk despite a 41% ... decrease in attributable D[isability] A[djusted] L[ife] Y[ear]s... Our analysis of age-specific mortality has shown that the UK significantly improved relative to other nations between 1990 and 2010 only for men older than 55 years... Despite falling rates of tobacco-attributable burden for both men and women, the UK has a more advanced epidemic than most high-income nations; tobacco remains the leading risk factor in the UK in 2010.[1]

Executive Summary

The tobacco disease epidemic is an industrially-produced phenomenon of the last century. The vector of this epidemic is an industry that aggressively promotes the use of deadly products and obstructs public health measures. This creates dynamics that require extending the disease prevention and reduction foci beyond the physiological and behavioural aspects of disease to include the "upstream" realms of policy and community norm change. There is an emerging consensus, supported by research, that continuing with present measures alone will not be sufficient to contain the epidemic. Thus, the idea of planning for an endgame has recently gained traction in the global public health community.

Endgame discourse centres around the idea that it is necessary to move beyond a focus on tobacco *control* (and its concomitant assumptions that tobacco is here to stay and that regulating the time, place and manner of its use is the policy objective) toward a focus on planning how to reach a *tobacco-free future.* Endgame initiatives are being discussed globally and some countries regarded as tobacco control leaders are instituting endgame planning. For the purposes of this report, we define tobacco endgame thinking as follows: *Initiatives designed to change/eliminate permanently the structural, political and social dynamics that sustain the tobacco epidemic, in order to achieve within a specific time an endpoint for the tobacco epidemic.*

At this point, "endgame thinking" is about refocusing the discussion toward developing a plan for ending the epidemic. Thus, the endgame is not yet about any *specific* prescription for policy action—and in fact, endgame planning may play out very differently in different countries.

Major advances in tobacco control have been achieved in recent years, particularly in countries signing and ratifying the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC), adopted in 2003 and ratified as of this writing by more than 170 countries, including the UK in 2004. Key components of FCTC implementation include protection of public health and tobacco control policymaking from tobacco industry interference (Article 5.3), banning tobacco advertising, promotion and sponsorship (Article 13), increasing taxes and raising the price of tobacco (Article 6), and instituting smokefree policies to protect non-smokers (Article 8), among others. Some pragmatists argue that continuing to implement these key measures will eventually result in tobacco use prevalence so low that the epidemic is virtually eliminated. Implementation and better enforcement of measures proven to work, they argue, is the answer, and this should be the current focus. In this view, envisioning endgames may divert resources and distract from more immediate work that is politically possible to achieve within the next few years.

Endgame proponents, in turn, argue that we should indeed continue to implement all of these proven tobacco control measures while also preparing for the next set of priorities by explicitly defining an endgame as our goal. The failure to set specific targets by mapping backward from an endpoint we wish to achieve in the future will unnecessarily prolong the epidemic and contribute too many more preventable premature deaths.

This report reviews the existing and rapidly-emerging literature on tobacco endgames, presents case studies of jurisdictions regarded as leaders in moving toward an end to the epidemic, and discusses key strategic issues related to endgame planning for the UK. It concludes with a set of short-term and longer-term recommendations designed to guide tobacco control policy thinking and initiatives in the UK toward an appropriate tobacco endgame.

Endgame proposals currently under discussion focus on the product, the user, the retail level, and the market system. Product-centred ideas include regulating nicotine levels to make cigarettes non- or less addictive, redesigning the cigarette to make it unappealing to smoke, banning the commercial sale of combustible tobacco, or placing combustible cigarettes at a regulatory or market disadvantage compared to non-combustible, "cleaner" nicotine products. User-centred endgame proposals include requiring smokers to obtain government-issued licences or doctors' prescriptions in order to purchase tobacco. At the retail level, researchers have proposed licensing requirements, outlet restrictions, product display bans, and price controls; restricting sales by year born; and standardized packaging. Market-centred endgame proposals envision transforming the supply side by assigning distribution and/or manufacture of tobacco products to a single agency with a health-promotion goal, establishing a steadily declining quota on the import and manufacture of tobacco products, or capping the maximum wholesale price of cigarettes.

While the UK has been a global leader in certain tobacco control policies, most notably in offering smoking cessation services, there is much to learn from other countries that have explored endgame scenarios. To date, Scotland is the only UK jurisdiction to have set a target of achieving smoking prevalence of 5% or less by 2034.

For example, **Australia** has led the world in becoming the first country to require tobacco products to be sold in plain, standardised packaging. Although there is no official endgame plan as such, the Australian federal Government has set a goal of reducing smoking prevalence to 10% by 2018 (from 17.5% currently); informants stressed that this prevalence should be achieved across all demographic groups. Informants were generally of the opinion that strengthening policies known to work such as raising taxes, denormalisation, and cessation help should be the main focus of current activity. Other options thought worth considering included banning menthol or other flavourings, reducing nicotine content in cigarettes, and banning filters. Most informants agreed that eventually combustible cigarettes should be available for purchase only on a much more restricted basis.

Canada has achieved reductions in smoking through a number of measures but its main policy innovation was being the first country to require picture-based health warnings on cigarette packs in 2000. Plain packaging is seen as the logical next step while other possible measures include greater controls on retail sales, for example, increasing the price of retail licensing or reducing the number of outlets. Informants thought that successful tobacco litigation at the provincial level could result in the federal government giving greater consideration to endgame proposals.

Finland has a long history of tobacco control, being one of the first jurisdictions to implement a comprehensive package of measures through its Tobacco Control Act of 1976. It is also a leader in endgame thinking, formalised through the passing of the 2010 Tobacco Act which commits the country to the goal of eliminating tobacco use. Crucially, the tobacco industry has a very negative public image in Finland and industry representatives are not allowed to meet with government officials. Most informants did not support harm reduction, preferring instead to work towards the goal of a nicotine-free Finland.

Endgame discussions in **New Zealand** began in the early 2000s prompting health campaigners to advocate for a smokefree New Zealand and the government's formal adoption of the goal to be smokefree by 2025 (defined as less than 5% smoking prevalence). Many campaigners believe this has galvanised tobacco control efforts, for example, through dramatic increases in tobacco taxes and moves towards adopting standardised packaging. There were mixed views on the pros and cons of harm reduction approaches, particularly as regards the use of electronic cigarettes.

Singapore was the first nation to ban tobacco advertising in 1971 (across all media) and one of the first to ban smoking in public places. At least one local neighbourhood has pledged to become totally tobacco-free (including inside private residences) which appears to have popular support. A key component of Singapore's endgame thinking is the Tobacco Free Generation proposal which would ban the supply of tobacco to anyone born after the year 2000.

With an adult smoking prevalence of just 12.7%, **California** has the second-lowest adult smoking prevalence of any US state, and has achieved significant reductions in smoking largely due to its 20-year plus tobacco control programme funded through dedicated tobacco taxes. Success has been achieved through a combination of community-based coalition work for smokefree and other policies at local levels, and mass media campaigns, particularly with a focus on tobacco industry denormalisation. The programme has never had a major focus on smoking cessation, but has achieved significant increases in cessation through a focus on changing social norms. For the next 10 years, it's envisaged that the programme will continue with an emphasis on social denormalisation and regulating the retail sector.

For the UK, strategic considerations in endgame planning include how to frame and implement a legitimate harm reduction strategy while sustaining a cohesive tobacco control community, how to navigate EU and cross-border issues, how tobacco companies may respond, how to sequence endgame measures, and how to translate measures for the UK context that have proven successful in other places.

In addition to continuing, sustained work to implement all provisions of the WHO FCTC, the UK should consider initiating the endgame planning process for tobacco.

Recommendations

These recommendations are proposed for closer consideration in UK end game thinking. They have been selected and adapted from the various endgame proposals to be the most relevant for the UK context.

All recommendations in this report are predicated upon the assumption that the UK continues to work aggressively to implement all provisions of the WHO FCTC. The report's focus on endgame planning is not intended to supplant current initiatives, but to focus longer term planning efforts toward ending the tobacco epidemic that was created during the last century. Recommendations are clustered below into two sections, representing shorter-term and longer-term recommendations to engage the UK in endgame planning.

Near Term Recommendations

1. Develop an endgame dialogue, narrative, and communications plan

    a. Convene a summit to develop a comprehensive, integrated tobacco endgame strategic plan and timeline and prioritize research, education and practice needs. Without an explicit engagement with the idea that an endgame for tobacco is possible, such an outcome cannot be achieved.[2]

    b. Develop, test and fund a phased, sustained mass media-supported tobacco industry denormalisation campaign aimed at laying the groundwork for future endgame initiatives.

    c. Develop effective messaging to engage community coalitions, policymakers, and other target audiences by characterizing current tobacco control policy initiatives as part of long-term endgame planning.

    d. Fund endgame strategic planning research and evaluation studies.

2. Take specific actions to constrain the tobacco industry

    a. Fully integrate throughout government strong, effective measures to implement WHO FCTC Article 5.3, in order to protect public health policymaking from tobacco industry interference. This should at minimum include transparency/disclosure provisions regarding policymaker meetings with the tobacco industry and enhanced tobacco industry monitoring and surveillance programs.

    b. Withdraw any tax incentive for tobacco marketing (40% of spend reportedly currently deductible).

c. Establish universal registration of tobacco retailers in order to better track compliance with existing policies (e.g., prohibitions on underage sales).

d. Combine comprehensive regulation of e-cigarettes with equally comprehensive and specific plans for correspondingly reducing the accessibility, affordability, and attractiveness of conventional cigarettes and roll-your-own tobacco.

Longer Term Recommendations

3. Create a tobacco regulatory authority with monitoring and regulatory powers, authority to set price floors and caps, control marketing, fund research, and set endgame targets, implementing additional tiered/phased measures to meet them. The creation of such an agency would ensure consistent goals and strategies throughout different arenas, which is often lacking (e.g., the goals of agencies designed to support trade and industry may conflict with those designed to support public health).

4. Develop incentives to gradually reduce the number and density of tobacco retail outlets, perhaps by providing incentives to retailers who agree to end tobacco sales or through charging an annual fee for tobacco retailer registration, increasing or decreasing it annually based on sales volume.

5. Create a national plan for addressing gradual reductions in tobacco company workforce and tax receipts.

Conventional cigarettes are fundamentally defective products; it is time to seriously consider what it would take to achieve their eventual phase-out. At a recent meeting in New Delhi focused on the tobacco endgame discussion, WHO Director General Dr. Margaret Chan cautioned that endgame planning itself came with risks. If endgame discussions draw resources and attention away from implementation of all FCTC provisions, they will undermine their own goals. If, however, they serve to focus that current work around creating new and more explicit visions of the concrete possibility of ending the tobacco epidemic, they will advance both. One thing is certain: if the public health community does not begin the endgame conversation, no one else will do so. For the sake of future generations, we should start now.

I. Introduction

Background

The global tobacco epidemic killed some 100 million people during the last century and, if present trends are not arrested, is predicted to kill 1 billion people in the 21st century. In the United Kingdom, tobacco is estimated to cause the premature deaths of more than 100,000 people annually, with many more disabled by tobacco-caused diseases.[3] In addition to primary tobacco use, secondhand smoke causes disease and death in non-users. Non-cigarette forms of tobacco use, while less deadly, also have detrimental effects on health. Tobacco use has major negative impacts on family life and work productivity and negative economic effects on society as a whole through health care costs, environmental cleanup, absenteeism, and other factors.[4] The tobacco disease epidemic is an industrially-produced phenomenon. Despite the fact that people have used tobacco in various ways for hundreds of years, the modern disease epidemic resulted from the industrialisation and aggressive marketing of the cigarette—without doubt the single most deadly consumer product ever made.[5, 6] Prior to the development of the cigarette rolling machine and the advertising innovations pioneered by tobacco companies, lung cancer—the signature disease of the tobacco epidemic in many countries—was so rare that most clinicians never saw a case.[7] Now lung cancer is the leading cause of cancer deaths in the UK and kills more women than breast cancer.[8]

For these reasons, increasingly stringent tobacco control measures have been implemented in many countries and states, including requiring higher taxes on tobacco products, limiting advertising, banning smoking in public places, providing cessation therapies free of charge, and restricting points of sale. The UK has been particularly successful in promoting cessation through mass outreach.[9] Yet tobacco use prevalence remains unacceptably high.

Current tobacco use prevalence in the UK was reported in 2012 at 20%,[10] although among young adults prevalence was higher. This marks a stunning reduction from the 1980 prevalence of 39%. However, the decrease in prevalence is attributed not to more smokers quitting, but to an increase in people who report having never smoked or only occasionally smoked.[10] Thus, even under a best-case scenario, and with its model cessation initiatives, the UK is not on track to achieve an end to the tobacco epidemic. Additional measures are urgently needed, because research shows that even if smoking uptake entirely ceased and cessation increased beyond any targets reached to date, there would still be several decades of high healthcare costs attributable to smoking.[11] Without additional measures, these costs and the preventable suffering they represent will extend even further into the future.

Emergence and history of tobacco endgame discourse

For more than a decade, researchers and policy thinkers in tobacco control have been proposing policy solutions that reach beyond the tobacco control measures currently in widespread use—not to displace but to enhance them with solutions that may prove more definitive in bringing the tobacco disease epidemic to a halt, as has been done with smallpox and, on the products side, with asbestos and harmful pharmaceuticals. Endgame thinking had its genesis in the first policy proposals that went beyond helping individuals quit and

discouraging individuals from taking up smoking—proposals that began to formulate tobacco as a systems problem that required a rethinking of tobacco use. The WHO's Study Group on Tobacco Product Regulation's (TobReg) proposal to mandate toxicant reductions in tobacco products is one such example.[12] Endgame proposals vary widely, from market-based solutions that would create a state-run tobacco market, to product regulation approaches such as uniformly reducing nicotine in cigarettes to non-addictive levels, to user-centred proposals such as prohibiting tobacco sales to those born after a particular year (see Table 1). Taken together, these ideas have begun to form a body of published academic scholarship and research that forms the contemporary endgame discourse within tobacco control.

Endgame discourse centres around the idea that it is necessary to move beyond a focus on tobacco *control* (and its concomitant assumptions that tobacco is here to stay and that regulating the time, place and manner of its use is the policy objective) toward one focused on a *tobacco-free future.*[13] No single definition of an endgame has yet emerged, but most writers on the topic share these assumptions about it: it will involve changing the status quo, including modifying current structural incentives that allow the tobacco epidemic to continue; it will require addressing the addictive nature of tobacco use; and it must explicitly involve addressing the most deadly combustible forms of tobacco products through additional measures, which may include phasing out cigarette sales.[6, 14, 15] Others hope to achieve a virtual ban on tobacco sales through restricting retail outlets and regulating the addictive components of the products, rendering them less desirable and thus reducing demand to a minimum.

For purposes of this report, we define tobacco endgame as follows: *Initiatives designed to change/eliminate permanently the structural, political and social dynamics that sustain the tobacco epidemic, in order to achieve within a specific time an endpoint for the tobacco epidemic.*

Differentiating endgame approaches from middlegame approaches

Major advances in tobacco control have been achieved in recent years, particularly in countries signing and ratifying the WHO FCTC, adopted in 2003 and ratified as of this writing by more than 170 countries, including the UK in 2004.[16, 17] Key components of FCTC implementation include protection of public health and tobacco control policymaking from tobacco industry interference (Article 5.3), banning tobacco advertising, promotion and sponsorship (Article 13), increasing taxes and raising the price of tobacco (Article 6), and instituting smokefree policies to protect non-smokers (Article 8), among others. Strong evidence suggests that these measures reduce harm from smoking and from secondhand smoke. Such measures, which have yet to be fully implemented in many countries, may be characterised as "middlegame" initiatives in that, while they do reduce harm from tobacco use, they do not significantly modify the underlying political, cultural and economic structures that sustain the epidemic.

Some pragmatists argue that continuing to implement these key measures will eventually result in tobacco use prevalence so low that the epidemic is virtually eliminated. Implementation and better enforcement of measures proven to work, they argue, is the answer, and this should be

the current focus. In this view, envisioning endgames may divert resources and distract from more immediate work that is politically possible to achieve within the next few years.

Endgame proponents, in turn, argue that we should indeed continue to implement all of these proven tobacco control measures while also preparing for the next set of priorities by explicitly defining an endgame as our goal. The failure to set specific targets by mapping backward from an endpoint we wish to achieve in the future will unnecessarily prolong the epidemic and contribute to many more preventable premature deaths.

