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# Large-scale unassisted smoking cessation over 50 years: lessons from history for endgame planning in tobacco control

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**ABSTRACT**

In the 50 years since the twentieth century's smoking epidemic began to decline from the beginning of the 1960s, hundreds of millions of smokers around the world have stopped smoking permanently. Overwhelmingly, most stopped without any formal assistance in the form of medication or professional assistance, including many millions of former heavy smokers. Nascent discussion about national and global tobacco endgame scenarios is dominated by an assumption that transitioning from cigarettes to alternative forms of potent, consumer-acceptable forms of nicotine will be essential to the success of endgames. This appears to uncritically assume (1) the hardening hypothesis: that as smoking prevalence moves toward and below 10%, the remaining smokers will be mostly deeply addicted, and will be largely unable to stop smoking unless they are able to move to other forms of 'clean' nicotine addiction such as e-cigarettes and more potent forms of nicotine replacement; and (2) an overly medicalised view of smoking cessation that sees unassisted cessation as both inefficient and inhumane. In this paper, we question these assumptions. We also note that some vanguard nations which continue to experience declining smoking prevalence have long banned smokeless tobacco and non-therapeutic forms of nicotine delivery. We argue that there are potentially risky consequences of unravelling such bans when history suggests that large-scale cessation is demonstrably possible.

Tobacco control has been intrigued with the possibilities of less harmful products since the 1960s.<sup>1</sup> At the core of prominent contemporary endgame strategies for reducing and eventually ending combusted tobacco use, is a conviction that it is essential for parallel 'cleaner' nicotine delivery regimes to be established to allow smokers to switch. Should regulatory reforms be enacted to either make cigarettes significantly less addictive,<sup>2,3</sup> prohibitively expensive or eventually abolished,<sup>4</sup> it is assumed that many smokers will still crave nicotine, and that ethically non-malevolent policy would require governments to ensure that alternative, sufficiently potent nicotine delivery systems are readily available, with care taken that unintended adverse consequences are minimised, such as dual use,<sup>5</sup> slowing the decline in smoking cessation and increasing youth uptake.

We believe that this sweeping assumption is being powerfully conditioned by commercially driven, often duplicitous hype accompanying the recent emergence of an ever-growing range of

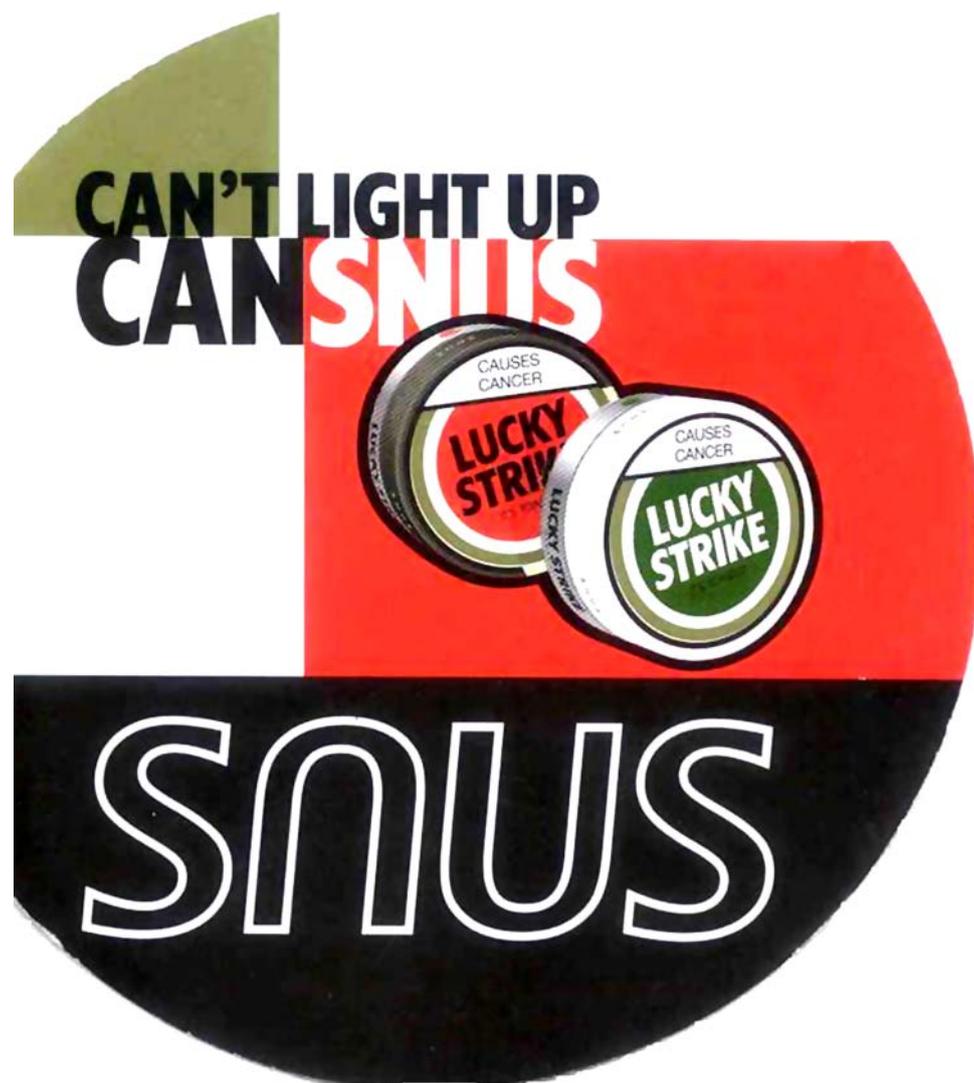
non-combustible, significantly reduced-risk nicotine delivery systems. It is also being sustained by two factors needing critical attention: (1) an unfortunate historical amnesia or ignorance in tobacco control circles about the experience of hundreds of millions of former smokers who stopped smoking permanently without recourse to such alternative sources of nicotine prior to and since their availability and (2) the intuitively and persistently seductive power of the hardening hypothesis, with its assumption that as smoking prevalence declines, those still smoking are mostly hardcore, heavily nicotine-dependent smokers who cannot or will not stop using nicotine. Below, we consider problems arising from the dominance of these mindsets.

