

# Birthdate-based commercial tobacco sales restrictions: will 'tobacco-free generation' policies advance or delay the endgame?

Ruth E Malone , Tim McAfee 

Social and Behavioral Sciences,  
University of California San  
Francisco School of Nursing, San  
Francisco, California, USA

## Correspondence to

Dr Ruth E Malone, Social and  
Behavioral Sciences, University  
of California San Francisco, San  
Francisco, CA 94118, USA;  
ruth.malone@ucsf.edu

Received 15 March 2024

Accepted 28 May 2024

## ABSTRACT

Endgame thinking means transitioning from merely trying to 'control' the tobacco epidemic to developing plans and measures to bring it to an end within a specific time, by changing the underlying dynamics that have created and perpetuated it for more than a century. Among the innovative policies characterised as 'endgame' policies are so-called 'tobacco-free generation' or 'smoke-free generation' policies, which prohibit sales of some or all tobacco products to individuals born on or after a particular date. Such birthdate-based sales restrictions (BSR) have intuitive appeal, largely because they do not appreciably disrupt the status quo of retail sales, which continue unchanged for all those born before the designated cut-off date. They also hold the potential for further denormalising tobacco use and sales by anticipating the long-term end of tobacco sales. In this Special Communication, we analyse BSR policies through an endgame lens and propose questions that should be discussed in jurisdictions considering them. We suggest that this policy has potential underexamined pitfalls, particularly related to equity, and that if enacted, it should include policy guardrails and be part of a package of endgame measures.

## INTRODUCTION

As many jurisdictions in the USA and globally transition from a paradigm of tobacco 'control' to tobacco 'endgame',<sup>1–5</sup> a range of innovative policy proposals aimed at reducing or eliminating retail sales of commercial tobacco products has emerged, several of which have been enacted or introduced. These include limiting retail outlets by location, density or retailer type<sup>6</sup> as well as rapidly or slowly phasing out sales of some or all types of commercial tobacco products completely.<sup>7</sup> Birthdate-based sales restriction (henceforth BSR) proposals are the slowest form of sales phase-out, in which the retail sale of some or all commercial tobacco products to any person born after a specified date is prohibited (see [box 1](#)). 'Tobacco-Free Generation' (TFG), a form of BSR in which the sale of all tobacco products becomes illegal based on birthdate, was first proposed by Singapore researchers in 2010.<sup>8,9</sup> Such a policy eliminates the notions, associated with age-based restrictions, that there is a 'safe age' to begin use of tobacco products, and that tobacco use is part of 'coming of age'. A TFG BSR has been enacted and defended against court challenges in Brookline, Massachusetts,<sup>10</sup> at time of publication has been passed in six other Massachusetts communities, and a 'Smoke-Free Generation' (SFG) BSR

## WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ A range of innovative policies, up to and including bans on sales of tobacco products, have been proposed to achieve tobacco endgame goals.
- ⇒ Among these, birthdate-based sales restrictions (BSR) have generated recent interest, having been passed and defended in one small US city, passed in six others to date, passed and then repealed in New Zealand and passed in the lower house of Parliament in the UK prior to new elections being called.

## WHAT THIS STUDY ADDS

- ⇒ This Special Communication analyses the public health, political, equity and practical implications of BSR as an endgame policy.

## HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ Jurisdictions considering BSR policies should consider all potential sales restriction and endgame policies. Ideally, if enacted, a BSR policy should be part of a package of endgame measures that address equity and practical concerns discussed here and more expeditiously change the underlying dynamics that sustain the tobacco epidemic.

was recently included in New Zealand's comprehensive Smokefree 2025 plan<sup>11</sup> (limited to smoked products and now repealed under a new government). A BSR policy for smoked tobacco products has been passed by the lower house of Parliament in the UK.<sup>12–14</sup> Variations on BSR policies have also been proposed elsewhere, including Tasmania, Australia; the Philippines and three US states.<sup>15–20</sup>

BSR policy has intuitive appeal for several reasons, including its effect of increasing the age of sale for tobacco products yearly, its minimal immediate impact on tobacco retailers and adults currently using tobacco (thus possibly decreasing opposition) and its political palatability, with its initial focus on youth and minimal immediate impact on government revenue from excise taxes. BSR draws a birthdate 'line in the sand' after which legal tobacco product sales will be ended. Advocacy for the policy could engage youth, parents and schools. If effectively implemented and enforced, the policy would theoretically result in an ageing out of tobacco use and after many decades an eventual complete end to legal sales as those born before



© Author(s) (or their  
employer(s)) 2024. No  
commercial re-use. See rights  
and permissions. Published  
by BMJ.

**To cite:** Malone RE,  
McAfee T. *Tob Control* Epub  
ahead of print: [please  
include Day Month Year].  
doi:10.1136/tc-2024-058716

## Box 1 Terminology

The original formulation of a birthdate-based (rather than age) sales restriction was characterised as a 'Tobacco-free Generation' (TFG) measure. Since that time, given the proliferation of newly introduced commercial, non-combustible nicotine and synthetic nicotine products, and recognising that for some Native American/Indigenous communities tobacco is a sacred plant, some have proposed a commercial 'Nicotine-free Generation' (NFG) to cover sales of other addictive commercial products but exclude ceremonial and medicinal use. In the USA, all nicotine-containing products are subject to regulation by the Food and Drug Administration as tobacco products, but other countries parse and regulate the range of products differently. For example, the UK has proposed a 'Smoke-free Generation' (SFG) policy that may cover combustibles but not vaping products. These variations of birthdate-based sales restriction (BSR) policies will have different potential impacts. In this paper, we use BSR as an umbrella term for these types of policies, using the other terms when referring to specific policies that include or exclude various products.

the selected birthdate stop using the products or die. Thus, BSR as an endgame strategy anticipates the eventual end of selling tobacco as a 'normal' consumer product. However, persons born before the birthdate cut-off, including those who use tobacco currently, would not be directly impacted, and no specific change is required to the physical retail sales ecosystem.