The purpose of this report is to review the global literature and activity related to tobacco control endgame approaches and analyse their potential implications for the UK as the UK contemplates moving from a "middlegame" in tobacco control to an endgame. To assemble this report, we prepared a qualitative synthesis of the published endgame-relevant literature (part II); spoke with researchers, advocates, policymakers and others involved in tobacco control in Australia, New Zealand, Singapore, Finland, Canada, and the US state of California (locations selected because they are widely regarded as leaders in proposing tobacco control endgame initiatives and/or in achieving lower than average smoking prevalence among their populations) (part III) and in the UK (part IV); analysed the potential advantages, obstacles and risks of advocating for a true endgame approach in the UK (part V); and proposed, based on these analyses, policy recommendations for the UK to consider as it moves from a middlegame on tobacco control toward a true endgame (part VI).

II. Research and scholarship informing endgame initiatives

Almost all tobacco control policy initiatives could be said to implicitly have as a goal the dramatic reduction or elimination of tobacco use, but most, as currently defined and implemented, have neither a specific plan to reach that goal, nor any target date. Additionally, almost all tobacco control initiatives can be viewed as steps toward such a goal. In this literature review, we focus primarily on proposals with the explicit goal of eliminating tobacco use.

Because tobacco control endgame discourse is relatively new, and the term itself can include models first proposed long before the term came to be used (e.g., Borland first proposed his regulated market model in 2003[18] and Benowitz first discussed nicotine reduction in 1994[19]), use of established search terms was not a feasible or efficient approach to retrieving the literature. Rather, we took as our point of departure the recent *Tobacco Control* supplement on the tobacco endgame, including those articles and their reference lists and branching outward from there. Our familiarity with the literature allowed us to identify other articles related to our search criteria, as follows: a) describing or discussing endgame-related ideas or proposals; b) research related to such proposals, e.g., measuring levels of public support for or modelling policy impacts of potential endgame scenarios. Because the endgame idea itself remains in development within the discourse of the tobacco control community, this literature review cannot be considered "comprehensive"; however, it represents the most comprehensive survey to date of tobacco endgame scholarship. The proposals are categorised as focusing on the product, the user, the retail level, or the market system. Many are summarised in Table 1.

Product

Regulate nicotine levels to make cigarettes non - or less addictive

Several researchers have proposed regulating nicotine levels in cigarettes or all combustible tobacco products to reduce or end tobacco use among current smokers and prevent new smokers from becoming addicted.[19, 20] Nicotine levels could be reduced gradually, over a period of 10-15 years, to slowly wean already addicted smokers off nicotine.[19, 21] Alternatively, nicotine levels could be established that maintained addiction in current smokers but minimised the possibility of new smokers becoming addicted.[22] At the same time, cleaner alternative nicotine products such as patches and gum could be made more attractive to consumers by reducing their cost and making them more widely available.[21] Eventually, limits could be placed on the marketing and availability of tobacco products to ensure that clean nicotine products dominated the market,[21] or the commercial sale of combustible tobacco could be banned.[23] Before it could be implemented, this plan would require determining the appropriate level of nicotine per cigarette and per day to achieve the desired result, and establishing regulatory authority over the tobacco industry.

Potential dangers include the tobacco industry marketing reduced nicotine tobacco products as "safer," "less harmful," or "government approved," thereby promoting uptake and sustained use of these products and undermining efforts to use them to facilitate smoking prevention and

cessation.[22] Limiting permissible marketing claims for these products would minimise this danger. Smokers of reduced nicotine tobacco might also smoke more or smoke more intensively in order to maintain their usual level of nicotine, increasing their exposure to toxic combustion products[19]; mandated reductions in the levels of toxins in tobacco could reduce this risk. Recent research also suggests that reductions in the absolute amount of available nicotine in a cigarette (as distinguished from current "low nicotine" cigarettes as measured with smoking machines) effectively prevent compensation.[24-27]

Using low nicotine combustible tobacco as "starter" products and then switching to other tobacco products that contain higher levels of nicotine would be another potential problem if nicotine levels were not reduced in all tobacco products.[28] (A robust product testing and enforcement mechanism would also be needed to ensure tobacco manufacturer compliance with the law.)[29] In addition, smuggling from countries that do not regulate nicotine content in tobacco might occur, individuals might find ways to add nicotine to tobacco products, and the tobacco industry might offer new, companion products to sustain nicotine addiction.[28]

Research in the United States (US) on reduced nicotine content cigarettes is limited, but shows that those who smoked such cigarettes for both a short period of time (6 weeks) and a longer period of time (6 months) did not compensate for the reduced nicotine yield by smoking more cigarettes or smoking more intensively.[24-27] Their level of exposure to toxic combustion products also remained stable,[26, 27] or, in some cases, was reduced.[25] This body of research has also found that smokers of reduced nicotine content cigarettes who were interested in quitting reported less nicotine dependence and fewer withdrawal symptoms compared to those taking medicinal nicotine lozenges,[25] and higher levels of abstinence than those relying on telephone quit line services (which included vouchers for nicotine replacement therapy) alone.[24]

Research assessing public support for government mandated reductions in nicotine has focused on the US. Levels of support vary according to the wording of the policy proposal, and, in some cases, by smoking status, race, and education level. A national sample of adult smokers surveyed in 2009/2010 found that 67% expressed support for a law that reduced nicotine content in cigarettes if non-cigarette alternative nicotine sources were easily available.[30] Among a nationally representative sample of adults surveyed in 2010, 46.7% agreed that the government should reduce the amount of nicotine in cigarettes to help smokers quit.[31] Odds of support were lower among current smokers versus never smokers, and higher among African Americans (compared with whites) and those with less than a college degree (compared with those with a college degree). A nationally representative 2011 survey of adults found that 51% of nonsmokers and 37% of smokers expressed support for the Food and Drug Administration (FDA) immediately reducing the nicotine content in all cigarettes sold in the US, while only 22% of nonsmokers and 21% of smokers expressed support for a gradual (over 15 years) nicotine reduction.[32] Support was higher for the FDA reducing nicotine content in cigarettes "if it would cause fewer kids to become addicted or hooked on smoking," with 81% of nonsmokers and 74% of smokers supporting such an action. Among racial groups, African Americans expressed the highest level of support (91%).

Redesign the cigarette to make it unappealing

Proctor has proposed raising the pH of cigarettes to 8 or more (its level prior to 19th century advances in tobacco technology) in order to make cigarettes harder to inhale.[7, p. 553] A more acrid smoke that cannot be drawn deep into the lungs could dramatically reduce both the appeal of smoking for new smokers and the risk of lung cancer.[33] Similarly, Peters has suggested banning all nontobacco cigarette ingredients, as a tobacco-only cigarette would be harsh and distasteful, discouraging smoking uptake and encouraging cessation.[34] A ban on menthol, a cigarette flavouring which masks the harsh taste of cigarettes and facilitates exposure to nicotine, has also been proposed in order to reduce smoking initiation and promote cessation.[35, 36] A related idea is to ban filters, which reduce irritation and may make it easier for those experimenting with smoking to become regular smokers.[37]

The US FDA is currently exploring the idea of regulating menthol in cigarettes, and is accepting public comment on the issue.[38] In 2012, Brazil became the first country to ban all flavors, including menthol, and additives in tobacco products.[39] The new law goes into effect in 2014, so its impact on smoking rates may not be felt for some time. Members of the European Parliament recently voted to ban menthol in cigarettes in five years.[40]

Ban combustibles

Banning the commercial sale of cigarettes (or all combustible tobacco) is another endgame proposal. In some scenarios, the ban would be total.[33, 41, 42] The ban could be announced well in advance of implementation, giving smokers time to quit.[34] Alternatively, the government could create combustible tobacco product quotas for tobacco manufacturers and importers, and reduce them by 5% every 6 months, thereby phasing out combustible tobacco sales within 10 years.[43] These quotas could simply be mandated by the government, or the government could establish a quota trading programme for tobacco manufacturers and/or importers (see below).[23] Any pre-existing bans on smokeless tobacco or other nicotine product alternatives could be lifted to offer smokers cleaner nicotine alternatives.[43] In other scenarios, rather than a total ban, cigarette sales would be severely restricted, for example, to state-run outlets.[7, p. 551 14]

A tobacco sales ban raises the possibility of smuggling,[41, 42] albeit less so in island nations like New Zealand with strong border controls. According to Daynard, the problem would be "manageable," as "cigarettes are relatively bulky and hence difficult to smuggle in large quantities, and the demand would be reduced by the availability of legal nicotine delivery devices."[41] In Bhutan, the only nation to ban tobacco sales (in 2004), cigarette smuggling is reportedly "significant."[44] Nonetheless, as of 2011, only 2.8% of Bhutanese used combustible tobacco products, men (4.2%) more so than women (1.9%).[45]

Opponents of a cigarette sales ban point to the failure of alcohol prohibition in the United States in the 1920s as a sign that a cigarette sales ban is likely to be unpopular and ineffective.[46] However, Proctor argues that tobacco and alcohol are dramatically different: nicotine, unlike alcohol, is not a recreational drug, and most smokers, unlike most drinkers, are seriously addicted, smoking to satisfy their addiction to nicotine rather than for pleasure.[7, p. 557] As smokers overcome their addiction, demand for smuggled cigarettes should decline.[33]

In Bhutan, the vast majority of the public (94%) supports the tobacco ban, including current tobacco users (88%).[45] Research in a handful of western nations has found lower, but still notable levels of support for the idea of banning cigarette sales, with support higher among nonsmokers than smokers. For example, a 2004 survey of households in New South Wales, Australia found that 59.9% of non smokers and 37.2% of smokers supported "complete tobacco prohibition" within ten years.[47] Similarly, in England in 2008, 49.4% of never smokers, 40.5% of ex-smokers, and 32.5% of smokers surveyed supported phasing in a tobacco sales ban within 10 years.[48] In New Zealand in 2008, 60.1% of never smokers, 52.0% of ex-smokers, and 26.2% of smokers supported a similar time frame for a ban.[49] In Victoria, Australia in 2010, 52.8% of adults overall and 42.2% of smokers agreed that a tobacco sales ban should be phased in within 5-10 years.[50] In the US in 2011, 53.1% of nonsmokers and 32.7% of smokers agreed that cigarettes should be banned in the next decade.[32] More recently, a Hong Kong study found that 68.0% of never smokers, 59.4% of ex smokers and 45.4% of smokers supported a tobacco sales ban within 0-10 years.[51] Notably, these high levels of support were measured in the absence of any organised campaign to engage the public on these issues.

Advantage of cleaner nicotine products over combustibles

Rather than ban combustible tobacco, some have proposed that it be placed at a regulatory or market disadvantage compared to non-combustible, "cleaner" nicotine products such as low nitrosamine smokeless tobacco, pharmaceutical nicotine, and electronic cigarettes.[52, 53] For example, combustible tobacco could be subject to higher taxes, restricted availability, and enhanced warning labels. To eliminate negative outcomes associated with wider availability and use of non combustible products (e.g., youth uptake, increased or sustained nicotine addiction among smokers who might otherwise quit, undermining public smokefree laws and re-modelling smoking as a desirable activity), the marketing, design, distribution and use of such products could be regulated.[53] For example, a non-profit agency could be tasked with providing limited marketing of non combustible tobacco to existing smokers, and retailers could be licensed and monitored. In addition, e-cigarettes could be required to look less like cigarettes and their use prohibited in places where cigarette smoking is banned.[53] Alternatively, tobacco companies could be permitted to market clean nicotine products, but only if they agreed to phase out the manufacture and sale of combustible tobacco products.[54]

User

Smoker's licence

Chapman has proposed a smoker licensing scheme as a method for significantly reducing tobacco use.[55] All those seeking to purchase tobacco from a licensed retailer would be required to apply and pay for a "smart swipecard" smoker's licence, renewable annually, with purchase limits (up to a maximum of 50 cigarettes per day) established by the user. Financial incentives to permanently relinquish the licence could be offered (with a 6-month "cooling off period" for changing one's mind), and new smokers seeking a licence would first have to prove that they chose to smoke with full knowledge of tobacco's health and financial costs by correctly answering a series of questions. In addition, the legal smoking age could be raised annually by 1

year; given that smoking initiation occurs primarily among those under 23 years of age, new requests for smokers' licences would presumably decline rapidly after several years.

Comparing the ethics of a smoker's licence to tobacco sales taxes, Halliday[56] argues that while both can be considered paternalistic, a licence is a superior method of "coercion" because it is likely to be more effective at limiting youth uptake. One option for enhancing this effect is to introduce "staggered licences," with initial licences for "beginner smokers" costing more than subsequent licenses.[56]

Critics of the smoker licensing scheme argue that some or all of its components are unwise, too burdensome on smokers, or likely to lead to illegal sales. Magnusson[57] argues that purchase limits and licence surrender might encourage informal cigarette sales among smokers, or lead to a black market; an annual renewal fee could pose an economic burden to smokers; and a knowledge test of smoking's dangers could reinforce the tobacco industry's framing of smoking as a choice made by adults fully informed of the risks.[57] Collin objects to the focus on and stigmatisation of smokers rather than the tobacco industry.[58] He points out that tobacco control has been successful precisely because of its focus on the tobacco industry rather than smokers, and argues that more creative industry-focused regulation is needed. Given that smoking is increasingly concentrated among the poor, stigmatising them further as "registered addicts" has social justice implications.

Chapman, however, argues that his proposal is not a substitute for industry regulation, but a complement to it.[55] He also considers a smoker's licence to be akin to the non-stigmatizing prescription required for legal access to certain pharmaceuticals. There are also parallels with medical marijuana programmes in certain US states. In Arizona, for example, patients who wish to obtain marijuana for medicinal purposes from dispensaries must be licensed by the state department of health.[59] The licence requires a doctor's certification of a qualifying medical condition and an annual fee of $75-$100; patients may only possess 2.5 ounces of marijuana at any given time.

Prescription to purchase tobacco

The idea to require smokers to obtain a doctor's prescription to purchase tobacco from licensed pharmacists has occasionally been discussed in tobacco control circles, but, until recently, had no particular champion. In Iceland in 2011, a former health minister sponsored a bill to limit cigarette sales to pharmacies and require purchasers (aged 20 and over) to obtain a prescription. A prescription would only be given after cessation efforts had failed.[60, 61] Similarly, in the US, an Oregon lawmaker proposed in 2013 that the state classify all nicotine products as controlled substances, available for purchase only by prescription.[62]

It is unknown if doctors would feel comfortable writing prescriptions for cigarettes, or if pharmacists would agree to fill them. Smuggling and illegal sales would also presumably be a problem, particularly in localities without secure borders.

Retail

Licensing, outlet restrictions, display bans, and price controls

Researchers have proposed a variety of restrictions at the retail level that could be employed in a broader endgame strategy, starting with licensing of tobacco retailers.[63] Although existing licensing or registration schemes, such as those in many American states, are designed primarily to limit tobacco sales to adults only, they could be designed to discourage tobacco sales and use. For example, limits could be placed on the number, location, and opening hours of tobacco retailers, including prohibiting new outlets from opening, barring outlets near schools or limiting sales to non-school hours, banning duty free sales, or restricting all sales to government-controlled outlets (as is done with certain types of alcohol in some US states) or to one type of outlet, such as pharmacies.[29, 63-66] The cost of licences, typically quite low, could be raised dramatically,[65] along with the cost of violating the provisions of the licence (e.g., the sanctions associated with underage or other illegal sales).[63] Retailers could also be given incentives to give up tobacco licences.[65] Product display and point-of-sale advertising bans, already in force in numerous countries such as the UK, could be a condition of licensing.[63] Tobacco retailers could also be prohibited from selling tobacco products below a certain minimum price (already the case in at least 24 US states and the District of Columbia)[67] to counteract discounting by tobacco manufacturers.[63] (See further discussion of price strategies below.)