**MIGRATION TO CLEAN NICOTINE OR DUAL USE?**

As more consumer-acceptable nicotine delivery systems emerge, advocates for the parallel availability of alternative sources of nicotine assume that there will be wholesale movement away from cigarettes. Yet, drift to such alternative products will rely on radical shifts in consumer demand in contexts where cigarettes will remain concurrently available. Importantly here, no nation has announced a future ban on combustible tobacco (talk of smoke-free nations remains aspirational statements of hope) and no tobacco company has announced a wind-down in cigarette production, nor desisted from virulent opposition to policies that reduce smoking. A conclusion is unavoidable that the industry hopes to capitalise on harm-reduction sentiment by orchestrating the attainment of a richly rewarding dual use goal. Here, many smokers would continue smoking (highly profitable) cigarettes in all circumstances where this was possible, while also using non-combustible products in smoke-free contexts (see figure 1). This would renormalise tobacco product use across the day previously characterised by large swathes of time where nicotine was not being used.

The investment advisors, Citigroup, are clear on the potential for dual use: 'The [retail] trade believes that snus will be consumed in addition to cigarettes. Given the increased bans on smoking, snus products seem like an obvious substitution'.<sup>6</sup> Sentiments echoed in the US retail trade newsletter *Brandweek*: 'There's money to be made from municipal smoking bans as another cigarette maker chases after smokers who get their nicotine fix between their cheek and gum during those many

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**Figure 1** Promotion of dual use in South Africa, 2006.

moments when they can't light up'.<sup>7</sup> When harm-reduced products carry the same brand names as cigarettes, the potential for mutual reinforcement is obvious.

There is evidence that substantial dual use is already occurring.<sup>8,9</sup> Harm reduction advocates argue that this is best understood as a transitory phase toward exclusive harm-reduced product use or, eventually, cessation of all nicotine products, but the tobacco industry would have other ideas. Of all alternative nicotine delivery systems, e-cigarettes (note the category description) which involve traditional cigarette flavours (eg. classic tobacco and menthol), a glowing light-emitting diode (LED) tip evoking cigarettes, an exhalable vapour and frequent public display of the hand-to-mouth, theatrically semiotic exhaling and cigarette gesticulating 'smoking performance', seem most likely to risk cuing and reinforcing the attractions of smoking cigarettes. These very cigarette-like factors that make them more attractive to some smokers than other alternative forms of nicotine delivery (gum, patch, inhaler) combine in the über-cool 'look at me, I'm smoking!' public display, which is part of the attraction for young people to cigarette smoking. Social events and clubs set up explicitly for vaping are becoming common (Google returned 5630 hits for 'vaping club' on 6 December 2012), while nicotine patch or gum clubs are unheard of. E-cigarettes have seen advertising for smoking return to US

television for the first time in decades (see cigarette manufacturer Lorillard's *Blu* here [http://www.youtube.com/watch?v=VZishwAt\\_RM](http://www.youtube.com/watch?v=VZishwAt_RM) with its laughable caveat 'Viewers of this video and all blu videos must be 18 years of age or older' and 'reclaim the night for freedom' battle cry).