The purpose of this Special Communication is to analyse the potential effects of BSR policies and propose questions by which to evaluate whether they are likely to advance or delay achieving tobacco endgame in general, as well as based on a particular jurisdiction's characteristics.

### IS BSR AN ENDGAME POLICY?

In this paper, we use endgame to mean policies that *change permanently the structural, political and social dynamics that sustain the commercial tobacco epidemic, in order to end it within a specified time*.<sup>34</sup> Arguably, BSR is an endgame policy, as it aims to permanently end legal access to tobacco once all people born before the designated birthdate have died or quit, which could be considered a structural change. However, because of its very slow impact, even if rigorously enforced the policy leaves intact the current systems of retail availability for everyone else. As with other sales restrictions, the extent of change in the sustaining dynamics may also depend on the size and location of the jurisdiction and what products are covered. BSR makes only gradual changes to the structural, political and social dynamics that sustain the epidemic, as the population to whom the products may be legally sold grows older and the use of the products perhaps appears less appealing to young adults.

It is possible that, as time passes and fewer people can legally be sold tobacco products, further reductions in retailer numbers or density could follow as some retailers find sales declining, less profitable or not worth the hassle of regulatory compliance. However, it is also possible that given a decades-long cushion, the tobacco industry and retailers will take advantage of their historic ability to manipulate political systems, and succeed in watering down or eliminating requirements. For example, in the recent case of New Zealand's comprehensive set of endgame policies, including the SFG BSR policy, the entire package was eliminated after a new, more industry-friendly government took

office.<sup>21</sup> History suggests if the industry is unable to directly eliminate policy provisions, they will develop workarounds, taking advantage of loopholes or gaps in laws. Examples include recent industry responses to the menthol ban in California, which have included both packaging and product chemistry innovations mimicking menthol effects,<sup>22 23</sup> coupon campaigns intended to blunt the impact of tax-related price increases,<sup>24</sup> introduction of new products<sup>25</sup> and pricing strategies to minimise the effect of new taxes, especially for lower priced products.<sup>26</sup> Since like many endgame policies the BSR policy has yet to be fully evaluated anywhere, it is possible there may be other unanticipated benefits or risks.

Overall, *as an endgame policy*, compared with other proposed policies BSR is the temporally weakest and least disruptive to the status quo, allowing the tobacco industry to continue promoting lethal products, retailers to continue selling them and permitting the tobacco epidemic to continue for decades as the eligible-to-buy population gradually declines. For example, a modelling study from Singapore<sup>27</sup> found that a BSR-type policy alone would achieve an endgame target of 5% smoking prevalence only after 39 years, compared with combining nicotine reduction and a flavour ban, which were projected to achieve it within a decade.

### EVALUATING THE SUITABILITY OF BSR AS AN ENDGAME POLICY IN A JURISDICTION

BSR's intentionally slow trajectory suggests that jurisdictions wanting to work towards a tobacco endgame should consider the characteristics of their jurisdiction in deciding whether to pursue BSR versus more immediate sales-related endgame policies such as reducing retailer numbers or density rapidly, or banning the sale of some or all tobacco products. Below, we discuss some questions to consider that may be helpful in making this determination.

#### Has the jurisdiction passed and effectively implemented other tobacco control policies (such as smoke-free measures, retail licensure, flavour sales bans, tax increases and/or cessation support)?

If so, the community may be ready to move faster towards an endgame than BSR permits. Jurisdictions with a strong history of supporting tobacco control may be ready to undertake stronger endgame retail sales policies, including substantial reductions in retailer density and/or numbers (ie, 95%), as were included in New Zealand's law, and shorter term phase-outs of tobacco sales such as were implemented in Beverly Hills and Manhattan Beach in California.<sup>28 29</sup> In such jurisdictions, passing a stand-alone BSR policy could potentially consume advocacy resources and political capital that could be better devoted to achieving stronger measures. If policymakers feel passage of BSR has 'fixed' the problem, it could unnecessarily delay for decades more definitive measures (such as the rapid retail restrictions noted above, any of which would make actual structural changes to the tobacco-promoting environment, reducing exposure to tobacco-promoting cues).

Jurisdictions without a history of passing and implementing tobacco control policies may want to consider carefully whether a BSR ordinance is feasible politically and practically. For example, if a jurisdiction has no tobacco retail licensing, BSR may be harder to defend legally, and be more difficult to enforce because there is no mechanism for identifying the subset of retailers who did or might sell tobacco products. In addition, it is possible that other intermediate tobacco control measures that take effect

immediately and often have strong public support might have more impact, such as increased clean indoor air restrictions, price minimums and restrictions on retailer location, density and type. Outside the USA, which has extended 'freedom of speech' to commercial enterprises, further restricting marketing and advertising of tobacco products may also be a feasible and effective endgame-furthering option.

### **Are existing retail tobacco policies rigorously and effectively enforced?**

If ongoing enforcement remains problematic for already existing policies (eg, retail sales to minors or flavoured product sales are continuing despite the policies), then it may be unlikely that a BSR policy will achieve the desired effects unless retailer education, compliance and enforcement infrastructure and penalties are ramped up substantially. If penalties for non-compliance are not robust, including both monetary fines and potential loss of retail licensure, non-compliance consequences may be seen by retailers as a 'cost of doing business'. Legislation and regulations should, as a best practice, focus enforcement and penalties on the commercial tobacco ecosystem, not individual users.

### **Is the jurisdiction strongly antiregulatory?**

In strongly antiregulatory jurisdictions, it is challenging to build community and policymaker support for *any* new government policies that constrain the private sector or appear to restrict individual behaviours. BSR, with its focus on youth as those who cannot now legally purchase tobacco, might theoretically be more politically palatable under such circumstances and, if rigorously enforced, could serve as a first step towards an eventual tobacco endgame.

However, it is only a hypothesis that BSRs will be more politically palatable in such jurisdictions than other types of product sales restrictions, such as restricting sales to adult-only, tobacco-only stores or more rapid (1–5 years) sales restrictions. Also, since enforcement of Tobacco 21 (T21) minimum age to purchase laws is already variable in the US, it is not clear that the BSR approach would inherently improve compliance more than increased resources and stronger commitment to enforcement.