Evidence for the potential efficacy of these retailer-focused measures includes research showing that smoking cessation is enhanced when those trying to quit smoking have to travel a greater distance from home to a tobacco outlet.[68, 69] Similarly, youth smoking rates are lower in neighbourhoods with fewer tobacco outlets.[64, 70] Impulse purchases of cigarettes are also lower in countries that have enacted point-of-sale advertising bans.[71] Raising the licensing fee may be an effective strategy for reducing the number of tobacco retailers, as even a modest increase in the cost of a tobacco licence in South Australia was associated with a reduction in the number of licensed retailers (albeit those with low tobacco sales volumes).[72] Research on California retailers also indicates that some are motivated to voluntarily discontinue tobacco sales when faced with declining tobacco sales and the cost and bureaucracy associated with annual licence renewal.[73]

Restrict sales by year born

Researchers in Singapore have proposed prohibiting the sale of tobacco to citizens born in or after a certain year (e.g., the year 2000), thereby creating "tobacco free generations" legally barred from purchasing tobacco at any age.[74, 75] In effect, this would phase out the sale of tobacco over an extended period: when the population is composed entirely of those born in or after the chosen year, tobacco would cease to be sold, except perhaps to foreign visitors. Individuals would be able to grow tobacco for their own use.[75] Although there would presumably be some demand for illegal sales initially among those barred from purchasing tobacco, this might decline as the smoking population aged and smokers were perceived as undesirable role models for youth.[74] Media campaigns could also portray smoking as "a 'last

century' phenomenon."[75, p. i23] To further discourage flouting the law, jurisdictions might choose to sanction underage users caught smoking manufactured cigarettes.[74] Singapore residents surveyed in 2007 strongly supported the proposal, although support was higher among non-smokers (72.7%) than smokers (60.0%).[74] The proposal also has the support of the Australian state of Tasmania's upper house of parliament.[76]

One objection to the proposal is that it denies adults the ability to "take informed risks."[55] However, Berrick notes that consumer choices are frequently constrained, particularly when products are found to be toxic.[75] Moreover, because the majority of smokers take up the habit before age 18, a ban on the sale of manufactured tobacco would constrain the choices of a small minority of adults.[75]

Precedent for the licensing and tobacco free generation proposals occurred in Taiwan and British Ceylon (now Sri Lanka) in the early part of the 20th century.[75] Smoking opium was phased out over decades by requiring current smokers to register with the government and display a licence in order to purchase opium; after the initial registration period, no further licences were granted, preventing non-smokers from legally purchasing opium.[75]

Plain packaging

Plain packaging of tobacco products, recently introduced in Australia, has also been proposed as a tool in the endgame toolkit. In many countries, the cigarette pack is among the last remaining marketing opportunities available to the tobacco industry, which uses it to communicate brand "personality" and other characteristics, including the seeming safety of particular brands.[77, p. 3, 78] Cigarette package design and imagery also reduce the effectiveness of health warnings.[77, p. 13]

Plain packaging removes all colours, brand imagery, logos, and trademarks, replaced by a pack in a standard (drab) colour, with a brand name listed in a standardised size, font, and location, accompanied by any required health warning.[79] The size, shape, texture, and interior of the pack, as well as the cigarette itself are also standardised to prevent manufacturers from making even subtle product distinctions.[79] The goal is to make cigarettes less appealing to existing and potential smokers, to enhance the salience of health warnings, and to minimise perceptions that particular brands are safer or healthier than others.[77, 80]

Before Australia became the first country in the world to require plain packaging of tobacco products, a large body of experimental research demonstrated that adults and youth perceive cigarettes in plain packages to be "less appealing, less palatable, less satisfying, and of lower quality" than cigarettes in traditional packaging.[81, p. 3] Moreover, plain packaging has been found to enhance the effectiveness of cigarette pack health warnings and to reduce misperceptions about the relative harm of various cigarette brands.[81] It will be several years before the impact of plain packaging on Australian smoking prevalence can be fully assessed; however, early research is promising. A study conducted as the Australian plain packaging law was first being implemented in late 2012 compared smokers of cigarettes from plain packs with larger health warnings to smokers still smoking branded packs with smaller warnings.[82] It found that smokers of cigarettes in plain packages were significantly more likely to perceive their

cigarette to be of lower quality than a year ago, to rank quitting smoking as a higher priority, and to report that they thought about quitting at least once a day in the past week.[82]

Market

Comprehensive tobacco control models

Numerous researchers have commented on the lack of regulation of many aspects of tobacco production, marketing, and sales, in contrast to the strong regulatory controls put on many consumer products, such as food, and particularly on those with the potential to do harm, such as alcohol and pharmaceuticals. For example, there are no restrictions on the ingredients of cigarettes, no requirement for ingredient labels, and varied regulations about sale (including many jurisdictions where no licence to sell is required) and promotion. Liberman[83, p. 463] called out the "perverse incentive" for tobacco companies, whereby "the more products it is able to sell, the more people it addicts and kills, the more money it makes." He suggested that, because of the unique qualities and dangers of tobacco, a new agency would be necessary to fill in the regulatory gaps and challenge the perverse incentive. Such an agency would handle product regulation, communication with consumers, development of less harmful/addictive products, price controls, regulation of sales, and monitoring of the regulatory system itself. Thomson et al. endorsed this model for New Zealand,[84] suggesting that, because it could be funded by taxes on the tobacco companies, it would not cost individual taxpayers.

Along these lines, various proposals have been made to establish regulatory frameworks that would take on some, if not all, of these aspects of supply side issues. Borland[18] was first to propose such a system, using a regulated market model (RMM). The RMM would establish a tobacco products agency which would act as both regulator and sole purchaser from manufacturers and importers. In such a position, the agency could set standards for manufacturers (from whom it would buy) as well as for the retailers (to whom it would supply products). This system could permit innovation (e.g., the agency would buy demonstrably safer products) while controlling price, packaging, and promotion. The RMM would require such an agency to be chartered with a health promotion goal and adequate transparency to ensure oversight. Presumably, with a health promotion goal, the RMM could utilize many of the other ideas outlined here, such as plain packaging, ratcheting down nicotine levels, raising prices, or restricting outlets, to reduce tobacco use prevalence to near zero, although it is not clear if Borland thinks this is possible. Others have specifically suggested this proposal as a way to maintain the cigarette industry but compel production of a less harmful product, to be distributed in a better-controlled way.[85] A system like the RMM has been proposed to regulate sales of marijuana in Uruguay.[86]

A scheme somewhat similar to a RMM has been proposed by Callard et al.,[87] who suggest that tobacco companies should be purchased and their management taken over by a not-for-profit entity with a health promotion mandate. The purchase "could be financed by industry assets and future revenue streams"; the purchase could be "voluntary or legislated." The not-for-profit entity would have to be created legislatively, and could then use many of the strategies

outlined here to meet mandated tobacco use reduction goals. The specific goal set by Callard et al. is "the phasing out of tobacco use or its reduction to levels of minimal use."

Callard and colleagues note that there are multiple models for such systems. They liken the not-for-profit entity they would create to public water systems or post offices; however, they also reference other examples to demonstrate the acceptability of this kind of regulation, including state-run alcohol distribution systems, such as that used in Canada or in several US states.[88] These parallels are not perfect, as they do not aim to reduce usage of the relevant resource to zero.

Quota/"Sinking lid"

A somewhat simpler approach involves setting a quota on tobacco manufacture and imports, to be regularly reduced under a "sinking lid."[89, 90] The quota would be set, and manufacturers and importers would bid at government-run auctions for shares to enable their sales to retailers. Presumably, as quotas were reduced, prices for the shares, and consequently prices for tobacco products, would rise, until demand shrank. Revenues from share auctions (as well as tax revenues) could be applied to complementary tobacco control programmes. The sinking lid explicitly lays out a timeline for the cessation of all tobacco product sales.
This idea is based on similar schemes in use to reduce carbon emissions,[91] and to control the catch taken from fisheries.[92] These examples do not aim to reduce use to zero, and are thus not ideal models.

Price caps

Under the tobacco price cap proposal, a tobacco regulatory body would be responsible for setting the maximum wholesale price for cigarettes.[93] The regulator would take into account production costs and reasonable profit when setting the price. The price the consumer paid would be the wholesale price, plus retailer-added costs, plus excise tax and sales tax/value added tax. This system would prevent the industry from using tax increases as an opportunity to increase their prices (and profit); give the government more control over the ultimate price paid by consumers; ensure that most of any price increase benefited the government rather than the industry; and ultimately reduce industry influence over tobacco control policy by reducing the amount of money available to the industry for lobbying purposes. Price caps would also likely reduce the price differentials among brands (regulators could take brand differences into account, but actual production cost differences are likely to be minimal), thus reducing the tendency of smokers to shift to lower-priced brands rather than quit in the face of price increases.
This system does not necessarily imply an end to commercial tobacco sales; however, it gives government a degree of control that might be used to ultimately cause profit margins to shrink to levels unacceptable to the industry. The price cap system has been used in the UK to regulate utility prices.[94]

Relative acceptability of various endgame proposals

New Zealand has established the goal of being smoke-free by 2025; recent research has explored the acceptability of various plans.[95, 96] Focus groups were held among Maori, non-Maori, smokers, and non-smokers, who were presented with the tobacco-free goal and a proposal similar to the RMM. Participants were largely supportive, though some may have found the specific proposal difficult to understand. Participants were concerned at the practicability of setting up a Tobacco Free Commission (which would act as the regulator), given opposition by the tobacco industry and the radicalism of having a government-sponsored agency take over the market. They were also concerned about politicisation of the agency.

Another set of focus groups and interviews was held with policy-makers, media, and public health practitioners. These participants were presented with 5 options: 1) a proposal similar to the RMM; 2) a Nicotine Authority to coordinate tobacco control activities and regulate the market; 3) a "sinking lid" proposal; 4) legally requiring tobacco companies to be responsible for reducing smoking prevalence; and 5) increased litigation against the industry. Participants were supportive of supply-side approaches to the tobacco problem, but identified problems with all of them. Specific critiques included, for the RMM, the ethical issues involved in establishing a governmental body with responsibility to sell a harmful product; and for the Nicotine Authority, the problem of leaving the industry intact, with the ability to interfere in various ways, as well as possible confusion resulting from regulating nicotine as a medicine (NRT) and as a toxic substance. The sinking lid proposal was seen as problematic if supplies were reduced more quickly than demand; compelling the industry to reduce prevalence rates and increased litigation were both seen as having poorly-defined endpoints. Participants suggested that a reframing of tobacco products would likely be an important aspect of any "endgame." Current frames (risky but legal) restricted the available policy options; a new frame (public health hazard) might allow more radical ideas to gain acceptability.

In the US, a focus group study with older (>50 years) smokers found that many participants spontaneously suggested that the government had failed in its responsibility to protect citizens by not regulating tobacco.[97] This study was small and further research would be needed to confirm these findings, but, combined with the previously discussed evidence of support for more government intervention, it suggests that there may be more public appetite for strong regulation than is generally thought.

III. Case studies of leading tobacco control jurisdictions

Australia, Canada, Finland, New Zealand, Singapore, and the US state of California are widely regarded as leaders in tobacco control who may be among the first to achieve a tobacco endgame. New Zealand and Finland, for example, are the first countries to have explicitly set dates by which they intend to be tobacco-free, or nearly so (and Scotland has subsequently followed their example). In this section, we outline each jurisdiction's tobacco control milestones, and summarise our discussions with key tobacco control researchers, advocates, and policymakers regarding endgame definitions, planning, goals, and obstacles, as well as perspectives on various endgame proposals. Table 2 provides a summary of smoking prevalence rates and tobacco control policies in these jurisdictions.

Australia

Australia's tobacco control milestones

1972	The health warning, "Smoking is a Health Hazard" made compulsory on cigarette packets.
1975	Federal law banned cigarette advertising on television and radio; Western Australia law required licensure of persons involved in sale of tobacco products.
1986	Smoking prohibited on all domestic aircraft.
	Smoking phased out in all federal workplaces.
	Western Australia initiated agreement by all Health Ministers to introduce strong health warnings.
	Tobacco Institute of Australia paid for a series of newspaper advertisements to persuade the public that secondhand smoke was not a health problem; Australian Council on Smoking and Health, with others, lodged formal complaint with the Advertising Standards Council, which was upheld. The federal court ultimately held that the Tobacco Institute engaged in misleading or deceptive conduct, and determined that secondhand smoke was a cause of lung cancer, respiratory disease in children, and asthma attacks.
1987	Stronger health warnings introduced on cigarette packets under the tobacco (Warning labels) regulations: "Smoking Causes Lung Cancer," "Smoking Causes Heart Disease," "Smoking Damages Your Lungs," and "Smoking Reduces Your Fitness."
1990	Fine for sales of cigarettes to under 18-year-olds increased to $5000.
	Free samples of cigarettes and competitions involving cigarettes banned.
	Tobacco tax increased.
	All billboard advertising of tobacco products phased out.
1991	Point of Sale Advertising regulations under the Tobacco Control Act 1990 further restricted advertising and prohibited tobacco advertising outside of shops or in public view.
1997	Federal government ended all remaining tobacco sponsorships, including sponsorship of international events.
	New national campaign, "Every cigarette is doing you damage" began.
2004	Labour Party announced that it would no longer accept donations from tobacco companies.

	Federal government decided to implement graphic warnings occupying 30% of front 90% of back of cigarette packets.
2005	Tobacco Products Control Bill introduced into Parliament. Bill contained amendments to the prior Tobacco Control Act relating to advertising, sponsorships, packaging and labelling, exemptions, sales to minors, licensing, enforcement, administration, interpretations and judicial processes.
	Australian Competition and Consumer Commission ruled against the tobacco industry under the Trade Practices Act relative to "lights and milds" cigarette products and campaigns.
2007	Licensing for tobacco retailers came into force with strict limits on point-of-sale display of tobacco products.
2008	All Department of Health facilities smoke-free from 1 January.
2010	Australian government banned most tobacco advertising on the internet.
	Australian government announced a 25% increase in tobacco excise tax.
	Fire-safe cigarettes made compulsory.
	Significant additional funding dedicated to anti-tobacco mass media campaigns.
2011	Public hearings held to inquire into the funding of political parties and election campaigns (including donations made by tobacco companies).
	Federal government proposed new, larger, rotating graphic health warnings on tobacco products.
2012	All tobacco products in Australia required to be sold in plain packaging as of 1 December.

Summary

"Endgame"

Informants did not like the term "endgame" for a variety of reasons. Some thought that there would be no "end" and that use of the word "game" trivialised the issue. Others pointed out that the "endgame" (in chess) was often the longest and most difficult stage. There was also concern that it suggested (prematurely) that the problem had been solved. Several objected on the grounds that it was jargon, and not easily understood by the general public.

Endpoints

Informants suggested a variety of "endpoints": smoking prevalence below 5%; no commercial tobacco sales; tobacco sales severely restricted (e.g., only sold in limited locations/by

prescription/licence). There seemed to be some consensus that once prevalence got below a certain point (usually expressed as 5%, but with acknowledgment that this was not based on any specific knowledge or calculation), that would be the time for more radical action. A minority thought that radical action was necessary to get to such a point in the first place.

There was some consensus that there would be a need for some legal source of cigarettes for a period of time, if not indefinitely. Concern was expressed that a lack of legal access to cigarettes would lead to some of the same issues that follow drug and alcohol prohibition: black markets, criminal enterprises, etc. However, most agreed that the legal source would likely take the form of some version of prescription/licensing/methadone distribution or other extremely restrictive scenario; "ordinary" sales at shops should be eliminated.

Current focus

Australia has a stated (government) goal of reducing smoking prevalence to 10% by 2018, and cutting prevalence in half among the indigenous population by the same date. Achieving this was seen as the primary goal, not anything more ambitious. There was general consensus that the focus of tobacco control advocacy should be on improving implementation of what was known to be effective, such as increasing prices, denormalisation, decreased availability and cessation help. Concern about the disparity in smoking prevalence between indigenous populations versus others was frequently expressed. Several people accurately predicted that then-upcoming elections would return a more conservative government which would have a lower commitment to tobacco control; this increased their desire to focus on making sure the National Tobacco Strategy was implemented rather than taking up time with "distractions." In this context, numerous informants said that discussion of "endgame" was largely confined to academics. Although many of the proposed "endgame" ideas were dismissed as impracticable, it was also noted that ideas take a long time to be accepted and made into policy; e.g., plain packs were first mentioned in Canada in 1988.

Consensus/disagreement

Most informants thought there was good consensus on the 2018 goals and on strengthening policies known to work (e.g., raising taxes). Most described the Australian tobacco control community as generally united. Disagreement was seen to be collegial and healthy.

Harm reduction

The most outright disagreement was expressed in relation to harm reduction. According to some, addiction is part of the disease, so product substitution (even nicotine replacement therapy) shouldn't be the long-term strategy. In this view, there is no "need" to smoke, so no need to supply "alternatives" (long term); new products are simply a way for the industry to maintain a market. Some also mentioned the previous failures of harm reduction strategies (e.g., filters, lights). On the other end of the spectrum, some saw e-cigarettes as key to ending the use of combustibles. In between were some notes of caution. Some thought that the risks of e-cigarettes included dual use, and reinforcement/renormalisation of smoking (gestures/performance). If e-cigarettes were shown to be effective for cessation, it was urged

that they be sold more or less as pharmaceuticals (restricted supply, no advertising/branding), not as consumer goods. Some were also concerned that the conversation about e-cigarettes was a distraction from the main goal of reducing smoking prevalence.

