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Select Committee on Tobacco Harm Reduction (Australia)

To the Select Committee Members

This submission is from Professor Chris Bullen and Associate Professor Natalie Walker, National Institute for Health Innovation, School of Population Health, University of Auckland, New Zealand.

We are well placed to comment on this topic: we have worked since 2005 on research in the field of tobacco control and smoking cessation interventions. Since 2010 we have led pivotal and world-leading studies on e-cigarettes to inform policy and practice. For example, two of the world's largest clinical trials on e-cigarettes for smoking cessation were led by us [1-2], and we have recently published on vaping in year 10 youth in New Zealand [3]. Professor Bullen is also co-author of the Cochrane Review of e-cigarettes for smoking cessation [4]. We are both members of the international Society for Research into Nicotine and Tobacco (SRNT): Professor Bullen chairs the Oceania chapter of SRNT and A/Prof Walker is Dean of SRNT-University (the educational arm of SRNT). We are University-based researchers with no links to the tobacco or vaping industry. For this submission we have focused primarily on the policy situation in New Zealand, and the contribution of our own research to the field.

The concept of harm reduction is not new to Australia – it has been applied to many public health issues, such as use of seat belts to improve car safety, and needle exchange programmes to reduce harm for injecting drug users.

We believe it is timely for Australia to reconsider its application to tobacco and nicotine products. Reduced harm tobacco and nicotine products are part of the solution to reducing smoking prevalence, as evidenced by the example in our own nation, New Zealand [5], international modelling data [6], and population-wide data from other countries where access to reduced harm tobacco is supported [7].

As a starting principle, we believe the Australian government should establish a risk-of-harm-proportionate regulatory regime, one that imposes the *most stringent* regulatory measures on smoked/combustible tobacco products and relatively less stringent measures on reduced harm tobacco products and nicotine-delivery products (such as e-cigarettes) and their use ('vaping'), because of the known far lower harm caused by such products.

Some Australians will always be addicted to nicotine. Making nicotine available to them in the least harmful way possible is paramount, whilst at



the same time ensuring the most harmful product (smoked tobacco) becomes less accessible.

The widespread availability of various forms of nicotine replacement therapy (NRT) for helping smokers to quit is important but not sufficient for many smokers. NRT replaces some of the nicotine people normally get from tobacco, thereby reducing symptoms of nicotine withdrawal/craving, making quitting easier.

Like NRT, nicotine e-cigarettes also replace some of the nicotine people get from tobacco. In addition, e-cigarettes address many of the behavioural actions associated with smoking and thereby can mitigate cues to craving. Such behavioural factors may be more important than previously thought [8-9].

Our view is that nicotine e-cigarettes can be seen as another form of NRT, but one that is akin to many over-the-counter products that have not been through the pharmaceutical approvals route yet are available to the public.

Having a variety of NRT products (including nicotine e-cigarettes) available enables smokers to choose their preferred combination of products - the ones they feel will best support their quit journey.

The treatment of nicotine vaping products (electronic cigarettes and smokeless tobacco) in developed countries similar to Australia (such as the United Kingdom, New Zealand, the European Union and United States), including but not limited to legislative and regulatory frameworks

We believe the Australian government should follow New Zealand's lead in tobacco harm reduction. The New Zealand government's position is that any legislative and regulatory frameworks related to e-cigarettes should aim to:

- maximise the benefits of vaping (such as supporting smokers to quit smoking; or for those who cannot quit, to transition completely away from smoked tobacco to reduced harm tobacco products and/or vaping), and
- minimise any harms related to vaping, that is any health risks that users are potentially exposed to, and the initiation of nicotine-containing e-cigarettes by non-smokers (especially children/youth under 18 years of age).

As part of trying to achieve New Zealand's Smokefree 2025 goal, the government endorses e-cigarettes as an acceptable product to support switching away from tobacco (<https://vapingfacts.health.nz/>). E-cigarettes (with or without nicotine) are widely available in New Zealand through supermarkets, specialist 'vape' shops, and pharmacies. However, the New Zealand Smokefree Environments and Regulated Products (Vaping) Amendment Act 2020 (which will be phased in over 15-month period from the 11th November 2020), will introduce several restrictions on e-cigarettes related to advertising, sponsorship, packing, flavourings and the provision of health information. We strongly support this model as an example of sensible regulation around vaping.

The impact nicotine vaping products have had on smoking rates in these countries, and the aggregate population health impacts of these changes in nicotine consumption

Data from the New Zealand Health Survey data [10] indicate smoking rates have been decreasing over time since 2006/07, irrespective of age, sex and ethnicity. This finding is despite e-cigarettes been legally available for sale to adults aged ≥ 18 years in New Zealand since 2010 and nicotine-containing e-cigarettes and e-liquids being permitted since March 2018. It is not possible to attribute this reduction solely to e-cigarettes given other tobacco control interventions have been delivered during this time (e.g. plain packaging for tobacco).

From an equity perspective, e-cigarettes have proved to be popular with New Zealand Māori who smoke, as substitutes for tobacco cigarettes, and among people with mental illness, among whom smoking prevalence is very high. Denying these people the right to access safer products could be seen as a health equity issue.

Smoking cessation is a highly cost-effective health intervention. In a 2019 publication, modelling of the health and cost impacts of liberalizing the New Zealand vaping market found net health gain and cost savings [11].