### **Is a BSR approach necessary to have sufficient support to pass endgame policy?**

It is possible that some policymakers may be more likely to support a BSR policy than faster sales restriction policies. But this does not mean that the same holds true for the general public. A recent US Centers for Disease Control and Prevention (CDC) survey suggests solid majorities of adults in the USA support full bans on the sale of tobacco products, with no requirement for a half-century phase-out; 57% of respondents to a 2021 CDC survey indicated they support 'a policy to prohibit the sale of all tobacco products' with no mention of time frame.<sup>30</sup> In a 2022 California survey to inform media messaging, 70% indicated they agreed/strongly agreed that 'Cigarette sales should be phased out completely over the next 5 years'.<sup>31</sup> The California Adult Tobacco Survey<sup>32</sup> found that in 2023, support for a 'gradual' ban on tobacco sales (no time frame specified) and support for a BSR/TFG policy were identical (60.9%). In earlier survey waves (not all questions were asked in all waves, nor consistently asked, so results are not necessarily comparable), lower levels of support (35–40%) were found for 'an immediate ban on the sale of cigarettes'. Additional questions, including regarding BSR, are being developed and pretested for improved clarity.

Public support for sales ban measures encompassing all or some tobacco products varies globally<sup>33–35</sup> but is surprisingly high, given that no public campaigns to build support for such a measure have yet been undertaken. Thus, although support for an 'immediate' sales ban may appear weaker, one need not assume that a phase-out of 50+ years is needed to gain public support for ending retail sale of commercial tobacco products. Conducting local key informant interviews, surveys or focus groups may help determine whether people in the jurisdiction differ from those in state or national surveys in their support for sales ban policies.

### **Is pre-emption explicitly addressed and does the bill or ordinance encourage or also include more restrictive measures?**

Under current US law, state and local jurisdictions are explicitly permitted to end the sales of tobacco products unless the local jurisdictions are pre-empted from doing so, as the federal Family Smoking Prevention and Tobacco Control Act<sup>36</sup> reserves to them the right to regulate and even ban sales of all or some tobacco products.<sup>37</sup> A 'tobacco-free generation' BSR policy enacted in Massachusetts was unsuccessfully challenged in court on the basis of pre-emption claims, but the tobacco industry and its surrogates continue to attempt to insert pre-emption language into tobacco policies, trying to preclude any later introduction of stronger measures. Research shows that the industry pursued this strategy on T21 policies in the USA, often blindsiding tobacco control advocates by supporting or proposing T21 bills with weak and pre-emptive language.<sup>38</sup> Globally, in addition to any pre-emption limitations at the subnational level, the tobacco industry has been working to include provisions that pre-empt domestic authority over tobacco policy.<sup>39</sup> Pre-emption will likely be an issue for any endgame policy, but the slow trajectory of BSR policy impact means that positive effects could be attenuated if pre-emption language (either through explicit inclusion or through legislative silence) is deployed to preclude further action on tobacco retailing over the ensuing decades.

### **Will BSR, if passed, reduce or increase health inequities in the jurisdiction?**

Because BSR has no direct effect on reducing the accessibility, availability and attractiveness of tobacco products for consumers born before the birthdate cut-off, without additional concurrent interventions it may entrench and worsen (or at minimum do nothing to ameliorate) already existing tobacco-caused health inequities. Communities traditionally preyed on by the tobacco industry, evidenced through high retail density, targeted marketing exposure and higher prevalence and disease burden,<sup>40–42</sup> often have weaker tobacco control infrastructure. They may be less able to successfully implement additional initiatives to address ongoing tobacco use among residents born before the birthdate cut-off, and BSR enforcement may be more challenging, thus further exacerbating disparities.

Prevalence of tobacco use and health problems from it now tend to be highest among populations that are of lower income; live in rural communities; are racial or ethnic minorities; lesbian, gay, bisexual, transgender, queer or questioning; older; and/or have other forms of relative social disadvantage.<sup>43</sup> Because BSR has no direct impact on those born before the cut-off date who are already using or at risk of using tobacco, if implemented in isolation from other measures, it 'locks in' those existing disparities.

Over 96% of smoking-caused deaths in the USA occur in people aged 50 or older, with over 60% of smoking-caused deaths in people aged over 70. Worldwide, over 93% of smoking-related deaths occur in those aged 50 and older. Even in low-income countries with larger proportions of younger people, 86% of smoking deaths occur in those aged 50 and older (see figure 1).<sup>44</sup> Youth cigarette smoking rates in the USA, however, have dropped to very low levels, less than 2%.<sup>45 46</sup> Thus, a BSR policy, even with 100% compliance, is likely to have only modest effects on smoking prevalence initially. As a stand-alone policy, it will have virtually no built-in impact on mortality and longer term health outcomes for many decades, until those born after the birthdate cut-off reach age 50. Thus, it may violate core equity and human rights concerns and principles regarding age discrimination, by discounting the worth of tens of millions of current tobacco users based solely on their age.<sup>47</sup>

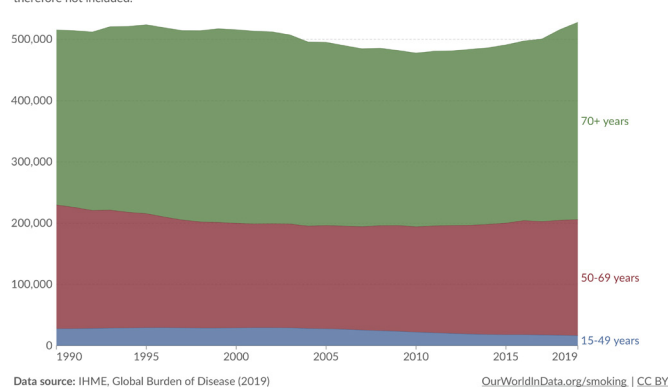
### Does research evidence support the effectiveness of BSR?