The tobacco industry

Several informants commented that Australia was advantaged by the fact that there is no "indigenous" tobacco industry: there is no tobacco growing or production in Australia, the supply is all imported. Australia is also a relatively small market. These factors meant that the industry representatives tended to be the "B team" – not very effective strategically or in making their case. It is only when the industry is concerned that Australia may be innovating in a way that could be replicated elsewhere (e.g., plain packaging) that solid opposition appears. However, the tobacco industry is still a player and "fellow-travellers," such as the retail lobby, were also mentioned as obstacles. A minority suggested more focus on the industry, including pursuing litigation and holding individual executives accountable.

International issues

The most frequently mentioned international issue was internet advertising and sales. In theory, tobacco advertising on the internet is illegal in Australia, but there is no practical enforcement. Most informants were not very concerned about several nations' challenges to Australia's plain packaging legislation being brought to the World Trade Organization, believing that if the government persevered, it would ultimately win. However, the existence of transnational tobacco companies was seen as a problem, since even if the point was reached in Australia where tobacco was not a problem, the industry would continue to exist. Informants were very positive about the influence of the Framework Convention on Tobacco Control.

Proposals

Restricting sales by year: Some said this could be part of a comprehensive plan; others thought it would be objected to on the grounds of "adult choice" or civil liberties, although there was also comment that it could be politically palatable as having a "kids" focus.

Quota/sinking lid: The most frequent objection was that it was silly to manipulate the market to raise prices when the government could just raise tobacco taxes and get the money. There was also concern about what might happen under a sinking lid if there was a "shortage" (e.g., annual lid is reached in November – what do smokers do until January?).

Product regulation: Banning menthol/flavours, reducing nicotine, and banning filters were mentioned by some as more practical proposals.

Canada

Canada's tobacco control milestones

1970s	Municipalities began to adopt bylaws to restrict smoking in public places.
1972	Tobacco industry withdrew direct tobacco advertising from radio and television and placed weak health warning on side of cigarette packages.
1988	Tobacco Products Control Act adopted to ban tobacco advertising.
1989	Tobacco Products Control Regulations required series of 4 text health warnings to cover 20% of package front and back.
1991	Federal tobacco taxes increased by $6 per carton – largest federal increase in Canadian history.
1993	Tobacco Sales to Young Persons Act adopted to increase minimum federal age for tobacco sales from 16 to 18.
1994	Tobacco Products Control Regulations amended to require series of 8 black and white health warnings covering 35% of package front and back.
	Ontario became first Canadian province to ban tobacco sales in pharmacies – all provinces except British Columbia have since done so.
1996	Vancouver became first Canadian municipality to adopt bylaw requiring 100% smoke-free restaurants.
1998	Tobacco Act amended to prohibit tobacco sponsorships, effective 2003.
	British Columbia became first province to file Medicare cost recovery lawsuit against tobacco industry – all provinces would subsequently follow or announce their intention to do so.
2000	Tobacco Products Information Regulations adopted to require world precedent setting picture-based warnings covering 50% of package front and back.
	Canadian Cancer Society established Smokers' Helpline in Ontario, providing smokers toll-free service for quitting assistance.
2001	Saskatchewan became first Canadian province to adopt legislation to prohibit visible retail display of tobacco products, effective 2002 – all provinces and territories would later do the same.
2004	Manitoba, New Brunswick, Northwest Territories and Nunavut became first provinces/territories to adopt legislation making all restaurants and bars 100% smoke-free – all provinces and territories have now done so.

2008	Wolfville, Nova Scotia became the first Canadian municipality to ban smoking in vehicles with kids – this would later be implemented by provincial legislation in all but Quebec.
2009	Parliament amended Tobacco Act to ban flavored cigarettes and some little cigars (effective in 2010) and to ban print advertising.
2012	New federal regulations increased size of health warnings to 75% of front and back of cigarette packages and included a toll-free quit line number and web address in warnings.

Summary

Informants agreed that, at the federal level, Canada is no longer on the forefront of tobacco control policy development and implementation. Any innovation was expected only at the provincial level, at least until a new government was elected. Among NGOs, the primary point of agreement as to next policy steps was plain packaging, although increased controls on retail (e.g., increasing the price of retail licensing, reduction in the number of outlets) was also considered possible. The larger disagreement was about endpoints: e.g., whether the goal is the elimination of the most toxic products, or the elimination of nicotine addiction.

Informants also agreed that the tobacco industry was less powerful in Canada than it had been previously. Cigarette manufacturing had largely been moved out of the country, giving the industry less political clout. Legal changes have made litigation against the industry easier to implement and, informants thought, to win (no cases have concluded as yet). All provinces have either initiated or stated their intention to bring civil suits against the industry; informants said that a victory by just one province could result in a penalty that would effectively bankrupt the Canadian industry. At that point, government would likely have to consider some of the endgame proposals, such as regulated markets, that would maintain some provision of tobacco products, with an aim to achieve significant reduction in use.

Informants urged broader discussion of tobacco control issues, for instance, with those whose focus is on alcohol or other drugs, in order to expand the set of potential approaches and learn from other experiences. Australia and New Zealand were mentioned as current leaders in tobacco control, as well as Brazil and possibly Uruguay.

Finland

Finland's tobacco control milestones

1970	Television tobacco advertising banned.
1976	Tobacco Control Act ("Act on Measures to Reduce Smoking") prohibited smoking in most public places, established minimum age of 16 to purchase tobacco, required pack health warnings, dedicated 0.5% of tobacco tax revenues to health education and tobacco-related research, and further restricted advertising.
1995	Tobacco Control Act Amendment prohibited smoking in all workplaces except restaurants and bars (with some exceptions), raised minimum age to purchase tobacco to 18, and banned indirect tobacco advertising and promotion.
	All snuff banned when Finland joined European Union.
2000	Tobacco Control Act Amendment recognised secondhand smoke as a carcinogen; smoking restricted in restaurants and bars.
2002	National telephone quit line established.
2005	Finland ratified Framework Convention on Tobacco Control.
2006	At national tobacco meeting, former Finnish Prime Minister proposed a tobacco-free Finland by 2040.
2007	Smoking banned in all restaurants and bars except those with separately ventilated, airtight smoking rooms.
2008	Network of public health groups, research institutes, and municipal organizations established Tobacco-Free Finland 2040.
2009	Tobacco retailers licensed.
2010	Tobacco Act committed government to the ultimate goal of ending use of tobacco products in Finland, banned tobacco products display (as of 2012) and tobacco vending machines (as of 2015), and restricted smoking in multi-unit housing, outdoor events, and hotels.

Summary

Tobacco free Finland 2040

The impetus for tobacco endgame thinking came in 2006, when the keynote speaker (the former Finnish Prime Minister Paavo Lipponen) at a national tobacco control conference suggested that rather than trying to reduce tobacco consumption they should be trying to end its use altogether. In response, a group of health organisations, research institutes, universities,

and municipal organisations created the Tobacco Free Finland 2040 network to share ideas and promote policies that would lead to the elimination of tobacco use in Finland by 2040. Although the 2010 Tobacco Act committed the Finnish government to the goal of eliminating tobacco use, it did not include an end date. Nonetheless, the government's adoption of the goal has legal implications in terms of international agreements; the tobacco industry has been forewarned that it is unwelcome in Finland, potentially making it harder for the industry to sue Finland in the future for violating trade agreements. It also puts the industry on notice that while the product may be legal, it is not regarded as an ordinary commodity.

Endpoint

Informants agreed that tobacco consumption would probably never be eliminated completely, but saw an endpoint as somewhere between 1-5% smoking prevalence. At that stage, most envisioned a very restricted supply of tobacco, possibly available only in state-owned outlets to licensed smokers.

Strategies to reach 2040 goal

Informants mentioned strategies to reach the 2040 goal including strengthening smoking cessation services and subsidizing cessation medications, which are currently not covered by the national health care system; plain packaging of tobacco products; raising tobacco taxes; limiting the number of retailers and raising the retailer licensing fee; eliminating duty free sales; eliminating tobacco flavourings and additives; banning smoking in cars when children are present; further restricting outdoor smoking; creating strong media campaigns; and making the tobacco industry responsible for the collection and disposal of tobacco waste. An overarching strategy mentioned by several informants was to encourage the government to treat tobacco in the same manner as alcohol, which is subject to strict regulation, including being sold only at government-owned shops.

The tobacco industry

The tobacco industry has a very negative public image in Finland and is not allowed to meet with government officials.

Obstacles

Obstacles to reaching the 2040 goal include the tobacco industry, which lobbies against tobacco control regulations and is designing e-cigarettes to sustain addiction; international trade agreements; and the political will to invest in tobacco control. One informant also mentioned that since Finland's tobacco control laws were implemented quite early, there is a false sense that Finland is a success story and the problem is solved. The EU could also be an obstacle, as its Tobacco Products Directive will influence Finland's legislation. If the Directive prohibits individual governments from enacting stricter regulation, Finland may have difficulty achieving its 2040 goal.

Harm reduction

Most informants did not support harm reduction, which they defined as the availability of snuff and electronic cigarettes (sales of both are banned in Finland). They saw the goal of Tobacco Free Finland as nicotine-free Finland.

Consensus/disagreements

All informants agreed that there was good consensus on the tobacco-free goal. While there might be some disagreement about particular strategies or tactics, how strict legislation should be, and about whether e-cigarette use should be encouraged as an alternative to combustible tobacco, there was a consensus on the general areas that needed work (such as reducing the number of retailers). Politicians are generally quite supportive of tobacco control, although less strongly so than health advocates.

International issues

In addition to the EU Tobacco Products Directive, international issues that might impact Finland's progress towards its goals included the lax tobacco policies of two of Finland's neighbours, Estonia and Russia, and duty-free sales on the ferries that carried passengers to Sweden and Estonia.

Proposals

Banning tobacco sales: Most informants preferred to limit tobacco sales rather than ban them outright. One suggested banning tobacco manufacturing and commercial activities around tobacco, but letting people grow tobacco themselves.

Raising the minimum age of purchase: There has been some discussion of raising the minimum age of purchase to 21. Singapore's smokefree generation idea has also been discussed, but informants were not enthusiastic about it, due to enforcement issues.

Smoker's licence: This is considered an option for the future, in conjunction with restrictions on the number or type of outlets that can sell tobacco.

Plain packaging: Finland is interested in adopting plain packaging, but is waiting to see how this plays out in Australia.

The remaining endgame proposals such as quota/sinking lid, price caps, a regulated market model, and reduced nicotine content in tobacco products have not been discussed by tobacco control advocates in Finland, although it is possible that they will become a topic of discussion as smoking prevalence declines.

New Zealand

New Zealand's tobacco control milestones

1990	Smoke-free Environments Act passed, banning smoking in many indoor workplaces (unless in designated smoking areas).
1995	Virtually all tobacco advertising and sponsorship banned.
1997	Tobacco sales limited to those 18 years and older.
1998	Point-of-sale tobacco advertising banned.
1999	National telephone quit line established.
2000	Government subsidized nicotine replacement therapy.
2004	Smokefree Environments Act 2003 came into effect, banning smoking indoors at most workplaces, including bars and cafes, and everywhere at schools and early-childhood centres.
	New Zealand ratified WHO Framework Convention on Tobacco Control.
2008	Graphic health warnings on tobacco packs.
	New Zealand tobacco control organizations (Smokefree Coalition) advocated smoke-free New Zealand by 2020 (report released in 2010).
2010	Maori Affairs Select Committee tobacco inquiry; report recommended halving tobacco consumption and smoking prevalence by 2015 and making New Zealand a smoke-free nation by 2025; "smoke-free" defined as an aspirational goal, not commitment to banning smoking.
2011	Government agreed to 2015 and 2025 goals.
2012	Retail tobacco displays banned.

Summary

Smokefree New Zealand 2025

The endgame discussion was initiated in New Zealand in the early 2000s, brought up by a Maori politician who wanted to ban tobacco sales. This suggestion provided an opportunity for tobacco control advocates to think about the possibility of an endgame. Representatives of various tobacco control organisations met and decided to advocate for a smokefree New Zealand by 2020. Soon after, the Maori Affairs Select Committee established a parliamentary inquiry into the actions of the tobacco industry to promote tobacco use among Maori in Aotearoa/New Zealand and the consequences of tobacco use for Maori people. It received

submissions from non-governmental organisations, community members, scientists, and several tobacco company representatives. Several informants mentioned that some committee members were initially resistant to the idea of taking action against tobacco, but were moved by personal stories of addiction and suffering, and outraged by the actions of the tobacco industry. According to one informant, tobacco industry representatives who testified underestimated the influence of the committee, and performed poorly, with many of their statements contradicted by internal tobacco industry documents. The committee ultimately recommended to the government that New Zealand become a smokefree (defined as less that 5% smoking prevalence) nation by 2025. The government agreed to this "aspirational" goal, and released $5 million of research funding to help achieve a dramatic drop in smoking prevalence, with additional money for cessation programmes.

"Endgame"

Some informants objected to the term "endgame," which they saw as trivialising a serious issue. One preferred the term "eliminating tobacco," while another said that tobacco control advocates in New Zealand used the term "the goal" or "smokefree 2025" instead.

Endpoint

Most saw the endpoint as smoking prevalence of less than 5% (for all population groups), although some pointed out that this was an arbitrary figure (representing smoking prevalence among doctors). At this point, no one would be starting to smoke, and tobacco, if available, would be accessible only by prescription or from a small number of licensed retailers.

2025 goal

Informants agreed that the New Zealand government's 2025 smokefree goal was a good thing, as it had galvanised tobacco control advocates and accelerated tobacco control efforts. For example, tobacco taxes were set to increase by 10% each year for the next three years, and plain packaging is on the Parliamentary agenda for debate in early 2014.[98] Some local city councils were also taking up the challenge, with Auckland setting a goal of 3% smoking prevalence by 2025. Only one informant expressed reservations about the goal, stating that it was possible that the goal would not be met, and worrying that the goal created a sense of complacency, a feeling that "tobacco is done". Others expressed confidence that the goal would be met, or pointed out that the goal could be re-set, as was done with efforts to eradicate polio. Several informants suggested that the goal might be more easily met if the government were to market it to the public as something to rally around (like the Olympics), a means of marking New Zealanders as unique and being smokefree as part of their national identity.

Strategies to reach 2025 goal

Strategies for achieving the 2025 goal included raising tobacco taxes beyond those already planned by the government (this was nearly universally agreed upon); increasing smoking

cessation, particularly among Maori and Pacific Islanders; registering and licensing tobacco retailers, with an eye towards limiting their number or conditions of sale; plain packaging; and product regulation (decreasing nicotine content, removing menthol and other additives, banning filters, and increasing the pH of cigarette smoke). There was some concern that raising taxes too high generated sympathy for smokers or was perceived as a burden on Maori and the poorest New Zealanders. Several pointed out that if taxes continued to increase, this issue could be addressed through dedicated funds going towards cessation services for these groups. Several interviewees thought that tobacco industry denormalisation campaigns would not work in New Zealand because the industry did not have a large presence (although others disagreed).

Some informants suggested that more radical endgame ideas (smoke-free generation, a regulated market model, banning tobacco sales) might become more plausible when the 2025 deadline got closer or when it was reached, particularly if smoking prevalence fell. However until then, most advocated continuing to focus on existing tobacco control strategies.

Obstacles

Obstacles included the tobacco industry, particularly the potential for legal action and its portrayal of plain packs as a "slippery slope" that would lead to dairy products and wine being sold in plain packs; high smoking rates among Maori and Pacific Islanders; the impending retirement of the highly supportive Associate Minister of Health; and political will. For example, the government had not released a report on how it planned to achieve the 2025 goal. Several informants stated that the government was afraid to take bold steps, and preferred simply to raise tobacco taxes. But if a courageous political leader came along, the situation could change easily, given New Zealand's political structure (one House of Parliament), which made passing laws relatively easy.