We consider it naïve to imagine that the tobacco industry would ever voluntarily take steps to reduce combustible tobacco use for as long as it remained highly profitable. If the industry's goal of dual use was achieved, this could be a harm-increasing outcome when assessed against the status quo of ever-declining smoking prevalence. Providing and encouraging access to highly addictive 'clean nicotine' products in smoking downtimes will sustain blood nicotine levels that will also be readily satisfied with cigarettes at times when these can be consumed. With the industry intent on promoting dual use, such a scenario may risk stalling the decline in smoking, as it has long been known that smokefree workplaces promote not only decreased consumption but cessation.<sup>10,11</sup>

#### HISTORICAL AMNESIA ABOUT PRE-NICOTINE REPLACEMENT THERAPY CESSATION

The assumption that it is somehow necessary to have an alternative 'clean' nicotine safety net for quitters is repudiated by decades of real-world evidence involving hundreds of millions

of ex-smokers globally who did not require such a pathway out of smoking. Smoking prevalence began declining from the early 1960s in most anglophone nations some 20 years before nicotine replacement therapy (NRT) became available by prescription and then over the counter. The declines generally commenced later and proceeded more slowly in other nations. Between 1965 and 1987 in the USA, the proportion of ex-smokers to ever-smokers (the quit ratio) grew from 29.6% to 44.8%. In university graduates, it grew from 39.7% to a remarkable 61.4%.<sup>12</sup> The American Cancer Society estimated in 1986—26 years ago—that ‘over 90% of the estimated 37 million people who have stopped smoking in this country since the Surgeon General’s first report linking smoking to cancer have done so unaided’.<sup>13</sup>

Those insisting that it is somehow obvious that non-combusted nicotine should be an essential accompaniment to mass cessation seem to have either forgotten or are ignorant of the history of how this massive phenomenon occurred: for 25 years, in the absence of NRT, and thereafter, largely in spite of its increased availability.<sup>14</sup> Even today, despite 20 years of massive marketing efforts by pharmaceutical companies and the dominance of assisted cessation within the smoking cessation community,<sup>15</sup> in the USA, unassisted cessation today produces 2.8 times more successful quit attempts than are attributable to NRT.<sup>16</sup>

#### THE SEDUCTIVE POWER OF THE HARDENING HYPOTHESIS

Data on smoking in 50 US states for 2006–2007 indicate that the mean number of cigarettes smoked daily, the percentage of cigarette smokers who smoke within 30 min of waking, and the percentage who smoke daily are all significantly lower in states with low smoking prevalence.<sup>17</sup> Further, there has been a dramatic decline in heavy smoking in the USA.<sup>18</sup> This is compelling evidence against the hardening hypothesis which would predict exactly the opposite. Australian data also show that the proportion of smokers with mental health problems has not increased in a decade when smoking prevalence continued to fall.<sup>19</sup> Recent reviews and commentaries have concluded there is no evidence of hardening in the general population.<sup>20 21</sup>

Yet, the hardening hypothesis remains a stubborn subtext beneath many futuristic scenarios, invoking notions of an ever-desperate heavily addicted smoking population impervious to population-wide policies and programs and who, therefore, will need a clean nicotine safety net.

#### CONCLUSION

In light of the cautions we have outlined, nations which have banned or seriously restricted access to alternative nicotine delivery systems (eg, the European Union, New Zealand, Brazil, Australia, Oman, Singapore, Thailand) would be wise to take great care before considering unravelling their smokeless bans.<sup>22</sup> Equally, those considering further liberalisation of access might want to consider the wisdom of doing so. With such differences, a global natural experiment is underway where data from some nations which have banned or restricted access to harm-reduction products might be compared with those which have embraced them. Long-term changes in tobacco-caused disease incidence rates will be the ultimate reference point in such comparisons, but sustained and increasing declines in smoking prevalence will be a faster indicator of harm reduction products’ net contribution to improved public health.