There is to date no research on the effectiveness of BSR as it has not been fully assessed anywhere. Thus, as with many innovative endgame policies, the evidence must be drawn inferentially from studies of other similar policies. Raising the age of purchase for tobacco products to 21 (T21), while not fully equivalent, is the closest parallel, and research on its effectiveness is mixed,<sup>48–51</sup> but a recent study suggests that daily smoking may be reduced in younger age groups compared with older groups, although no change was found for other smoking patterns.<sup>52</sup> However, a study of T21 retailer compliance in New Jersey found that underage decoys had their identification checked only 65% of the time and were able to successfully purchase products in more than 40% of visits,<sup>53</sup> and a California study found little change in tobacco product use and similar results regarding purchases.<sup>54</sup>

Overall, the literature suggests that retailer non-compliance is a significant limiting factor in the effectiveness of T21 policies.<sup>55 56</sup> BSR policies, which require additional behaviour changes from retailers in checking identification universally (not only for those who appear younger) and refusing sales, would require additional dedicated resources for much more rigorous enforcement and substantial penalties for retailer non-compliance. As the age of legal sale gradually increases under BSR, retailers may find universal identification checks and compliance more challenging as, for example, years hence someone aged 36 may be legally sold tobacco products but someone aged 35 cannot. No other consumer product has similar BSRs.

### Deaths from smoking, by age, United States

Annual number of deaths from tobacco smoking (includes direct smokers, but not deaths from secondhand smoking) across both sexes. Smoking deaths for children under 15 years old are measured to be zero and therefore not included.



**Figure 1** Deaths from smoking by age, United States

Additionally, there is some scientific justification for policies restricting youth access to tobacco based on nicotine's effects on the still developing brain.<sup>57–59</sup> Well-established community standards also exist regarding the necessity for enhanced protections for children and adolescents against exposure to other potentially addictive, psychoactive products such as alcohol and cannabis. However, while the policy has a laudable rationale of eliminating the idea that there is a 'safe' age to begin tobacco use, no clear scientific rationale or existing community standard supports a policy allowing sales to someone aged 36 but prohibiting sales to someone aged 35.

By comparison, there is considerable research evidence suggesting the likely effectiveness of some stronger endgame policy options. Reducing/restricting retail access to tobacco products by limiting retailers is associated with decreasing tobacco initiation and enhancing success for people trying to quit.<sup>60</sup> Retailer reduction makes visible, structural changes in the tobacco-promoting environment that can be of benefit to both current product users and non-users of all ages. For example, following the US CVS Pharmacy chain's decision to stop selling tobacco, studies found a modest but significant increase in quit attempts<sup>61</sup> and reduced household and population-level purchasing of tobacco.<sup>62 63</sup> Post implementation evaluations of the two communities in California with tobacco sales bans showed high retailer compliance and the virtual elimination of tobacco marketing from stores.<sup>64</sup> While most retailers did not like it, some noted the advantage of less cigarette butt litter outside stores, and some were relatively indifferent.<sup>65</sup>

### Will the policy reduce industry influence?

The idea of an endgame for the tobacco epidemic is incompatible with a thriving tobacco industry. The industry's influence (directly through lobbying and marketing, and indirectly through surrogates and astroturf activities that make it appear a message came from and is supported by grassroots participants) remains the primary obstacle to ending the industrially produced tobacco epidemic that began in the 20th century.<sup>66–68</sup> BSR policy could have powerful symbolic significance,<sup>69</sup> signalling that an end to the epidemic is finally being planned, however slowly, and with sustained attention could potentially allow other endgame measures to become more feasible in its wake, as the public and policymakers increasingly view such measures as reasonable and justified. Yet, in terms of the material conditions under which the industry operates, BSR policy by itself changes very little in the near term. While this could be seen as an advantage for reducing opposition while using the policy as an opportunity to further denormalise both tobacco use and the tobacco industry, under BSR the industry relationships with retailers continue, sales and displays of the products continue and industry power to influence tobacco control policies at all levels of government remains unabated.

By comparison, measures that reduce the number or density of retailers, restrict the products that may be sold or rapidly phase out sales altogether directly reduce the industry's power at the level of the jurisdiction and materially denormalise the industry's presence in the community.<sup>70</sup>

### Does BSR create challenges for public health legitimacy and messaging?

For most consumer products, governments typically respond to evidence that the product has hurt or killed users by ordering the products removed from the market either permanently or until they are modified and demonstrated to be safe. This

approach has been developed over the past century and has broad legislative, regulatory and cultural support. Yet, tobacco has never been subject to the same consumer protection restrictions. Thus, while compared with the status quo, BSR is a step towards making policy more consistent with the public health message that tobacco products are dangerous and deadly, BSR's decades-long phase-out period may imply a lack of urgency to address the most dangerous consumer products in history. Some vaping advocates already have asserted for years (see the hashtag #KeepSmokingWeNeedTheMoney on X, formerly Twitter) that policymakers are not really interested in ending smoking because it provides tax revenue and political contributions from industry. Thus, the suggestion that ongoing sales of addictive tobacco products (and the concomitant disease and death caused by sales) should be tolerated for decades more, appearing based in part on a need to protect revenue to government agencies and organisations receiving tobacco excise tax funding, creates potential challenges to public health legitimacy, as well as raising ethical and human rights concerns.

### Have plans been developed for continuing programmes funded by tobacco taxes?

Proponents of BSR policies<sup>8</sup> have noted that governments may be reluctant to make faster changes that would negatively impact revenue from tobacco taxes, arguing that the slower approach of a BSR policy mitigates this concern. As tobacco control and endgame policies of any kind are successfully implemented and enforced, tax revenue from tobacco sales will indeed be reduced, as is already happening in many jurisdictions as prevalence drops. This is less an issue for local governments, which typically do not retain substantial excise tobacco tax revenue. Policymakers and agencies who receive funding from tobacco taxes should develop transition plans now for alternative funding sources as part of comprehensive endgame planning. This is critical both to avoid lapses in funding for government services and to avoid future fiscal conflicts of interest that could weaken support for strong tobacco policies. It must be clear going forward that opposition to stronger tobacco control or endgame policies out of concern these policies will decrease government revenue from the sale of tobacco products is not ethically defensible.