Harm reduction

The harm reduction question in New Zealand is dominated by e-cigarettes, as oral tobacco is currently banned in New Zealand (and there is no discussion of overturning this ban). E-cigarettes can only be sold in New Zealand without nicotine, but people get around this by buying nicotine-containing e-cigarettes online. Informants had mixed feelings about e-cigarettes. Some saw them as unnecessary unless one accepted the "hardening hypothesis" (i.e., as smoking prevalence is reduced, the remaining smokers are those who are more addicted). Others were open to e-cigarettes as a harm reduction alternative, particularly if they were found to be safe and effective and if they didn't re-glamorise cigarette smoking. One interviewee suggested allowing e-cigarettes only if combustibles were banned (and then banning e-cigarettes as well in 10 years).

The tobacco industry

Several informants stated that the tobacco industry was not as vocal, obvious or influential in New Zealand as elsewhere, in part because there was only one cigarette factory (employing 50 people) in New Zealand, primarily producing cigarettes for export to Australia. However, they

did not predict that the tobacco industry would ever leave New Zealand or stop fighting its tobacco control efforts, since New Zealand was an important example to other nations. In fact, the tobacco industry was capable of tying up the government with Freedom of Information Act requests and public comments. Several informants suggested that New Zealand implement a counter-industry media campaign, for example, by portraying it as run from the UK by British American Tobacco, with all profits leaving New Zealand. Others saw industry denormalisation media campaigns as problematic. One explanation was that tobacco retailers were really the public face of the tobacco industry in New Zealand, and it would be difficult to portray them as a faceless, heartless enemy. Another was that New Zealand politicians were reluctant to criticise the tobacco industry.

International issues

International issues that might impact the smokefree 2025 goal centered on trade agreements (particularly the Trans Pacific Partnership agreement), with the implication that some tobacco control ideas (e.g., plain packs) would violate trade agreements. Another topic mentioned by several informants was the idea that New Zealand could be a leader among Pacific nations, supporting their tobacco-free goals. Smuggling was a non-issue.

Consensus/disagreements

Our informants stated that tobacco control advocates in New Zealand all agreed on the goal of becoming smokefree by 2025, but not necessarily on how to get there. For example, they mentioned disagreement about the efficacy of tobacco industry denormalisation campaigns. Some saw them as ineffective, stating that the public did not think that the tobacco industry should be singled out for negative attention, particularly as the government and retailers were complicit with the industry. Others saw such campaigns as highly effective, and advocated their immediate use. Another area of disagreement concerned the wisdom of encouraging e-cigarettes as replacement nicotine products, given the uncertainties about the long-term effects of e-cigarette use. Some saw them as unnecessary to achieve the 2025 goals, while others thought they might be a necessary alternative to combustible tobacco. To help achieve consensus, one informant recommended another meeting of New Zealand's tobacco control organizations, like the one that resulted in the plan for a smokefree nation.

Proposals

Banning tobacco sales: Few were keen on this idea, at least as a way to achieve the 2025 goal. Many preferred strict regulation of sales. However, one interviewee pointed out that smokers themselves supported this idea, and one saw it as an ideal way to achieve the 2025 goal.

Smoke-free generation: Several informants were opposed, citing poor enforcement of existing retailer laws, black market sales (kids selling to kids), the potential for the tobacco industry to spin it negatively, and the authoritarian nature of the proposal. One informant said it wasn't needed; instead the age limit on purchase could be raised first to 21 and then to 25. Others, however, saw it as a possibility in conjunction with other endgame ideas.

Smoker's licence: Several informants thought a smoker's licensing scheme would not work in New Zealand because it would stigmatise smokers, and the tobacco industry could then use this to its advantage. Others saw a licensing scheme as possible, particularly if combined with a financial incentive to give up one's licence.

Quota/sinking lid: Several informants thought these proposals were achievable in New Zealand, while others thought they would raise international trade issues and would face government opposition. Regardless, most informants thought it would be better to simply raise cigarette taxes.

Product regulation: Informants agreed that New Zealand was not in a position to regulate the nicotine content of cigarettes or the pH of cigarette smoke, but would be happy to follow in the steps of the US Food and Drug Administration, if it were to take such steps.

Regulated market model: This idea has no traction in New Zealand; it would be regarded negatively as a large, new bureaucracy. However, there is a precedent for such an organisation in New Zealand, which has a pharmaceutical buying agency.

Singapore

Singapore's tobacco control milestones

1970	Smoking in public places restricted and tobacco sales to minors prohibited.
1971	Tobacco advertisements banned.
1972	Tobacco taxes introduced.
1980	Text warning "Smoking can damage your health" required on front of cigarette packs.
1989	Free sampling and cigarette logos on non-tobacco products prohibited.
	Four rotational warnings placed on cigarette packs, occupying 20% of pack face: "Smoking causes cancer," "Smoking causes heart disease," "Smoking damages your lungs," and "Smoking harms those around us".
1991	Duty-free cigarettes banned.
1993	New pack warnings, "Smoking kills" and "Smoking harms your family," introduced.
1994 - 1997	Extension of smoking bans to all air-conditioned places.
1999	Telephone quit line established.
2004	Six graphic warnings on cigarette packs introduced, covering 50% of the front and 50% of the back of cigarette packs.
2006	Six new graphic warnings introduced.
2013	Descriptors "light," "low tar," and "mild" banned; six new graphic warnings introduced.

Summary

Singapore is a relatively small but population-dense island nation (population 5.3 million) that was the first in the world to ban cigarette advertising. In addition to a comprehensive advertising ban, Singapore has fairly strong smokefree laws and 50% graphic package warnings on both sides of packs. Current overall smoking prevalence is 14.3% and has risen in the past few years from a low of around 12%. Smoking rates are higher among young adults versus the population as a whole, and among males over females. The Singapore government is seeking a ban on tobacco displays in shops.[99] However, the cigarette tax has remained unchanged since 2005.

Singapore's somewhat unique political climate reflects its population's comfort level with a fairly authoritarian and highly rule-governed society. Its government is perceived as being fairly

responsive to new health-related initiatives if public support can be demonstrated. The national Health Promotion Board runs the tobacco control programme for the country.[100]

Currently, at least one "constituency," or local neighbourhood, is slated to become completely tobacco-free under a plan of the Health Promotion Board. Under this plan, smoking would be prohibited everywhere within the specific neighbourhood, including within private residences, except for a few specially designated areas.[101] Although some are sceptical that the plan will work, others feel that given Singapore's relatively low smoking prevalence, the initiative may spread to other areas.[102] In a recent popular television news talk show discussion of the idea, more than 70% favoured the tobacco-free constituency idea in an accompanying online poll.[103]

Another current initiative is the Tobacco Free Generation (TFG) proposal, detailed earlier,[104, 105] which would ban supplying tobacco to any person born after the year 2000. Currently, at least one MP has expressed strong support for the idea and a grassroots movement led by medical students is gaining traction.[106] Recently, a 100K bicycle ride to raise awareness of the initiative attracted 50 participants, including at least one MP.[107] As noted, the proposal has the advantages of not affecting current addicted smokers, removing the "rite of passage" appeal of age limits for tobacco purchase, only gradually affecting retailers as sales drop, and if successful, eventually phasing out sales of tobacco entirely. The effort to educate the public about this proposal and develop strategic planning has received substantial institutional financial support from Singapore's National Cancer Centre. Partnerships with schools to engage youth in working for the proposal are active. The TFG idea was also listed among the recommendations emerging from a recent conference on tobacco endgames held in New Delhi.

Singapore's political and social climate, which is hospitable to tobacco regulation, could make it an endgame leader. However, concerns have been raised about the prospect that trade treaties currently under negotiation, such as the Trans-Pacific Partnership, could undermine the government's ability to enact stronger policies.[108]

California

California's (and the United States') tobacco control milestones

1964	Publication of first Surgeon General's report on smoking, recognising the link between smoking and lung cancer.
1965	Federal Cigarette Labelling and Advertising Act required text health warning on cigarette packages: "Caution—cigarette smoking may be hazardous to your health."
1988	California voters approved Proposition 99, increasing the cigarette tax by 25 cents per pack, with 20% of revenue used to create first comprehensive statewide tobacco control programme in California.
1990	California's Proposition 99-funded, statewide tobacco control media campaign began, directly attacking tobacco industry.
1990	San Luis Obispo, California became first city in world to eliminate smoking in all public buildings, including bars and restaurants.
1995	California became first US state to enact statewide smoking ban, prohibiting smoking in enclosed workplaces, including restaurants.
1998	Smoking in bars prohibited throughout California.
1998	California, along with 45 other states, signed on to Master Settlement Agreement to settle litigation against tobacco industry; terms included marketing restrictions, annual payments to state, and disclosure of tobacco industry documents.
2003	California required retailers to obtain licence to sell tobacco products (in addition to any local licensing requirements).
2006	Tobacco company defendants in US government (Department of Justice) lawsuit convicted of violating Racketeer Influenced and Corrupt Organizations Act by engaging in a conspiracy to deceive public about negative health effects of smoking and secondhand smoke and the addictive nature of nicotine.
2007	Belmont, California became first US city to ban smoking inside and outside multi-unit housing complexes (effective 2009).
2008	San Francisco, California became first US city to ban tobacco sales in pharmacies, with exemptions for big box stores.
2009	San Francisco became first US city to impose a $0.20 per pack litter fee on all cigarettes sold within city limits. Revenue went to Cigarette Litter Abatement Fund to be used for: cigarette litter cleanup from sidewalks and other public spaces; fee administration, collection and enforcement; and public outreach and education.
2009	US Food and Drug Administration granted regulatory authority over tobacco products.

2009	Richmond, California banned tobacco sales in all pharmacies.
2010	San Francisco banned tobacco sales in all pharmacies.
2010	US Food and Drug Administration prohibited tobacco companies from using "light," "low" and other misleading health descriptors.
2012	The Centers for Disease Control and Prevention launched first ever federal government paid media advertising campaign encouraging people to quit smoking, Tips from Former Smokers, featuring real people living with diseases caused by smoking.

Summary

California, with a land area of 155,000 square miles, a population of 38 million people[109] (more than half that of the UK) and a state budget of more than $232 billion)[110] (almost half that of the UK), is comparable to many countries in the scale and scope of its governmental responsibilities. California has the second lowest overall smoking prevalence of any state in the US (12.7%), although smoking rates among some disadvantaged groups are higher.[111]

California's 20-year plus tobacco control programme has a reliable (if gradually diminishing, due to its success) source of funding through dedicated (earmarked) tobacco tax funds. The California programme has long featured a combination of community-based coalition work and mass media campaigns, including the first publicly funded campaign in the country to have an explicit tobacco industry denormalisation focus.[112-115] These hard-hitting advertisements raised public awareness about the industry and its practices and served to enhance the general social denormalisation of smoking messages that were also part of the programme's efforts. The programme combines an aggressive media campaign with community level activity, emphasising three themes: 1) that the tobacco industry lies; 2) that nicotine is addictive; 3) that secondhand smoke kills.[116] As the social denormalisation message has taken hold, it has in turn increased public support for tobacco control efforts. A recent effort to increase the tobacco tax failed, but by a margin of less than 1% in a highly tax-averse economic climate.

Current focus

The first priority for the California programme is to limit tobacco-promoting influences. This includes efforts to curtail advertising and marketing, counter glamorisation of tobacco use, expose industry practices, and hold the tobacco industry accountable for the impact of its products.[117]

Currently, California has strong statewide smokefree policies, including most workplaces and all public schools, restaurants and bars. The programme is estimated to have saved the state some $134 billion in reduced health care costs over 20 years, according to a 2013 economic study.[118]

California's programme relies heavily on engagement at local levels through required county coalitions that the state programme funds and supports in various ways. At the local level, some coalitions pursue more aggressive policies such as smokefree multi-unit housing, smokefree parks and beaches, and other initiatives which often serve as models for other

communities. State tobacco control programme leaders do not see "harm reduction" as a viable strategy, saying that after working so hard to denormalise tobacco use, they do not see promise in normalising nicotine addiction. In terms of endgame strategies, they doubt that there will be a "one fell swoop" strategy that will end the epidemic; rather, they see continued efforts to "bite away the edges" of the epidemic primarily through continuing social denormalisation. The difficulty with this approach is that new generational cohorts don't realise the history and the danger of tobacco use, and smoking may become viewed as hip or retro.

Notably, California has never had a major focus on achieving comprehensive cessation coverage, something the UK already has. Rather, it has focused its efforts on social norm change through policy and mass media. Yet it has achieved high cessation related outcomes, despite the fact that its real cigarette prices are actually decreasing when compared with other states over the same period of time.[119]

10-year plan

California's plans for the next ten years are focused heavily on the retail setting, with new initiatives being developed. California has statewide tobacco retailer licensing, but currently this is a one-time-only $100 fee (although local jurisdictions may impose additional fees). Initiatives in which the programme is interested include increasing the costs of/frequency of renewal for such licences, with fees earmarked for the tobacco control programme; limiting the number or density of tobacco retailers within a given geographic area or close proximity to schools; restricting or eliminating tobacco coupons/redemption or other retail based incentives to purchase; and eliminating display visibility. Addressing the tobacco waste stream (e.g., cigarette butts) is another initiative in which there is interest. There is also interest in providing incentives to retailers to convert shelf space currently occupied by tobacco to healthier products.

Philosophy

The innovations pioneered by the California programme, which is still led by individuals who developed it 20 years ago, were possible because they have cultivated a strong risk-taking culture in programme planning. "We believe in trial and error," observed a leader, noting that they make a best educated guess about what may be effective, then try new strategies and stop them if they do not seem to work. The effects of many innovative policy strategies, they noted, cannot be known in advance due to the wide range of variables that may influence their effectiveness and reach.

IV. The current UK context

Under the assumption that the UK's tobacco control milestones have been fully elucidated elsewhere and will be familiar to UK readers, this report does not detail them as such. These include the UK Royal College of Physicians' (RCP) report on smoking, which appeared in 1962,[120] and had a major impact on smoking, particularly immediately after its release. However, as noted in a new RCP report issued on the fiftieth anniversary of the 1962 document, "[i]n the 50 years since the publication of *Smoking and health*, prevalence has declined by an average of less than 1% of the population per year, reaching around 22% in men and 20% in women by 2009."[121]

The National Health Service (NHS) Stop Smoking Service was set up in 1999/2000 and free, tailored cessation services are available to all UK residents, including in many cases free nicotine replacement therapy. UK cessation services, compared to those in many countries, offer state of the art treatment programmes. By contrast, the US, with a national adult prevalence of current smoking of 19% in 2011,[122] has not had an overarching emphasis on cessation. In fact, in the latest American Lung Association report, no US state (including those with the lowest smoking prevalence) scored above a "C" (or average) grade on cessation.[123]

In 2011, the UK Department of Health launched a new tobacco control plan for England that included banning product displays in first large, then small shops, laying the groundwork for plain packaging of tobacco products, continuing to raise tobacco taxes, and encouraging more smokers to quit.[124] The plan set a goal to reduce adult smoking prevalence from 21% to 18.5% by 2015. After some delays, the product display ban appears on track, but the plain (or standardised) packaging initiative suffered a setback after it was eliminated as a priority for the current government from the Queen's Speech in 2013, an omission which many attribute to tobacco industry interference. However, Scotland has announced that it intends to move forward aggressively in this area, and Ireland and Wales likewise have indicated interest in doing so.[125-127] Scotland has also set a specific target of achieving 5% prevalence or less by 2034.[128]

Despite the English plain packs setback and the ensuing political fallout, the UK is still regarded as a global leader, particularly in offering smoking cessation services. The advantages of a national health system in instituting ready access to smoking cessation resources are many. The UK has a strong tobacco control community, including internationally-recognised scientists and public health advocates who appear to work together well on major initiatives. However, as in most developed countries, there are tensions within the movement over strategic priorities and tactics.

"Endgame"

UK tobacco control experts were interviewed in May 2013 about their thoughts on an endgame for tobacco. Most had heard of the idea of a tobacco "endgame," but had not spent much time reflecting on what that might look like for the UK. Several remarked that the process of discussing it was exciting and thought-provoking; just one expressed "cynicism" about the

possibility of achieving an endgame and concern that too much attention paid to it might distract from more immediate initiatives that were perhaps more achievable in the short term.

Endpoint

Informants generally agreed on and mentioned without prompting a 5% adult smoking prevalence as an acceptable endgame target, but several emphasised that overall prevalence could not be the goal since "I know who would be in that 5% [indicating disadvantaged groups]." Scotland has set a governmental goal of achieving 5% smoking prevalence or less by 2034. The most concise definition of the endpoint offered was "a world where tobacco's [negative health] impact is negligible and there is no prospect of it increasing."