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#### REFERENCES

- 1 Parascandola M. Lessons from the history of tobacco harm reduction: The National Cancer Institute’s Smoking and Health program and the “less hazardous cigarette”. *Nicotine Tob Res* 2005;7:779–89.
- 2 Benowitz NL, Dains KM, Hall SM, *et al.* III. Smoking behavior and exposure to tobacco toxicants during 6 months of smoking progressively reduced nicotine content cigarettes. *Cancer Epidemiol Biomarkers Prev* 2012;21:761–9.
- 3 Hatsukami DK, Kotlyar M, Hertsgaard LA, *et al.* Reduced nicotine content cigarettes: effects on toxicant exposure, dependence and cessation. *Addiction* 2010;105:343–55.
- 4 Proctor RN. *Golden holocaust. Origins of the cigarette catastrophe and the case for abolition.* Berkeley: University of California Press, 2012.
- 5 Rath JM, Villanti AC, Abrams DB, *et al.* Patterns of tobacco use and dual use in US young adults: the missing link between youth prevention and adult cessation. *J Environ Public Health* 2012;2012:679134.
- 6 Herzog B. *Industry in-depth. Tobacco.* New York: Citigroup, 2007.
- 7 Beirne M. Philip Morris expands smokeless tobacco line. 2007. Brandweek.com. [http://www.brandweek.com/bw/news/recent\\_display.jsp?vnu\\_content\\_id=1003597188](http://www.brandweek.com/bw/news/recent_display.jsp?vnu_content_id=1003597188) (accessed 1 Oct 2007).
- 8 Grøtvedt L, Forsén L, Stavem K, *et al.* Patterns of snus and cigarette use: a study of Norwegian men followed from age 16 to 19. *Tob Control* 2012. Published Online First: 26 May 2012. doi:10.1136/tobaccocontrol-2011-050158
- 9 Rantao M, Ayo-Yusuf OA. Dual use of cigarettes and smokeless tobacco among South African adolescents. *Am J Health Behav* 2012;36:124–33.
- 10 Chapman S, Borland R, Brownson R, *et al.* The impact of workplace smoking bans on declining cigarette consumption in Australia and the USA. *Am J Public Health* 1999;89:1018–23.
- 11 Fichtenberg CM, Glantz SA. Effect of smoke-free workplaces on smoking behaviour: systematic review. *BMJ* 2002;325:188–91.
- 12 U.S. Department of Health and Human Services. Reducing the Health Consequences of Smoking: 25 years of progress. *A report of the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. DHHS Publication No. (CDC) 89-8411, Jan 11, 1989.
- 13 American Cancer Society. *Cancer facts and figures.* New York, New York: American Cancer Society, 1986.
- 14 Wakefield MA, Durkin S, Spittal M, *et al.* Impact of tobacco control policies and mass media campaigns on monthly adult smoking prevalence: time series analysis. *Am J Public Health* 2008;98:1443–50.
- 15 Chapman S, Mackenzie R. The global research neglect of unassisted smoking cessation: causes and consequences. *PLoS Medicine* 2010;7:e1000216.
- 16 Shiffman S, Brockwell SE, Pillitteri JL, *et al.* Use of smoking-cessation treatments in the United States. *Am J Prev Med* 2008;34:102–11.
- 17 Pierce JP, Messer K, White MM, *et al.* Prevalence of heavy smoking in California and the United States, 1965–2007. *JAMA* 2011;305:1106–12.
- 18 Giovino GA, Chaloupka FJ, Hartman AM, *et al.* *Cigarette smoking prevalence and policies in the 50 States: an era of change—the Robert Wood Johnson Foundation Impact Teen Tobacco Chartbook.* Buffalo: University at Buffalo, State University of New York, 2009.
- 19 Mathews R, Hall WD, Gartner CE. Is there evidence of ‘hardening’ among Australian smokers between 1997 and 2007? Analyses of the Australian National Surveys of Mental Health and Well-Being. *Aust N Z J Psychiatry* 2010;44:1132–6.
- 20 Hughes JR. The hardening hypothesis: is the ability to quit decreasing due to increasing nicotine dependence? A review and commentary. *Drug Alcohol Depend* 2011;117:111–17.
- 21 Cohen JE, McDonald PW, Selby P. Softening up on the hardening hypothesis. *Tob Control* 2012;21:265–6.
- 22 Chapman S. Repealing Australia’s ban on smokeless tobacco? Hasten slowly. *Med J Aust* 2008;188:47–9.