### With planning, could alternative endgame policies with shorter time frames be achieved?

Multiple alternative endgame-advancing policy options are under consideration. All policies, including the examples below, have potential drawbacks and advantages, particularly if implemented singly or without adequate education and enforcement (see box 2). Simply making sales illegal, across whatever time frame, does not necessarily by itself reduce prevalence, as has been the case with cannabis in many jurisdictions. However, in addition to BSR, some alternatives might include:

- ▶ A shorter phase-out of retail sales of tobacco products (1–5 years),<sup>7 28 29 65 71</sup> ideally combined with transition funding and education for retailers as well as education and cessation support for tobacco users. This time window would give clear notice to both retailers and tobacco users, is supported by research indicating restricting retail access to tobacco products is associated with reduced initiation and enhances cessation success<sup>60</sup> and some version of this idea is supported by a majority of the public in many countries with endgame goals.<sup>30 31 33–35</sup> A rapid phase-out of all tobacco product sales may benefit from strong attention to enhancing messaging about and access to treatment support, both behavioural and

### Box 2 Maximising BSR's potential benefits and minimising potential harms

Based on our analysis, we believe a birthdate-based sales restriction (BSR) is most likely to be net beneficial under the following circumstances:

- ⇒ Enacted across a large jurisdiction as part of a comprehensive package of strong supply-side tobacco control measures with more immediate impact, such as substantial reductions in retail outlets, advertising and promotion bans, combustible sales bans (immediate or short phase-in), denicotinisation, price increases and/or flavoured product sales bans.
- ⇒ As with other policies, legislative language that excludes industry-favourable clauses, including explicitly noting that the law does not pre-empt stronger measures and avoiding industry-preferred policy limitations and characterisations such as 'Cigarette Free Generation' which would be consistent with their 'smoke-free world' rebranding.
- ⇒ As with other retail sales restrictions, legislation includes sufficient budget and clear authority for enforcement, education and monitoring of retail compliance and population trends.
- ⇒ Emphasis on supply-side restrictions, effective non-compliance penalties and enforcement on retailers, wholesalers, distributors and manufacturers, not tobacco users.
- ⇒ Commitment of resources to ensure people who use tobacco are supported with a range of help for cessation, including direct assistance as well as ongoing motivating and supportive messaging through media and health systems.
- ⇒ Framed as a floor or backstop policy during transition to endgame, not as a single comprehensive stand-alone solution.

pharmacological, especially for those more heavily addicted or more likely to have difficulty quitting. Some communities are exploring establishment of a minimum price policy across a region, announcing in advance the intent to end tobacco sales by a set date, then allowing retailers to retain the increased receipts during the transition period to help them introduce new products, acquire display cases or otherwise implement alternatives to tobacco sales.

- ▶ A rapid ban on sales of combustible tobacco products, coupled with additional restrictions on non-combustible sales but without an immediate ban, which is a variant on the New Zealand proposal.<sup>72</sup> Potential non-combustible restrictions could include decreased retailer density, restrictions on type of retail outlet, flavour and nicotine sales restrictions, price escalation and perhaps a longer phase-out for non-combustible sales, such as a non-combustible BSR. Advantages of this approach would include faster elimination of the tobacco products most associated with death and disease (cigarettes), elimination of dual use of combustibles and non-combustibles and undercutting tobacco industry opposition, since they claim to have a goal of phasing out cigarettes anyway.<sup>73</sup> It could also soften retailer and tobacco user opposition by allowing continued access to some commercial tobacco products. Major disadvantages include uncertainty as to the degree of harm reduction, either at the individual or population level,<sup>74</sup> provided by product switching,<sup>75</sup> and that retaining non-combustible sales would allow the industry to expand new product development and

sales, retain revenue and continue influencing structural, political and social dynamics to its advantage.

- Major restrictions on retail outlet density, number and types of stores. For example, tobacco product sales could be limited to adult-only, tobacco-only retail outlets with extremely limited density and aggressive enforcement, sales banned in pharmacies and grocery stores or other measures.<sup>60</sup>
- In jurisdictions where not pre-empted and legally allowed, bans on sales of flavoured products<sup>76</sup>; allowing sales only of products with nicotine at non-addictive levels<sup>77–80</sup>; and/or marketing/advertising bans.<sup>81</sup> Although not stand-alone endgame policies, alone or in combination these policies would decrease the ability of the industry to maximise the addictiveness, attractiveness and abuse liability of their products. A challenge associated with policies focused on specific categories of additives, however, is the innovative capacity of the industry to rapidly develop alternatives that accomplish similar goals, as is happening now with menthol substitution and could happen with nicotine analogues.

## CONCLUSION AND RECOMMENDATIONS

As with any endgame-oriented policy, there are potential benefits to the BSR birthdate-based sales ban approach, as well as potential unintended risks and harms. A major benefit is that even its introduction elevates the discussion around tobacco from a focus on ‘control’ to considering how best to eliminate the ability of the tobacco industry to keep selling deadly, addictive products, and challenges the idea of tobacco use as a ‘coming of age’ behaviour. Several potential BSR risks may be present with other endgame policy approaches, and thus subject to mitigation. For example, provision of funding and clear authority for implementation and enforcement and ensuring there is no pre-emption may solve some issues.

However, some concerns reflect structural and social limitations specific to BSR as an endgame strategy, particularly if pursued as a stand-alone policy.<sup>82</sup> Principal among these is the abandonment of millions of people who currently smoke or use other tobacco products through BSR’s continued normalised retail access to lethal products, based solely on the year they were born. Adopting this approach discounts the value of current tobacco users, does nothing to help them quit, and may indicate the lower regard some societies hold for older people who use tobacco<sup>83</sup> and other marginalised groups with higher smoking rates. A stand-alone BSR approach contrasts unfavourably with New Zealand’s previous endgame package, where a single law included two additional very aggressive ‘end game’ policies (denicotinisation and a 90+% retail density decrease) to be implemented along with a ‘smoke-free generation’ policy. Allowing for a decades-long implementation ‘tail’ where sales continue is inconsistent with public health messaging and customary consumer product regulation of dangerous products. BSR also gives the industry many opportunities over decades to adapt or overturn the law. The BSR approach could be beneficial in a political and social environment where other more rapid resolutions to the tobacco industry-induced epidemic are truly impossible (as may have been the perception worldwide in 2010 when the concept was introduced). Progress towards a solution decades in the future is preferable to no solution. However, that is not now the only alternative in many countries and subnational jurisdictions, especially those with low prevalence and successful histories of confronting the tobacco industry. Given the growing global tobacco endgame movement, the unacceptable persistent disparities in tobacco use and tobacco-caused diseases and deaths and the sheer enormity of the harm caused by the commercial tobacco industry, proceeding with urgency is warranted.