International Issues

The complexity and uncertainties regarding the EU structure were frequently mentioned as potential obstacles to endgame planning. The issue of transnational trade agreements was also raised as a potential area where the tobacco industry may attempt to forestall progress on tobacco control policies at national levels. Several expressed concern that some endgame options around market controls could run into EU-related obstacles.

Obstacles

Lack of strong, innovative and effective mass media campaigns was identified by most informants as a primary obstacle to further progress on tobacco control. Also mentioned were the lack of long range planning for ending the epidemic, and a sense that the endgame conversation itself was being avoided. Lack of systematic monitoring of tobacco industry activity, and the paucity of regulatory requirements for more data disclosure by tobacco companies (e.g., local level sales data, marketing spend data) were also mentioned. The most notable and longstanding potential obstacle, and the one mentioned most by UK (and other countries') tobacco control leaders interviewed for this report, was centred around the idea of harm reduction as a tobacco control strategy.

Harm Reduction

Almost all participants, whether or not they generally favoured a "harm reduction" approach, expressed concern about how a harm reduction agenda might impact overall progress toward an endgame and described it as a "polarising" issue. Most were concerned about "going down a medicalised route" focused on individual behaviour and product regulation instead of focusing on prevention, developing a smokefree social movement, and empowerment for public health/prevention. Some felt that harm reduction might represent "the industry's route back to respectability," expressing that it could be placing implementation of provisions of the FCTC's Article 5.3 at risk if tobacco companies developing supposedly reduced harm products were engaged in regulatory policy setting.

Recently, the UK Medicines and Healthcare Regulatory Authority (MHRA) announced its intention to regulate electronic cigarettes and other nicotine delivery devices as medicines.[129]

In March 2014, the European Union adopted a dual approach to the regulation of e-cigarettes as part of the Tobacco Products Directive. Those making a claim about quitting will be regulated as a medicine and require a license from the MHRA. All other e-cigarettes will be regulated as consumer products in a similar way to conventional tobacco products.[i]

The decision to protect the public by regulating such products for safety appears sensible and was welcomed by many public health advocates, others pointed out that conventional cigarettes and other combustibles should also be more tightly regulated.

Consensus/Disagreements

Participants were uniformly concerned with ensuring that any endgame plan did not leave behind the disadvantaged population. To a person, they emphasised the importance of addressing the higher smoking rates among the poor. There was also broad agreement that implementing fully all measures called for in the FCTC was a priority.
Almost all informants mentioned the urgent need for more mass media campaigns. There was also strong support for increased prices and price capping schemes to ensure that tax increases begin to reduce industry profits. Addressing the tobacco industry was frequently mentioned as an area where the UK had fallen behind other countries. Several suggested that the UK had not succeeded at "putting the tobacco industry into the frame" in terms of how the tobacco problem was portrayed to the public. Additionally, insufficient resources devoted to industry monitoring/surveillance and implementation of FCTC Article 5.3 were often mentioned.

There was general agreement that e-cigarettes were likely to be regulated by the MHRA (as was subsequently announced), although ideas about how such regulation might fit with endgame policy goals seemed somewhat ambiguous. Several pointed out that more work on the rhetorical construction of endgame efforts was badly needed, e.g., instead of "tobacco control," begin focusing on tobacco free society, consumer protection, etc. Some noted the lack of studies on what smokers think should be done to end the tobacco epidemic. Several also mentioned other areas where further work was needed: integrating tobacco dependence treatment into care in clinical settings, and effectively implementing smokefree laws in prisons and mental health facilities and in outdoor settings around children.

In general, the participants were roughly divided between pragmatic realists concerned with the here and now and the immediate policy work they wanted to complete, and those who wanted a bigger picture goal including a long-term vision to end the epidemic, not merely to contain it.

Proposals

Banning tobacco sales: While several informants felt this would eventually be necessary, some expressed the sense that it could not be contemplated at all as long as smoking prevalence remained around 20%. However, several mentioned that eventually, the elimination of

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[i] EU Commission http://ec.europa.eu/health/tobacco/products/revision/index_en.htm Accessed 4 July 2014

combustible tobacco use or sales would have to be accomplished in order to achieve an endgame. Several suggested the first step was simply to "put it on the agenda" and overcome anxiety about talking about it. The trajectory of decline in smoking is too slow, several observed. "Even smokers are talking about it [phasing out cigarettes]," noted one interviewee.

Smoke-free generation: Several were intrigued by this idea and felt they would like to explore it further, but most said they wanted to see it work somewhere else first; many felt it might not be practicable or feasible in the UK. The Scottish government has a vision of a smoke-free generation by 2034 due to a variety of tobacco control policies implemented, rather than to purchase restriction.[130]

Smoker's licence: There was little enthusiasm for this idea, although some felt that all possibilities should be considered.

Quota/sinking lid: Most felt that further regulation of the market would be necessary, but several expressed concern about the requirements of the EU.

Product regulation: While some felt that eliminating menthol might be possible or desirable, there was little support for an FDA-like product regulatory agency that would regulate ingredients and product design. Several believed that the issue was not designing better cigarettes but decreasing the use of inherently unsafe products.

Regulated market model: There was interest in but little knowledge of this idea.

Retail Measures: Several mentioned that they were keen to explore measures to reduce retail tobacco outlet numbers and/or density. Given that Scotland has retailer registration, but at no cost, and England does not have it at all, most felt this would be something to consider. However, some were concerned about inciting opposition from the business community in economically challenging times. The British government has announced they are 'minded to proceed' with plain packaging, subject to a final short consultation launched in June 2014[ii]. Scotland,[131] Ireland,[126] and Wales[127] have all separately asserted their intention to move forward with plain packaging.[132]

[ii] BBC News. http://www.bbc.co.uk/news/uk-politics-26865693 accessed 9 July, 2014

V. Strategic considerations

Our review of the endgame literature and of various jurisdictions' endgame planning highlights several strategic issues that require consideration by policymakers wishing to move their countries toward an endgame for tobacco. One is defining an endpoint. Most projections around a tobacco endgame use a figure of 5% adult smoking prevalence as a target. However, this figure is somewhat arbitrary and based only on expert opinion. There is no evidence we could locate that any other epidemic has been considered resolved at a 5% prevalence level, nor does its achievement alone guarantee against the likely prospect that, through aggressive activities, the tobacco industry could again create conditions causing tobacco use prevalence to rise.

In fact, Singapore offers an instructive example of this possibility. After achieving a 12.3% smoking prevalence among young adults in 2004, smoking prevalence has begun to rise in the last few years, to 16.3% in 2010 among those aged 18-29, despite strong tobacco control measures and early, landmark leadership in the tobacco control policy arena. Overall adult prevalence is currently 14.3%, but the rise among young adults is a worrisome trend, given their influence on youth. A similar pattern is being seen currently in California, with young adult rates increasing even as overall prevalence drops, possibly due to aggressive industry promotions in bars, nightclubs, and other young adult venues.[133-135] Such shifts provide evidence that merely reaching a particular prevalence level may not be sufficient.

Furthermore, there is no current evidence to suggest that tobacco companies are intending to withdraw the most deadly tobacco products (cigarettes) from the market (although during the 1990s, at least one major tobacco company considered getting out of the tobacco business).[136] It is apparent that regardless of the massive harm caused by its products, the tobacco industry intends to continue aggressively marketing them until it is prohibited by governments from doing so or until it is no longer profitable. And given the addictive properties of the products themselves, it is apparent that the epidemic cannot be ended merely by individual interventions to help smokers quit. Rather, a more comprehensive shift in how society and government view the problem is required.

Other strategic issues to consider include the risks for tobacco control and public health more generally in pursuing a particular endgame strategy; precedents and analogous policies; timing issues; cross-border considerations; political developments and trends; and the climate of public opinion. Policy initiatives always carry the potential for downside risks, including unanticipated and unintended consequences that may reduce their effectiveness or create new policy problems.

One obvious risk is that different approaches to harm reduction as an endgame strategy within the public health community could create opportunities for the tobacco industry in the political arena. Harm reduction discourse within tobacco control circles is of relatively recent origin and the definition of harm reduction in this context remains contested.[137] The term draws from approaches to illegal drug addictions which emphasise, for example, provision of clean needles

to reduce injection-transmitted disease. In the context of tobacco use, it has been argued that encouraging those who use the most deadly combustible forms of tobacco to switch to less harmful non-combustible forms like Swedish snus (or, more recently, electronic nicotine delivery systems (e-cigarettes or ENDS) and other new nicotine products) will reduce tobacco-caused harm in a way similar to the clean needles approach. A harm reduction approach has been explicitly recognised in the UK and discussed extensively in a Royal College of Physicians report, among others.[138-140]

It should be noted that harm reduction was one of the areas in which the Philip Morris tobacco company envisioned cultivating scientists through building ties at conferences and meetings, as industry documents research has revealed.[141] Given that the plan also explicitly called for "creating schisms" within the tobacco control movement, harm reduction is clearly an issue to be approached with some caution.

Linking harm reduction measures to an explicit plan to further control and eventually phase out conventional cigarettes within a specific time frame would be unlikely to worsen divisions in the UK and could potentially bring the factions together. This is a harm reduction option that the UK's current harm reduction literature has not, to our knowledge, considered seriously. For example, tightening regulatory restrictions on conventional cigarettes while permitting easier access to tested nicotine delivery products such as NRT and possibly e-cigarettes through the medicinal regulatory scheme could make the latter more acceptable to those worried about the public health impacts of such products. However, such a trade-off carries ideological and practical risks.

The harm reduction debate highlights the need for both regulation of tobacco or specific types of tobacco products, and regulation of nicotine. While nicotine is widely accepted to be an addictive substance, and while oral tobacco products cause the majority of tobacco-related cancer deaths in countries like India, cigarette addiction and use causes the majority of tobacco-related cancer deaths in the UK. For this reason, many tobacco control experts now argue that elimination of the most dangerous form of combustible tobacco, the cigarette, should form part of a comprehensive nicotine regulatory strategy that clearly disincentivises use and/or sale of the most harmful product.

At the same time, reducing or limiting the number of retail outlets, and instituting universal retail licensure, eventually moving toward a recurrent annual licensing fee (perhaps tied to cigarette sales volume) could make it easier for smokers to sustain cessation, since evidence shows that product display and easy retail availability contribute to relapse into smoking. Dramatically raising taxes on smoked tobacco products, and reducing industry profits on conventional cigarettes through price caps have also been suggested and may be compatible with the UK's regulatory ideology; evaluation of the EU implications of such schemes is beyond the scope of this report.

Being explicit about pursuing a long-term goal of phasing out combustible cigarettes could stimulate aggressive political activity from the tobacco industry in order to protect profits. However, if combined with a well-designed tobacco industry denormalisation campaign, the

industry's activity could itself offer opportunities to highlight publicly the contradictions between the industry's goals and those of public health. Given that approximately 90% of smokers in a four country study regret having started smoking,[142] the majority say they want to quit,[142] and a not-insubstantial proportion of smokers currently support phasing out cigarette sales in nations without any formal plans to do so,[32, 47-51] smokers themselves may increasingly support a long-term government plan to phase out combustible cigarettes.

Some have suggested that proposing to phase out cigarettes or end their sale and/or use through some other demand reduction policy might produce negative responses to public health initiatives more generally (the "slippery slope" or "nanny state" arguments). Messaging focused on the key issue -- "companies should not be allowed to sell products that when used as intended kill consumers" -- and other similar messages that "put the tobacco industry into the frame" would be essential and would require political support. Modelling studies suggest that knowledge of tobacco industry deception leads to mistrust of tobacco companies, which in turn is associated with greater support for tobacco control regulation and reduced tobacco advertising receptivity.[143, 144]

Despite the tensions around harm reduction, the UK appears to have a relatively cohesive, communicative and mutually supportive tobacco control community, featuring world-class advocates and researchers who are savvy about political and policy activity. The healthy intra-UK competition that exists can be leveraged to encourage countries toward progress on tobacco control, as with the plain packaging work wherein Scotland is now leading. The UK also has a strong if complex regulatory infrastructure and a comprehensive government healthcare system that offers good cessation support. The universal concern for disadvantaged populations suggests that they will not be neglected in endgame system planning and should be involved at all phases of planning. In fact, support for strong tobacco control policy measures is often high even among smokers, and sometimes higher among those from disadvantaged groups.

Enhancing social norm change

Norm change can happen through a variety of routes, including mass media, law, and policy. Norm change can focus on denormalising a) tobacco use, b) the tobacco industry, and c) the cigarette itself. The UK has put most effort into denormalising tobacco use through strong smokefree laws, which remove smoking from most social settings, and through emphasising cessation. However, compared with other jurisdictions leading on tobacco control, there has been surprisingly little focus on the other aspects of denormalisation.

The UK has never had a major focus on tobacco industry denormalisation as a mass media theme or programme focus. A few UK informants seemed to regard such a focus as potentially transgressive, fearing backlash from the public, politicians, or the tobacco industry. However, many felt that much more attention on tobacco industry denormalisation initiatives now would lay the groundwork for future endgame planning.

A robust body of evidence suggests that effective tobacco industry denormalisation is associated with drops in both adult and youth smoking prevalence, reduced smoking initiation among youth, increased intentions to quit, and increased smoker support for industry regulation.[143-157] While such a focus can create political discomfort and controversy, it is a highly effective part of disrupting the normalisation created by tobacco companies across the last century, re-framing tobacco use and tobacco control in a narrative context. Pointing to the industry's departure from normal business practice in continuing to sell a product they now admit is deadly (and thus defective) helps build public support for stronger regulation. With effective advocacy, controversy can actually help extend the denormalisation message.

Some have suggested that California and other places where such messaging has been effective were already primed for acceptance, and thus such messaging might not work in the UK. A four-country study showed weaker counter-industry beliefs among UK smokers than among Australian, US and Canadian smokers.[156] However, it is important to recognise that the strong nonsmoking norms in California and other places were not pre-existing: they were *created* by programmes that prioritised mass media, social climate and policy change over individual behaviour, and included tobacco industry denormalisation themes.

The UK's libel laws, which allow libel claims even in instances where the assertions are true, could create potential obstacles to referencing individuals or particular company activities in industry denormalisation campaigns. For example, the California programme effectively parodied the iconic western-themed "Marlboro Man" advertisements. This approach might be potentially problematic within the UK. However, it is not necessary to name or even suggest any particular individual or company in order to denormalise the tobacco industry in a broader way. For example, a popular California ad campaign featuring a coffin and the tagline "tobacco companies are making a killing off you" conveys both the notion that cigarettes are deadly products and the message that tobacco companies are profiting at consumers' expense. This campaign is now being used in other states as well.

Recently, historian Robert Proctor has offered a powerful means of denormalising the cigarette itself with his argument that the cigarette is a fundamentally defective product: "not just dangerous, but *unreasonably* dangerous" and deliberately addictive.[33, p. i27] He shows how the modern cigarette has been engineered in a manner that enhances, rather than reduces, its deadliness, including numerous features that encourage deeper inhalation by rendering smoke "smoother" and less harsh (e.g., flue curing of tobacco, lowering smoke pH, and adding filters).[7] Understanding that the way cigarettes have been designed (and marketed) has created an industrially produced epidemic of disease is part of undoing the multitude of ways the tobacco industry has normalised cigarette smoking and the cigarette itself as a product.

Campaigns aimed at *changing the social meaning* of tobacco, the industry, and tobacco use, rather than persuading individuals to quit will be needed to lay the groundwork for any endgame goal. Tobacco companies have a century-long head start at convincing the public that using deadly and addictive, highly engineered products is normal, even natural, and associating their use with many pleasurable activities, desirable images, and aspirational goals. Undoing that work may not require a century, but it will require effort dedicated to designing effective mass and social media campaigns, including much more work on the rhetorical construction of endgame messaging for "marketing denormalisation" to different audiences.

VI. Policy Recommendations

These recommendations are proposed for closer consideration in UK end game thinking. They have been selected and adapted from the various endgame proposals to be the most relevant for the UK context.

All recommendations in this report are predicated upon the assumption that the UK continues to work aggressively to implement all provisions of the WHO FCTC. The report's focus on endgame planning is not intended to supplant current initiatives, but to focus longer term planning efforts toward ending the tobacco epidemic that was created during the last century. Recommendations are clustered below into two sections, representing shorter-term and longer-term recommendations to engage the UK in endgame planning.