The established evidence on the effectiveness of e-cigarettes as a smoking cessation treatment

Professor Bullen is co-author on the recently published 2020 Cochrane review on e-cigarettes for smoking cessation [4]. The review found nicotine e-cigarettes were superior to:

- behavioural support/no treatment (verified continuous abstinence from smoking (CA) for \geq six months: Relative risk [RR]=2.50, 95% Confidence Intervals [CI] 1.24-5.04, four trials, 2,312 participants in total)
- nicotine-free e-cigarettes (verified CA \geq six months: RR=1.71, 95% CI 1.00-2.92, three trials, 802 participants in total), and
- NRT (verified CA \geq six months: RR=1.69, 95% CI 1.25-2.27, three trials, 1,498 participants in total)

at helping people to quit smoking. The review also concluded that the overall incidence of serious adverse events was low, with no clear evidence of harm from nicotine e-cigarettes based on available data. The review included the two pragmatic community-based trials undertaken in New Zealand (1,781 participants in total) [1-2]. These trials are of particular value as they had very open eligibility criteria to ensure the findings were as generalisable as possible to all people who smoke. Furthermore, we did not pay participants to participate in this trial – again to ensure our findings reflected the real-world use and quit rates associated with use of e-cigarettes.

The established evidence on the uptake of e-cigarettes amongst non-smokers and the potential gateway effect onto traditional tobacco products

We have found little evidence from New Zealand that e-cigarettes are a 'gateway to smoking'. Data from the New Zealand ASH year 10 cross-sectional survey (2014-2019) of 14-15 year old students indicate that in absolute numbers, over the last five to six years, most students experimenting with e-cigarettes were non-smokers, and very few were daily users (daily use is an indicator of potential dependence) [3]. An online survey of New Zealand vapers (N=218) in 2016 found that the majority were smokers or ex-smokers, i.e. only 1.4% of vapers had never smoked [12].

Evidence of the impact of legalising nicotine vaping products on youth smoking and vaping rates and measures that Australia could adopt to minimise youth smoking and vaping

Most people who use tobacco start when they are teenagers or young adults. Consequently, strategies to prevent initiation of tobacco use are important, as are cessation interventions to help youth quit tobacco use.

E-cigarettes have been legally available for sale to adults aged ≥ 18 years in New Zealand since 2010, although it has been illegal to advertise or sell e-cigarettes or e-liquid that contain nicotine or to make a cessation claim about e-cigarettes. However, low levels of enforcement, and allowance for three months of nicotine e-liquid to be imported for personal use, meant that nicotine e-liquids have been available for many years in New Zealand. On the 12th March 2018, nicotine-containing e-cigarettes and e-liquids were permitted by the government. What impact has the above policy had on youth smoking and vaping in New Zealand?

The average age to start smoking in New Zealand is 14 years [13]. Although some youth may experiment with smoking, daily use is an indicator of potential nicotine dependence, so is the most robust outcome to focus on. Between 2014 and 2019 the New Zealand ASH year 10 cross-sectional survey of 14-15 year students [3] found:

- A significant decline in the proportion of youth who had smoked cigarettes daily (from 2.8% in 2014 to 2.1% in 2019).
- A significant increase in the proportion of youth who had used e-cigarettes daily (from 1.1% in 2015 to 3.1% in 2019).

However, one can't conclude from these data that the increase in vaping has led to the decline in smoking in this population, because other tobacco control interventions have been delivered during this time and causality can't be determined using a cross-sectional survey design. Such surveys are simply a 'snapshot in time', and those children surveyed in 2018 are not the same children surveyed in 2019. However, looking at smoking and vaping patterns in older cohorts can help shed some light on the question at hand. In New Zealand, the mean duration from experimenting with cigarettes to daily use is about 2.5 years [13]. Between 2014 and 2019 the New Zealand ASH year 10 cross-sectional survey of 14-15 year students [3] found:

- A significant decline in the proportion of youth experimenting with cigarettes (from 23.1% in 2014 to 19.6% in 2019).
- A significant increase in the proportion of youth experimenting with e-cigarettes (from 20.8% in 2015 to 37.3% in 2019).

If experimenting with vaping at 14-15 years of age leads to an increase in smoking at a later age, one should be able to observe this pattern in data from older NZ cohorts—however, this is not the case when viewing the New Zealand Health Survey data [10].

15-17 year olds

- Daily smoking decreased over time (5.8% in 2014/15 to 3.0% in 2018/19).
- Daily e-cigarette use increased over time (0.1% in 2015/16 to 1.7% in 2018/19)

18-24 year olds

- Daily smoking decreased over time (20.2% in 2014/15 to 15.0% in 2018/19)

- Daily e-cigarette use increased over time (1.0% in 2015/16 to 4.5% in 2018/19)

25-34 year olds

- Daily smoking decreased over time (19.3% in 2015/16 to 15.5% in 2018/19).
- Daily e-cigarette use increased over time (1.1% in 2015/16 to 5.1% in 2018/19).

A longitudinal cohort study is the optimal design for assessing causality. International evidence from such studies does suggest that vaping may lead to subsequent smoking in some young people, although the causal nature of this association remains unclear, given shared risk factors and the methodological limitations of the research [14-17]. Rather than a gateway effect, data appear more supportive of “a common liability model in which people who are liable to use nicotine are more likely to use both e-cigarettes and cigarettes [14].” Even if experimenting with e-cigarettes led to more regular use of e-cigarettes, or increased smoking initiation in some youth, these behaviours should be weighed against the possibility that e-cigarettes may decrease the risk of smoking initiation in some youth and support smoking cessation in some youth and adults.

Tobacco industry involvement in the selling and marketing of e-cigarettes

There has been a local vaping industry in New Zealand for many years, that is led by ex-smokers. To the best of our knowledge, this industry does not have links to Big Tobacco.

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