X Ruth E Malone @MaloneRuth

**Acknowledgements** The authors thank Drs Libby Smith, Patricia McDaniel and Jeremiah Mock for comments on the analysis and earlier versions of this paper, and three reviewers whose thoughtful comments extended the analysis.

**Contributors** REM and TM conceptualised and designed the paper, and cowrote and edited all drafts of the paper. REM is the guarantor of the overall content of the paper.

**Funding** This project was funded by the California Department of Public Health (contract number CG 1910107). The funders played no role in data collection, interpretation or reporting.

**Competing interests** None declared.

**Patient consent for publication** Not applicable.

**Ethics approval** Not applicable.

**Provenance and peer review** Not commissioned; externally peer reviewed.

## ORCID iDs

Ruth E Malone <http://orcid.org/0000-0002-3324-2183>

Tim McAfee <http://orcid.org/0000-0001-8087-9817>

## REFERENCES

- Malone R, McDaniel P, Smith E. It is time to plan the tobacco endgame. *BMJ* 2014;348:g1453.
- Malone RE. Tobacco endgames: what they are and are not, issues for tobacco control strategic planning, and a possible US scenario. *Tob Control* 2013;22:i42–4.
- McDaniel PA, Smith EA, Malone RE. The tobacco endgame: a qualitative review and synthesis. *Tob Control* 2016;25:594–604.
- McDaniel PA, Smith EA, Malone RE. *The evidence for the endgame: a white paper*. California: Department of Public Health, 2021.
- Thomson G, Edwards R, Wilson N, et al. What are the elements of the tobacco endgame *Tob Control* 2012;21:293–5.
- Kong AY, Henriksen L. Retail endgame strategies: reduce tobacco availability and visibility and promote health equity. *Tob Control* 2022;31:243–9.
- Smith EA, Malone RE. An argument for phasing out sales of cigarettes. *Tob Control* 2020;29:703–8.
- Kho D, Chiam Y, Ng P, et al. Phasing-out tobacco: proposal to deny access to tobacco for those born from 2000. *Tob Control* 2010;19:355–60.
- Berrick AJ. The tobacco-free generation proposal. *Tob Control* 2013;22 Suppl 1:i22–6.
- Berrick J. US: Brookline introduces tobacco-free generation law. *Tob Control* 2022;31:399–401.
- New Zealand Ministry of Health. Smokefree aotearoa 2025 action plan. 2023. Available: <https://www.health.govt.nz/our-work/preventative-health-wellness/smokefree-2025/smokefree-aotearoa-2025-action-plan>
- United Kingdom Department of Health and Social Care. Stopping the start: our new plan to create a smoke-free generation in. 2023. Available: <https://www.gov.uk/government/publications/stopping-the-start-our-new-plan-to-create-a-smokefree-generation/stopping-the-start-our-new-plan-to-create-a-smokefree-generation>
- United Kingdom tobacco and vapes bill. 2024. Available: <https://bills.parliament.uk/bills/3703>
- United Kingdom Department of Health and Social Care. Tobacco and vapes bill: impact assessment. 2024. Available: <https://assets.publishing.service.gov.uk/media/65f9bd0a9316f5001164c351/tobacco-vapes-bill-impact-assessment.pdf>
- Barnsley K. Tobacco free generation legislation. 2014. Available: <https://www.smokefreetasmania.com/new-law/>
- deLeon K, Sarita JT. The Philippines: pioneering the tobacco endgame. *Tobacco Control [Blog]* 2020. Available: <https://blogs.bmj.com/tc/2020/01/13/the-philippines-pioneering-the-tobacco-endgame/>
- Hefler M, Bianco E, Bradbrook S, et al. What facilitates policy audacity in tobacco control? An analysis of approaches and supportive factors for innovation in seven countries. *Tob Control* 2022;31:328–34.
- LegiScan. Hawaii Senate bill SB 148 tobacco products; electronic smoking device; prohibition; date of birth. 2023.
- California state assembly bill Ab935. in. tobacco sales: phased tobacco ban. 2023. Available: [https://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=202302040AB935](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202302040AB935)
- An ACT relating to tobacco. n.d. Available: <https://www.leg.state.nv.us/App/NELIS/REL/82nd2023/Bill/10115/Overview>. In:2023
- Chen H. New Zealand’s new government scraps world-leading smoking ban to fund tax cuts. *CNN* 2023. Available: <https://www.cnn.com/2023/11/28/asia/new-zealand-smoking-ban-reversal-intl-hnk/index.html>
- Meza LR, Galimov A, Sussman S, et al. “Proliferation of ‘non-Menthol’ cigarettes amid a state-wide flavour ban”. *Tob Control* 2023. 10.1136/tc-2023-058074. [Epub ahead of print 20 Jul 2023].