Near Term Recommendations

1. Develop an endgame dialogue, narrative, and communications plan

    a. Convene a summit to develop a comprehensive, integrated tobacco endgame strategic plan and timeline and prioritise research, education and practice needs. Absent an explicit engagement with the idea that an endgame for tobacco is possible, it cannot be achieved.[2]

    b. Develop, test and fund a phased, sustained mass media-supported tobacco industry denormalisation campaign aimed at laying the groundwork for future endgame initiatives.

    c. Develop effective messaging to engage community coalitions, policymakers, and other target audiences by characterising current tobacco control policy initiatives as part of long-term endgame planning.

    d. Fund endgame strategic planning research and evaluation studies.

2. Take specific actions to constrain the tobacco industry

    a. Fully integrate throughout government strong, effective measures to implement WHO FCTC Article 5.3, in order to protect public health policymaking from tobacco industry interference. This should at minimum include transparency/disclosure provisions regarding policymaker meetings with the tobacco industry and enhanced tobacco industry monitoring and surveillance programs.

    b. Withdraw any tax incentive for tobacco marketing (40% of spend reportedly currently deductible).

c. Establish universal registration of tobacco retailers in order to better track compliance with existing policies (e.g., prohibitions on underage sales).

d. Combine comprehensive regulation of e-cigarettes with equally comprehensive and specific plans for correspondingly reducing the accessibility, affordability, and attractiveness of conventional cigarettes and roll-your-own tobacco.

Longer Term Recommendations

3. Create a tobacco regulatory authority with monitoring and regulatory powers, authority to set price floors and caps, control marketing, fund research, and set endgame targets, implementing additional tiered/phased measures to meet them. The creation of such an agency would ensure consistent goals and strategies throughout different arenas, which is often lacking (e.g., the goals of agencies designed to support trade and industry may conflict with those designed to support public health).

4. Develop incentives to gradually reduce the number and density of tobacco retail outlets, perhaps by providing incentives to retailers who agree to end tobacco sales or through charging an annual fee for tobacco retailer registration, increasing or decreasing it annually based on sales volume.

5. Create a national plan for addressing gradual reductions in tobacco company workforce and tax receipts.

Conclusion

At a recent meeting in New Delhi focused on the tobacco endgame discussion, WHO Director General Dr. Margaret Chan cautioned that endgame planning itself came with risks.[158] If endgame discussions draw resources and attention away from implementation of all FCTC provisions, they will undermine their own goals. If, however, they serve to focus that current work around creating new and more explicit visions of the concrete possibility of ending the tobacco epidemic, they will advance both. One thing is certain: if the public health community does not begin the endgame conversation, no one else will do so. For the sake of future generations, we should start now.

Appendix

1. Table 1. Summary of literature on tobacco endgame proposals

2. Table 2. Summary of smoking prevalence rates and tobacco control policies in selected nations/jurisdictions

3. List of key informants

4. References

Table 1. Summary of literature on tobacco endgame proposals

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Benowitz NL, Henningfield JE. Establishing a nicotine threshold for addiction. The implications for tobacco regulation. N Engl J Med. 1994;331(2):123-5.	Reduce tobacco use & prevent development of nicotine addiction	Regulate availability of nicotine in tobacco products to limit maximal obtainable dose; could be reduced gradually, over 10-15 year period	Proposal	NA*	USA	Potential for cheating; smuggling could be a problem	Regulated by Food and Drug Administration	No
Benowitz NL, Henningfield JE. Reducing the nicotine content to make cigarettes less addictive. Tob Control. 2013;22(Suppl 1):i14-7.	Give smokers ability to quit; reduce uptake	Reduce nicotine in cigarettes to non-addictive/non-reinforcing levels	Experimental studies of reduced nicotine content cigarettes	Cigarette consumption & plasma cotinine	USA	Possibility of black markets	Regulated	NRT; non-combustible forms could be promoted with differential taxation
Berrick AJ. The tobacco-free generation proposal. Tob Control. 2013;22(Suppl. 1):i22-i26.	Long-term phase in of total ban on tobacco	Individuals born in or after year 2000 prohibited from tobacco purchase	Proposal	NA	Singapore	Does not address current smokers; denial of choice for adults; age discrimination	Ultimately phased out	No
Borland R, Young D, Coghill K, Zhang JY. The tobacco use management system: analysing tobacco control from a systems perspective. Am J Public Health. 2010;100(7):1229-36.	Elimination of tobacco-related harm	Distinguish between tobacco use and tobacco-related harm in creation of a dynamic regulatory system	Proposal	NA	NA	Politically challenging to establish; requires transparency	Constrained/regulated	Probably

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Borland R. A strategy for controlling the marketing of tobacco products: a regulated market model. Tob Control. 2003;12(4):374-82.	Regulating industry to encourage development of less harmful products; control commercial communication; move consumers to less harmful alternatives	Regulated market model to control tobacco marketing – agency set up to purchase & market tobacco products produced by manufacturer; control wholesale distribution to retailers	Proposal	NA	NA	Agency would need an independent board; transparent deliberations. Smuggling could be a problem	Removed from control of market	Harm-reduced nicotine products
Borland R. The need for new strategies to combat the epidemic of smoking-related harm. Tob Control. 2012;21(2):287-288.	Regulating industry	Regulated market model with marketing in hands of an agency with a harm reduction charter; agency would determine what was sold and under what conditions	Proposal	NA	NA	None mentioned	Removed from control of market	Harm-reduced nicotine products
Branston JR, Gilmore AB. The case for Ofsmoke: the potential for price cap regulation of tobacco to raise £500 million per year in the UK. Tob Control. 2013 Jan 14.	Regulation to limit tobacco industry profits, use of price as marketing tool	Establish independent regulatory agency to set maximum wholesale prices (not retail price); increase taxes to maintain retail price	Liberal and conservative models of industry profitability and potential for increased tax revenue	NA	UK	Counter to trend for less regulation and smaller government	Fewer financial resources for marketing & lobbying; subject to greater regulatory scrutiny	No

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Callard C, Thompson D, Collishaw N. Transforming the tobacco market: why the supply of cigarettes should be transferred from for-profit corporations to non-profit enterprises with a public health mandate. Tob Control. 2005;14(4):278-83.	Phase out tobacco use or reduce to minimum use levels	Transfer supply of cigarettes to non-profit entity with public health mandate through voluntary or legislated purchase	Proposal	NA	NA	None mentioned	Transformed; motivated to help smokers quit & prevent tobacco uptake	Less harmful nicotine sources
Chapman S. The case for a smoker's licence. PLoS Med. 2012;9(11):e1001342.	Reduction in tobacco use	All smokers required to obtain yearly smart swipecard licence to buy tobacco; maximum purchase limit chosen by licensee at time of application; maximum daily limit of 50 cigarettes per day; new smokers must pass test of risk knowledge; incentive to surrender licence	Proposal	NA	NA	Tobacco industry might find legal implications of informed consent to smoke attractive; difficult for impoverished nations to enact	Still subject to regulation	No
Chapman S, Freeman B. Regulating the tobacco retail environment: beyond reducing sales to minors. Tob Control. 2009;18(6):496-501.	Not specified	Strict regulation and licensure of tobacco retailers, including restrictions on number and location, display bans, price controls, restrictions on amount purchased	Proposal	NA	NA	NA	Regulated	NA

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Cummings KM, Orleans C. Policies to achieve a smoke-free society: a research agenda for 2010-2015: Robert Wood Johnson Foundation; 2009.	"Smoke-free society"; eliminating tobacco industry or sale of combustibles	Multi-pronged; not specified	Research agenda	NA	USA	Questions raised concerning smoker and industry response to ban on combustibles, cost of buying out tobacco industry	Eliminated or moved from combustibles	Maybe
Daynard RA. Doing the unthinkable (and saving millions of lives). Tob Control. 2009;18(1):2-3.	Phase out cigarettes; permit non-smoked nicotine delivery devices	Not specified	Proposal	NA	USA	Smuggling would be a problem, but manageable	Not specified	Yes
Edwards R, Peace J, Russell M, Gifford H, Thomson G, Wilson N. Qualitative exploration of public and smoker understanding of, and reactions to, an endgame solution to the tobacco epidemic. BMC Public Health. 2012;12:782.	Close to zero tobacco smoking prevalence by 2020	Establishment of Tobacco Free Commission to control tobacco market with endgame goal	Focus groups with public	Comprehension/ support for TFC	New Zealand	Difficulty establishing TFC	Regulated; ultimately abolished	NA
Edwards R, Russell M, Thomson G, Wilson N, Gifford H. Daring to dream: reactions to tobacco endgame ideas among policy-makers, media and public health practitioners. BMC Public Health. 2011;11:580.	Tobacco-free by 2020	Nicotine authority to regulate market; Tobacco supply agency as monopoly purchaser; sinking lid; making companies responsible for public health goals; facilitation of litigation	Interviews and focus groups with policy makers, journalists, and public health physicians about endgame ideas	Support for various endgame proposals	New Zealand	Numerous mentioned for each	Regulated/government monopoly; eliminated	Possible

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Edwards R, Wilson N, Peace J, Weerasekera D, Thomson GW, Gifford H. Support for a tobacco endgame and increased regulation of the tobacco industry among New Zealand smokers: results from a National Survey. Tob Control. 2013;22(e1):e86-93	Cigarette sales ban	Cigarette sales ban within 10 years; greater regulation of tobacco companies	CATI with New Zealand smokers	Support for cigarette sales ban & greater tobacco company regulation	New Zealand	Findings may be specific to time and place	Regulated or eliminated	NA
Fiore MC, Baker TB. Stealing a March in the 21st Century: Accelerating Progress in the 100-Year War Against Tobacco Addiction in the United States. Am J Public Health. 2009;99(7):1170-1175.	Elimination of smoking	Tax increases; access to cessation; national clean indoor air law; elimination of nicotine; graphic warning labels; counter marketing; ban on advertising, promotion and sponsorship	Proposal	NA	USA	None mentioned	Regulated	No
Gartner C, McNeill A. Options for global tobacco control beyond the Framework Convention on Tobacco Control. Addiction. 2010;105(1):1-3.	Ending smoking epidemic (not further specified)	Multiple: smoker licensing, RMM, harm reduction, reduced nicotine, reduced outlets	Proposal	NA	NA	Reduced nicotine could increase exposure to toxicants; new regulatory structures difficult to enact	Regulated	Possible; low nitrosamine smokeless tobacco or high dose recreational clean nicotine products

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Gilmore AB, Branston JR, Sweanor D. The case for OFSMOKE: how tobacco price regulation is needed to promote the health of markets, government revenue and the public. Tob Control. 2010;19(5):423-30.	Regulation to limit tobacco industry profits, use of price as marketing tool	Establish independent regulatory agency to set maximum wholesale prices (not retail price); increase taxes to maintain retail price	Proposal	NA	UK	Reluctance to establish regulatory agency; increased government revenue might reduce incentive for tobacco control measures	Fewer financial resources for marketing & lobbying; subject to greater regulatory scrutiny	No
Givel MS. History of Bhutan's prohibition of cigarettes: Implications for neo-prohibitionists and their critics. Int J Drug Policy. 2011;22(4):306-310.	"Neo-prohibition"	Ban of sale of tobacco; restrictions on imports. Use allowed	Qualitative assessment of Bhutan's experience	Smoking prevalence; black market purchases of tobacco	Bhutan	Black markets	NA	NA
Gray N, Henningfield JE, Benowitz NL, Connolly GN, Dresler C, Fagerstrom K, et al. Toward a comprehensive long term nicotine policy. Tob Control. 2005;14(3):161-5.	Safer products	1) Regulation of all nicotine delivering products; 2) improvement in spectrum of clean nicotine products & reduction in attractiveness of tobacco nicotine products; 3) progressive reduction in nicotine content of cigarettes with clean nicotine freely available as substitute	Proposal	NA	USA	Food and Drug Administration regulation of tobacco	Regulated	Yes
Gray N. Time to change attitudes to tobacco: product regulation over five years? Addiction. 2005;100(5):575-6.	Not defined	Product regulation	Proposal	NA	NA	None mentioned	Regulated/government monopoly	Yes

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Hall W, West R. Thinking about the unthinkable: a de facto prohibition on smoked tobacco products. Addiction. 2008; 103(6):873-4.	De facto prohibition of combustibles	Cap & trade combined w/ nicotine reduction to phase out smoked tobacco products	Proposal	NA	NA	None stated	Regulated; may become focused on "clean" nicotine products	Yes
Hatsukami DK, Benowitz NL, Donny E, Henningfield J, Zeller M. Nicotine Reduction: Strategic Research Plan. Nicotine Tob Res. 2013;15(6):1003-13.	Eliminating or significantly decreasing use of combustible tobacco products	Nicotine reduction in combustible cigarettes to non-reinforcing levels	Review of research priorities and next steps	NA	USA	Black market products; cheating by manufacturers or consumers	Regulated by US Food and Drug Administration	No
Hatsukami DK, Perkins KA, Lesage MG, Ashley DL, Henningfield JE, Benowitz NL, et al. Nicotine reduction revisited: science and future directions. Tob Control. 2010;19(5):e1-10.	Cessation, prevention of tobacco use and addiction, and reduced smoking among smokers who do not quit	Nicotine reduction in combustible cigarettes to non-reinforcing levels	Literature review	NA	USA	Switch to other drugs of abuse; dual use of combustible and smokeless tobacco; smuggling; product tampering; industry cheating	Regulated by US Food and Drug Administration	No
Hayes L, Wakefield MA, Scollo MM. Public opinion about ending the sale of tobacco in Australia. Tob Control. 2013 Jan 8.	Ban on cigarette sales	Phasing out of sales of cigarettes from retail outlets	Telephone survey of adults in Victoria, AU	Support for future cigarette sales ban, ban in 10 years	Australia	Ambiguity re: online sales or homegrown sales ban	Not specified	NA

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Henningfield JE, Benowitz NL, Connolly GN, Davis RM, Gray N, Myers ML, et al. Reducing tobacco addiction through tobacco product regulation. Tob Control. 2004;13(2):132-5.	Less addictive products	Regulation to address addictiveness of tobacco products. (Not a ban on tobacco products; regulated products would retain capacity to sustain addiction)	Proposal	NA	USA	Tobacco industry might use efforts to reduce toxicity as marketing tool.	Regulated by Food and Drug Administration	No
Institute of Medicine. Ending the Tobacco Problem: A Blueprint for the Nation: The National Academies Press; 2007.	Not specified	Strengthen tested approaches; increase federal regulations including disclosure of product contents, improved warning labels, restrict all promotion to "tombstone" style, all prohibit industry contact with youth, reducing and restricting outlets; reducing nicotine/addictiveness of cigarettes.	Review/ proposal	NA	USA	NA	Regulated	NA
Khoo D, Chiam Y, Ng P, Berrick AJ, Koong HN. Phasing-out tobacco: proposal to deny access to tobacco for those born from 2000. Tob Control. 2010;19(5):355-60.	Long-term phase in of total ban on tobacco	Individuals born in or after year 2000 prohibited from tobacco purchase	Proposal	NA	Singapore	Does not address current smokers	Phased out; likely to feel less urgency in lobbying against policy whose impact will be felt in future	No

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
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. N Z Med J. 2010;123(1314):55-67.	Phase out sale of commercial cigarettes and smoking tobacco	Increase tax; cap & trade; reduced nicotine; safer nicotine products	Proposal	NA	New Zealand	Financial inequity; black markets; reliance on as-yet nonexistent new products	Regulation of imports	Yes
Laugesen M. Snuffing out cigarette sales and the smoking deaths epidemic. N Z Med J. 2007;120(1256):U2587.	End of sale/use of smoked tobacco	Replacement with snus; toxicity-based taxation; reduction of nicotine content of cigarettes; encourage smokers to switch; declining smoked tobacco product quotas	Proposal	NA	New Zealand	Slight increased incidence of cancer compared to no tobacco use	Regulated	Yes
Liberman J. The future of tobacco regulation: a response to a proposal for fundamental institutional change. Tob Control. 2006;15(4):333-338.	Safer products	Comprehensive regulation of tobacco products and industry within existing system	Proposal	NA	NA	May be legal impediments to some forms of regulation	Regulated	NA
Liberman J. Where to for tobacco regulation: time for new approaches? Drug Alcohol Rev. 2003;22(4):461-9.	End of for-profit industry	Strong regulation of all aspects of industry with aim of minimizing population harms	Proposal	NA	Australia	None mentioned	Regulated; ultimately dismantled	Probably
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(Suppl. 1):i42-i44.	Death and disease from tobacco virtually eliminated	Nicotine reduction in cigarettes; outlet restrictions; cigarette sales bans	Proposal	NA	USA	Potential for lawsuits	Regulated	Possibly