- 23 Page MK, Paul EE, Leigh NJ, *et al.* "Still 'cool': tobacco industry responds to state-wide Menthol ban with synthetic Coolants". *Tob Control* 2023. 10.1136/tc-2023-058149. [Epub ahead of print 27 Jul 2023].
- 24 Liber AC, Sánchez-Romero LM, Cadham CJ, *et al.* Tobacco couponing: a systematic review of exposures and effects on tobacco initiation and cessation. *Nicotine Tob Res* 2022;24:1523–33.
- 25 Branstor JR, Hiscok R, Silver K, *et al.* Cigarette-like Cigarillo introduced to bypass taxation, standardised packaging, minimum pack sizes, and Menthol ban in the UK. *Tob Control* 2021;30:708–11.
- 26 Sheikh ZD, Branstor JR, Gilmore AB. Tobacco industry pricing strategies in response to excise tax policies: a systematic review. *Tob Control* 2023;32:239–50.
- 27 Zeng Z, Cook AR, van der Eijk Y. What measures are needed to achieve a tobacco endgame target? A Singapore-based simulation study. *Tob Control* 2023. 10.1136/tc-2022-057856. [Epub ahead of print 6 Jun 2023].
- 28 Sharp S. Beverly hills becomes the first U.S. city to end most tobacco sales. *Los Angeles Times* 2019. Available: <https://www.latimes.com/local/lanow/la-me-ln-beverly-hills-ends-tobacco-sales-20190604-story.html>
- 29 Welwan RA, Stupplebeen DA, Vuong TD, *et al.* Perspectives of licensed tobacco retailers on tobacco sales bans in Manhattan beach and Beverly hills, California. *Tob Control* 2022;31:e213–4.
- 30 Al-Shawaf M, Grooms KN, Mahoney M, *et al.* Support for policies to prohibit the sale of Menthol cigarettes and all tobacco products among adults, 2021. *Prev Chronic Dis* 2023;20:E05.
- 31 Personal communication. California Department of Public Health. California tobacco control program media evaluation survey, conducted by Research Triangle Institute. 2022.
- 32 California Department of Public Health California Tobacco Prevention Program. *Online California adult tobacco survey online CATS 2019–2023*. Sacramento, CA, 2024.
- 33 Kang H, Yoon W, Seo HG, *et al.* Public support for tobacco Endgame policies in South Korea: findings from the 2020 International tobacco control Korea survey. *Tob Control* 2024. 10.1136/tc-2023-058454. [Epub ahead of print 21 Feb 2024].
- 34 Cosgrave EJ, Blake M, Murphy E, *et al.* Is the public ready for a tobacco-free Ireland? A national survey of public knowledge and attitudes to tobacco Endgame in Ireland. *Tob Control* 2023. 10.1136/tc-2023-057958. [Epub ahead of print 26 May 2023].
- 35 Brennan E, Ilchenko E, Scoll M, *et al.* Public support for policies to phase out the retail sale of cigarettes in Australia: results from a nationally representative survey. *Tob Control* 2022. 10.1136/tobaccocontrol-2021-057122. [Epub ahead of print 3 May 2023].
- 36 United States Food and Drug Administration. Family smoking prevention and tobacco control act—an overview. 2009. Available: <https://www.fda.gov/tobacco-products/rules-regulations-and-guidance/family-smoking-prevention-and-tobacco-control-act-overview>
- 37 U.S. Department of Health and Human Services. *The health consequences of smoking: a report of the surgeon general*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2004. Available: [http://www.cdc.gov/tobacco/sgr/sgr\\_2004/Factsheets.htm](http://www.cdc.gov/tobacco/sgr/sgr_2004/Factsheets.htm)
- 38 Hudson SV, Kurti M, Howard J, *et al.* Adoption of tobacco 21: a cross-case analysis of ten US States. *Int J Environ Res Public Health* 2021;18:6096.
- 39 Crosbie E, Gonzalez M, Glantz SA. Health Preemption behind closed doors: trade agreements and fast-track authority. *Am J Public Health* 2014;104:e7–13.
- 40 CDC Office on Smoking and Health. Health disparities related to commercial tobacco and advancing health equity. 2022. Available: <https://www.cdc.gov/tobacco/health-equity/index.htm>
- 41 Mills SD, Kong AY, Reimold AE, *et al.* Sociodemographic disparities in tobacco retailer density in the United States, 2000–2017. *Nicotine Tob Res* 2022;24:1291–9.
- 42 Yerger VB, Przewoznik J, Malone RE. Racialized geography, corporate activity, and health disparities: tobacco industry targeting of inner cities. *J Health Care Poor Underserved* 2007;18:10–38.
- 43 Centers for Disease Control and Prevention. Current cigarette smoking among adults in the United States. 2023. Available: [https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/adult\\_data/cig\\_smoking/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm)
- 44 Our World in Data: Global Burden of Disease. Deaths from smoking, by age, United States. 2019. Available: <https://ourworldindata.org/grapher/smoking-deaths-by-age?time=earliest..2019&country=~USA>
- 45 Birdsey J, Cornelius M, Jamal A, *et al.* Tobacco product use among U.S. middle and high school students - national youth tobacco survey, 2023. *MMWR Morb Mortal Wkly Rep* 2023;72:1173–82.
- 46 Centers for Disease Control and Prevention. Youth and tobacco use. 2023. Available: [https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/youth\\_data/tobacco\\_use/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/index.htm)
- 47 Neuman GL, Ibrahim AM. What is age discrimination a human rights violation? *Harv Hum Rights J* 2023;36:223–46.
- 48 Kessel Schneider S, Buka SL, Dash K, *et al.* Community reductions in youth smoking after raising the minimum tobacco sales age to 21. *Tob Control* 2016;25:355–9.
- 49 Patel M, Simard BJ, Benson AF, *et al.* Measuring the impact of state and local tobacco 21 policies in the United States: a longitudinal study of youth and young adults ages 15–21. *Nicotine Tob Res* 2023;25:631–8.
- 50 Friedman AS, Buckell J, Sindelar JL. Tobacco-21 laws and young adult smoking: quasi-experimental evidence. *Addiction* 2019;114:1816–23.
- 51 Friedman AS, Wu RJ. Do local Tobacco-21 laws reduce smoking among 18 to 20 year-olds *Nicotine Tob Res* 2020;22:1195–201.
- 52 Dove MS, Stewart SL, Tong EK. Smoking behavior in 18–20 year-olds after tobacco 21 policy implementation in California: a difference-in-differences analysis with other states. *Prev Med* 2021;148:106553.
- 53 Hrywna M, Kong AY, Ackerman C, *et al.* Retailer compliance with tobacco 21 in New Jersey, 2019–2020. *JAMA Netw Open* 2022;5:e2235637.
- 54 Schiff S, Liu F, Cruz TB, *et al.* E-cigarette and cigarette purchasing among young adults before and after implementation of California's tobacco 21 policy. *Tob Control* 2021;30:206–11.
- 55 Agaku IT, Nkosi L, Agaku QD, *et al.* A rapid evaluation of the US Federal tobacco 21 (T21) law and lessons from statewide T21 policies: findings from population-level surveys. *Prev Chronic Dis* 2022;19:E29.
- 56 Nuyts PAW, Hewer RMF, Kuipers MAG, *et al.* Youth access to cigarettes across seven European countries: a mixed-methods study. *Nicotine Tob Res* 2020;22:1989–96.
- 57 Yuan M, Cross SJ, Loughlin SE, *et al.* Nicotine and the adolescent brain. *J Physiol* 2015;593:3397–412.
- 58 Castro EM, Lotfipour S, Leslie FM. Nicotine on the developing brain. *Pharmacol Res* 2023;190:106716.
- 59 Leslie FM. Unique, long-term effects of nicotine on adolescent brain. *Pharmacol Biochem Behav* 2020;197:173010.
- 60 Lee JGL, Kong AY, Sewell KB, *et al.* Associations of tobacco retailer density and proximity with adult tobacco use behaviours and health outcomes: a meta-analysis. *Tob Control* 2022;31:e189–200.
- 61 Ali FRM, Neff L, Wang X, *et al.* Tobacco-free pharmacies and U.S. adult smoking behavior: evidence from CVS health's removal of tobacco sales. *Am J Prev Med* 2020;58:41–9.
- 62 Polinski JM, Howell B, Gagnon MA, *et al.* Impact of CVS Pharmacy's discontinuance of tobacco sales on cigarette purchasing (2012–2014). *Am J Public Health* 2017;107:556–62.
- 63 Brennan TA, Shrank WH, Sussman A, *et al.* The effect of a policy to eliminate sales of tobacco in pharmacies on the number of smokers in the region. *CVS Health*; 2014.
- 64 Henriksen L, Andersen-Rodgers E, Voelker DH, *et al.* Evaluations of compliance with California's first tobacco sales bans and tobacco marketing in restricted and cross-border stores. *Nicotine Tob Res* 2024;ntae043.
- 65 McDaniel PA, Smith EA, Malone RE. Retailer experiences with tobacco sales bans: lessons from two early Adopter jurisdictions. *Tob Control* 2023. 10.1136/tc-2023-057944. [Epub ahead of print 5 Jun 2023].
- 66 Kluger R. *Ashes to ashes: America's hundred-year cigarette war, the public health, and the unabashed triumph of Philip Morris*. New York: Vintage Books, 1997.
- 67 Proctor RN. *Golden holocaust: origins of the cigarette catastrophe and the case for abolition*. Berkeley: University of California Press, 2011. Available: <https://www.degruyter.com/document/doi/10.1525/9780520950436/html>
- 68 Brandt AM. *The cigarette century: the rise, fall, and deadly persistence of the product that defined America*. New York: Basic Books, 2007.
- 69 Malone RE. The symbolic and the material in tobacco control: both matter. *Tob Control* 2014;23:1–2.
- 70 Malone RE, Grundy Q, Bero LA. Tobacco industry denormalisation as a tobacco control intervention: a review. *Tob Control* 2012;21:162–70.
- 71 McDaniel PA, Malone RE. Tobacco industry and public health responses to state and local efforts to end tobacco sales from 1969–2020. *PLoS One* 2020;15:e0233417.
- 72 New Zealand Ministry of Health. Smokefree 2025. 2023. Available: <https://www.health.govt.nz/our-work/preventative-health-wellness/smokefree-2025>
- 73 Philip Morris International. Our smoke-free vision. 2024. Available: <https://www.pmi.com/our-transformation/our-smoke-free-vision>
- 74 Hammond D, Reid JL, Burkhalter R, *et al.* Trends in smoking and vaping among young people: findings from the ITC youth survey. 2023. Available: <https://davidhammond.ca/wp-content/uploads/2023/08/2023-ITC-Youth-Report-Final.pdf>
- 75 Glantz SA, Nguyen N, Oliveira da Silva AL. Population-based disease odds for e-cigarettes and dual use versus cigarettes. *NEJM Evid* 2024;3:EVIDo2300229.
- 76 Chaiton MO, Nicolau I, Schwartz R, *et al.* Ban on menthol-flavoured tobacco products predicts cigarette cessation at 1 year: a population cohort study. *Tob Control* 2020;29:341–7.
- 77 Benowitz NL, Henningfield JE. Reducing the nicotine content to make cigarettes less addictive. *Tob Control* 2013;22 Suppl 1:i14–7.
- 78 Benowitz NL, Nardone N, Dains KM, *et al.* Effect of reducing the nicotine content of cigarettes on cigarette smoking behavior and tobacco smoke toxicant exposure: 2-year follow up. *Addiction* 2015;110:1667–75.
- 79 Donny EC, Denlinger RL, Tidey JW, *et al.* Randomized trial of reduced-nicotine standards for cigarettes. *N Engl J Med* 2015;373:1340–9.
- 80 Twinamatsiko A. States don't need to wait for FDA to adopt nicotine reduction endgame strategies. *Lessons from Flavored Tobacco Litigation Food and Drug Law Journal* 2023;78.
- 81 World Health Organization. Banning tobacco advertising, sponsorship and promotion. 2024. Available: [https://www.who.int/europe/health-topics/tobacco/banning-tobacco-advertising-sponsorship-and-promotion#tab=tab\\_1](https://www.who.int/europe/health-topics/tobacco/banning-tobacco-advertising-sponsorship-and-promotion#tab=tab_1)
- 82 van der Eijk Y. Development of an integrated tobacco endgame strategy. *Tob Control* 2015;24:336–40.
- 83 McAfee T, Malone RE, Cataldo J. Ignoring our elders: tobacco control's forgotten health equity issue. *Tob Control* 2021;30:479–80.