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Maubach N, Hoek JA, Edwards R, Gifford H, Erick S, Newcombe R. 'The times are changing': New Zealand smokers' perceptions of the tobacco endgame. Tob Control. 2012 Jun 16.	Smoke-free NZ by 2025	Near zero smoking prevalence	Interviews with 47 smokers or recent ex-smokers	Support for 2025 smokefree goal; identification of ways to achieve it	New Zealand	Respondents desired maintaining "freedom" to smoke	NA	NA
Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, et al. Plain Tobacco Packaging: A Systematic Review. London: Public Health Research Consortium; 2012.	Plain (standardized) packaging for cigarettes	Review/proposal	Multiple	Impact of packaging on appeal, salience of health warnings, perceptions of product harm, attitudes, and facilitators and barriers to implementation	Multiple	NA	Regulated	NA
Park J-G, Seo H-G, Jee S-H, Kang H-Y, Suh H-Y, Shim C-J, et al. Banning tobacco. Seoul: Seoul National University Press; 2008.	Ban on manufacture and sale of tobacco products	Legal prohibition on sale and manufacture; free cessation assistance; subsidy to farmers for switching crops; government purchase of manufacturing assets	Proposal	NA	South Korea	Smuggling; damage to tourism industry	Eliminated or reorganised into different industry; compensated for assets	No
Peters MJ. Towards an endgame for tobacco. Aust Fam Physician. 2012 Nov;41(11):862-5.	Elimination of smoking	Outright ban with warning; increased cost/reduced access; additive regulation; nicotine regulation; industry buyout	Review of proposals	NA	Australia	Smuggling; fraud	Eventually eliminated	No

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Proctor RN. Why ban the sale of cigarettes? The case for abolition. Tob Control. 2013;22(Suppl. 1):i27-i30.	Ban combustible cigarettes	Establish bans in states or localities	Historical; tobacco industry documents	NA	USA	NA	Executives repeatedly stated that they would not sell cigarettes if they were proved harmful; proposal "helps industry fulfill its promise."	No
Shahab L, West R. Public support in England for a total ban on the sale of tobacco products. Tob Control. 2010;19(2):143-7.	Tobacco sales ban	Government should work toward banning sale of tobacco completely within next 10 years	Face-to-face interviews with 8,735 respondents in England	Support for tobacco sales ban in 10 years	England	Smuggling and crime may increase; cigarette would still need to be available for those smokers who cannot or do not want to stop smoking	Governments or non-profits may need to purchase tobacco companies to remove resistance to regulation	More widely available non-combustible and clean pharmaceutical products
Sweanor D, Alcabes P, Drucker E. Tobacco harm reduction: how rational public policy could transform a pandemic. Int J Drug Policy. 2007;18(2):70-4.	Safer products	Regulate market to disadvantage higher risk products (i.e., cigarettes)	Proposal	NA	NA	Public health opposition to industry in general and tobacco industry in particular reduces likelihood of implementation	Regulated	Yes
Thomson G, Edwards R, Wilson N, Blakely T. What are the elements of the tobacco endgame? Tob Control. 2012;21(2):293-5.	Final stage of process of ending tobacco use	Effective endgame strategies will have explicit government plan to achieve close to zero tobacco use prevalence and target date within maximum of 2 decades	Definition/ proposal	NA	NA	NA	Oppositional	NA

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Thomson G, Wilson N, Blakely T, Edwards R. Ending appreciable tobacco use in a nation: using a sinking lid on supply. Tob Control. 2010;19(5):431-5.	End of availability of commercial smoked tobacco; near zero smoking prevalence	Reduce smoked tobacco supply quotas to manufacturers and importers, coupled with smoking cessation support, mass media campaigns, and stronger marketing and retailing regulations	Proposal	NA	NA	Non-commercial system may be needed if tobacco industry exits or rigs market. Higher prices may result in smuggling, theft, illegal cultivation for commercial sales, and short term social inequalities	Regulated; ultimately dismantled	Clean nicotine products; limited home-grown product for personal use
Thomson G, Wilson N, Crane J. Rethinking the regulatory framework for tobacco control in New Zealand. N Z Med J. 2005;118(1213):U1405.	Reduce or remove tobacco-related harm by modifying products, changing marketing, offering substitutes, controlling prices, changing arena in which tobacco industry operates	Establish governmental Tobacco Authority to purchase tobacco from manufacturer, paid for by manufacturer (as recommended by Borland 2003)	Proposal	NA	New Zealand	Will be attacked by tobacco industry and its allies	Removed from control of market	Possible concomitant regulation of alternative nicotine sources/devices

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Thomson G, Wilson N, Edwards R. Kiwi support for the end of tobacco sales: New Zealand governments lag behind public support for advanced tobacco control policies. N Z Med J. 2010; 123(1308):106-11.	Ban on cigarette sales	Ban on cigarette sales in 10 years	Face-to-face interviews with 1608 New Zealanders	Support for cigarette sales ban in 10 years	New Zealand	NA	NA	NA
Tobacco Advisory Group of the Royal College of Physicians. Ending tobacco smoking in Britain: Radical strategies for prevention and harm reduction in nicotine addiction. London: Royal College of Physicians; 2008.	End of smoking; subsequently, end of nicotine product use	Establish Nicotine Regulatory Agency to: establish tax/price in line with toxicity; reduce availability of smoked tobacco; reduce price/increase availability of NRT; promote new NRT development; allow access to low hazard harm reduction products (e.g., snus)	Proposal	NA	UK	NA	Regulated; possibly redirected to low hazard products	Yes
Wilson N, Borland R, Weerasekera D, Edwards R, Russell M. Smoker interest in lower harm alternatives to cigarettes: national survey data. Nicotine Tob Res. 2009;11(12):1467-73.	Ban on cigarette sales	Incremental increase in regulation over sales of tobacco product, culminating in ban	Telephone interview with NZ adult smokers	Interest in trying smokeless tobacco products if proven less harmful	New Zealand	NA	NA	Less harmful forms of tobacco

Citation	Definition of endgame goal	Approach	Research method/topic	Outcome measure	Country	Caveats/ drawbacks	Industry	Replacement product needed
Wilson N, Edwards R, Thomson G, Weerasekera D, Talemaitoga A. High support for a tobacco endgame by Pacific peoples who smoke: national survey data. N Z Med J. 2010;123(1316):131-4.	Ban on cigarette sales	Government sets date to ban cigarette sales in 10 years	Survey of smokers in NZ	Support for cigarette sales ban in 10 years	New Zealand	NA	NA	NA
Wilson N, Hoek J, Thomson G, Blakely T, Edwards R. Fifty years since the Royal College Report: more action needed to achieve the "Smokefree New Zealand by 2025" goal. N Z Med J. 2012;125(1351):109-12.	Smokefree New Zealand by 2025 – children protected from exposure to tobacco & minimal risk of starting to smoke	Retailer licensing; plain packaging; sinking lid on sales; other non-tobacco actions – raising alcohol taxes, strengthening alcohol control, 100% smokefree bars & rest., and strengthening local government law-making powers	Proposal	NA	New Zealand	Non-tobacco actions are ancillary; not prioritised above major structural changes	NA	NA
Wilson N, Thomson G, Edwards R, Blakely T. Potential advantages and disadvantages of an endgame strategy: a "sinking lid" on tobacco supply. Tobacco Control. 2013;22(S1):i18-i21.	End of availability of commercial smoked tobacco; near zero (< 1%) smoking prevalence.	Reduce smoked tobacco supply quotas to manufacturers and importers (through government mandates governing sales/import quotas, or available tradeable quotas, perhaps controlled by non-profit agency), coupled with mass media campaigns, price regulation	Proposal	NA	NA	If governments wish to maintain constant revenue streams, other types of taxes may need to be raised as tobacco tax revenue starts to decline; risk of smuggling, theft, and illegal sales as prices rise	Regulated; ultimately dismantled	Residual smokers switched to pharmaceutical grade nicotine products, self-grown tobacco, or government supplied tobacco (via smoker's licence)

*NA=Not applicable

Table 2. Summary of smoking prevalence rates and tobacco control policies in selected nations/jurisdictions

	Adult prevalence	Youth prevalence	Clean Indoor Air Laws	Tax (proportion of retail price) [159]	Retail display/ Retail licensure	Warning labels	Advertising* & Sponsorship
Australia	19.9% (M) 16.3% (F)[160]	3.0% (M) 4.6% (F)[160]	Every state and territory bans smoking in enclosed public places. Indoor environments such as public transit, office buildings, shopping malls, schools and cinemas are smokefree across the country. There is, however, great variability between jurisdictions in terms of exemptions from indoor bans. Regions also have different approaches for managing smoking in outdoor areas.[161]	62.09%	Retail display ban now in all states and territories with the exception of specialist tobacconists.	Standardised packaging; Graphic warning labels must cover 75 per cent of the front and 90 per cent of the back of a cigarette packet.[162]	Generally not allowed (some exceptions for internet advertisements, sponsorship, and sponsorship publicity)[163]
New Zealand	19.4% (M) 17.5% (F)[164]	7.0% (M) 9.3% (F)[164]	From December 2004, all indoor workplaces became 100 percent smokefree. This included: -warehouses, offices, factories and shops, work cafeterias, dedicated smoking rooms and smoko rooms, corridors, lifts, lobbies, stairwells, toilets and wash rooms or other shared internal areas -hospitality venues (including licensed clubs, restaurants, casinos and gaming machine venues) working taxis, trains, aircraft, passenger lounges and indoor parts of ships -schools and early childhood centres. The only exception for a separately ventilated smoking room is for live-in patients or residents (not workers or visitors) in certain care facilities.[165]	69.11%	Tobacco display ban came into force on 23rd July 2012.	Graphic warning labels must cover 30% of the front and 90% of the back of a cigarette packet.[164]	Generally not allowed (some exceptions for sponsorship, and sponsorship publicity)[163]
Finland	28.6% (M) 20.0% (F)[166]	4% (M) 6% (F)[166]	In 1995 smoking became prohibited at workplaces, and in 1999, restrictions were imposed on smoking in restaurants. The most recent reform of the Tobacco Act was enacted in June 2006. The new act bans smoking in pubs and restaurants, except in specific closed and ventilated	75.07%	Display of tobacco products banned from 1st January 2012 [168]	Text warnings cover 39% of the pack, (32% front, 45% back)[166]	Not allowed[169]

			rooms where food or drink are not permitted.[167]				
Singapore	27.9% (M) 5.0% (F)[170]	8.0% (M) 5.0% (F)[170]	Smoking is prohibited in shops, universities and vocational facilities, cultural facilities, and hospitals and other healthcare facilities. Although smoking is prohibited in some indoor public places and workplaces, designated smoking areas can be established in many workplaces, government buildings, hawker centers (establishments where food is prepared, stored, or sold), and public transport facilities, among others.[171]	73.76%	Display ban proposed.[172]	Graphic labels, 50% of front and back.[170] Starting March 2013, descriptions such as 'mild' and 'light' will be banned. In addition, a new expanded set of graphic health warnings will be introduced.[173]	Sponsorship permitted; advertising not allowed, with some exceptions for sponsorship publicity[163]
Canada	19.7% (M) 15.0% (F)[174]	2.8% (M) 2.7% (F)[174]	Under the federal Non-smokers' Health Act (NSHA) and its regulations (NSHR), smoking is prohibited in all federal government workplaces, with a few limited exceptions for residential spaces and workspaces to which only one person normally has access during a shift (such as vehicular workspaces). Other workplaces and public places fall under the jurisdiction of the provinces, territories, and municipalities. Under sub-national legislation, smoking is prohibited in virtually all indoor public places and workplaces with the limited exception of designated smoking rooms in group living facilities, long-term care facilities, and specified hotel rooms.[175]	69.27%	Display ban now in place for all provinces and territories.	Canada's warning labels now cover 75 per cent of the front and 75 per cent of the back of cigarette packages.[174]	Advertising generally not allowed, with exceptions for adult only venues and majority adult (85%) magazines; sponsorship permitted but sponsorship publicity banned.[163]
California	12.7%[176]	4.8% (grades 7-9) 13.8% (10-12)[177]	California prohibits smoking in restaurants and bars, and in most other workplaces.	36.93% (US)	No display regulations.	No graphic warning labels.	Television, radio and billboard ads banned; most sponsorship banned.

Key informants

- Amanda Amos, Professor of Health Promotion, University of Edinburgh
- Fiona Andrews, Director, Smokefree South West
- Deborah Arnott, Chief Executive, Action on Smoking and Health
- Linda Bauld, Professor of Health Policy, University of Stirling and UK Centre for Tobacco Control
- Robert Beaglehole, Professor Emeritus, Community Health, University of Auckland
- Jon Berrick, Professor, National University of Singapore
- Ron Borland, Nigel Gray Distinguished Fellow in Cancer Prevention, Cancer Council Victoria
- John Britton, Professor of Epidemiology, University of Nottingham and Director, UK Centre for Tobacco and Alcohol Studies
- Chris Bullen, Director, National Institute of Health Innovation, New Zealand
- Cynthia Callard, Executive Director, Physicians for a Smokefree Canada
- Simon Chapman, Professor, School of Public Health, University of Sydney
- Alison Cox, Tobacco Control Lead, Cancer Research UK
- Andrea Crossfield, Director, Tobacco Free Futures, UK
- Mike Daube, Professor of Health Policy, Curtin University & President, Australian Council on Smoking and Health
- Anita Dessaix, Manger, Cancer Prevention, Cancer Institute of New South Wales
- Sheila Duffy, Chief Executive, Action on Smoking and Health Scotland
- Richard Edwards, Professor of Public Health, University of Otago & Director, ASPIRE 2025
- Becky Freeman, Lecturer, School of Public Health, University of Sydney
- Coral Gartner, Research Fellow, Centre for Clinical Research, University of Queensland
- Anna Gilmore, Director, Tobacco Control Research Group, University of Bath
- Marewa Glover, Director, Tobacco Control Research Turanga
- James K.H. Goh, National University of Singapore
- Paul Grogan, Director of Advocacy, Cancer Council Australia
- Wayne Hall, Professor, University of Queensland Centre for Clinical Research
- Mervi Hara, Executive Director, Action on Smoking and Health Finland
- Gerard Hastings, Director, Institute for Social Marketing & Cancer Research UK Centre for Tobacco Control Research
- Heikki Hiilamo, Research Professor, Social Insurance Institution of Finland
- Janet Hoek, Professor of Marketing, University of Otago
- Ho Gay Hui, Senior Consultant, Surgical Oncology, National Cancer Centre, Singapore
- Anne Jones, Chief Executive, Action on Smoking and Health, Australia
- Winston Tay Aik Keong, National Cancer Centre Singapore
- Skye Kimura-Paul, Health Promotion Advisor, Tobacco Control, Cancer Society New Zealand
- Jean King, Director of Strategic Projects, Cancer Research UK

- Yiwen Koh, National University of Singapore
- Richard Kwong, Senior Policy Strategist, Strategic Planning and Policy Unit, Tobacco Control Branch, California Department of Public Health
- Mayanne Lafontaine, Manager, Tobacco Control, Cancer Institute of New South Wales
- Jonathan Liberman, Director, McCabe Center for Law and Cancer
- Ann McNeill, Deputy Director, UK Centre for Tobacco and Alcohol Studies
- Rob Moodie, Professor of Public Health, Melbourne School of Population Health
- Koong Heng Nung, Head of the National Cancer Centre's Department of Surgical Oncology, Singapore
- Mandy Ow, National University of Singapore
- Kristiina Patja, Tobacco Free Finland Network
- Jan Pearson, Deputy Chief Executive, Cancer Society New Zealand & Chair, National Smokefree Working Group
- April Roeseler, Chief of Programs and Media Operations for the California Tobacco Control Program, California Department of Public Health
- Colleen Stevens, Branch Chief, Tobacco Control Branch, California Department of Public Health
- Layla Theiner, Head of Public Affairs & Campaigns, Cancer Research UK
- Francis Thompson, Director of Policy and Advocacy, the Framework Convention Alliance & Tobacco Control Advisor, HealthBridge
- Ismo Tuominen, Ministerial Counselor, Legal Affairs, Department for Promotion of Welfare and Health, Ministry of Social Affairs and Health, Finland
- Melanie Wakefield, Director, Center for Behavioural Research in Cancer, Cancer Council Victoria
- Robert West, Professor of Health Psychology and Director of Tobacco Studies, University College London
- Nick Wilson, Professor of Public Health, University of Otago
- Grace Wong, Director, Smokefree Nurses New Zealand/Aotearoa
- Ben Youdan, Director, Action on Smoking and Health New Zealand

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