Expert ranking of tobacco control interventions for health economic modelling research in New Zealand

Background—The New Zealand health sector pursues a wide range of tobacco control interventions and these have intensified after the adoption of the Government's "Smokefree Nation by 2025" goal (e.g., smokefree prisons in 2011, plans for additional tobacco tax increases in the 2012 budget, and a retail display ban in 2012). In our work, we intend to compare a number of potential tobacco control interventions in terms of health impact (using health-adjusted life-years), and reductions in health inequalities (Māori relative to non-Māori; and in terms of population group by differing levels of area deprivation).

Where appropriate and possible, health system costs will also be calculated for cost-effectiveness. As part of this process we developed a protocol for health economic modelling[1] and completed initial forecasting modelling on tobacco use in New Zealand.[2] However, as in every part of the health sector, priorities have to be set for tobacco research and policy making. Consequently, we sought expert opinion on what tobacco control interventions to preferentially consider for health economic modelling, and we present the results of this exercise here.

Methods—We selected New Zealand tobacco control experts (all external to our own research team in the BODE[3] Programme) who had at least one of the following: multiple publications in tobacco control, expertise in tobacco control for Māori, expertise in NGO activities or in central government policy making around tobacco control. Another requirement was the expert's attendance at a national smokefree conference in Wellington in November 2012, which enabled them to participate in a face-to-face meeting. A total of nine experts were invited and eight participated in a three hour meeting with five BODE[3] Programme staff present.

All participating experts completed anonymised forms with the listed interventions as per Table 1 (but with interventions randomly ordered within broad categories: strategic interventions, legal/policy interventions, smoking cessation interventions and reduction of smoking uptake). The experts completed their priority rankings (using an equal number of "1" to "5" scores, i.e., ranking by quintile) before the meeting and then made revisions if desired after the discussions at the meeting. The potential factors that participants were asked to consider in their ranking of interventions were: (i) Relevance (i.e., selected interventions might be favoured if they inform decision-making in the next two to five years); (ii) At least a plausible scope for moderate or greater health gain, especially for Māori, from the intervention; (iii) Scope for innovation including consideration of interventions that may be currently beyond what is considered viable by policy makers, including disinvestment); and (iv) Scope for scientific rigour (i.e., interventions that can be reliably specified and plausibly parameterised in terms of best estimates and uncertainty).

Results and Discussion—The invited experts attending included six researchers (from four different towns/cities), one from a NGO, and an official. The face-to-face meeting appeared to engage all experts and there was both depth and breadth to the

discussions. Nevertheless, not all of the experts used scores in even proportions (as was requested) and our impression was that the task of considering all the four factors in the ranking process was often cognitively demanding (not surprising given the complexity of all the trade-offs that were possible).

The average scores for the 25 tobacco control interventions after the discussions shifted both up (n=15), and down (n=8), and few remained the same (n=2) [more detailed data available on request]. For the final average rankings, the tobacco tax increase intervention was ranked highest (i.e., highest priority for health economic modelling), followed by mass media campaigns (Table 1). Population level interventions tended to be ranked as higher priority relative to individual level smoking cessation interventions and relative to interventions focused on preventing youth uptake (e.g., the lowest three ranked interventions). Most tobacco "endgame strategies" (to phase-out smoking) ranked relatively highly (at first, third, fifth, eighth and sixteenth).

In a separate exercise, when considering modelling feasibility alone, three modelling experts in our team (BODE[3] Programme) also prioritised research on tax and mass media campaigns. They also particularly favoured the interventions of a "sinking lid" on tobacco supply, the "smokefree generation" strategy, and internet-based smoking cessation support.

As is common with expert opinion exercises, there are some limitations. For example, around the initial list of 25 interventions selected for the prioritisation process by the BODE[3] staff, the particular experts invited (i.e., not fully representing the whole tobacco control sector), the limited time for discussion spent on each tobacco control intervention, and group processes that potentially could have generated bias (e.g., individuals who are particularly persuasive and "group think" processes). Nevertheless, we felt this particular expert group meeting was very useful and consider it likely to help the BODE[3] Programme team prioritise its research efforts in health economic modelling. Other health sector groups may also wish to perform similar prioritisation exercises for tobacco control interventions – given the importance of maximising the use of limited resources needed to achieve the smokefree nation goal by 2025.

Table 1. Prioritised list of tobacco control interventions for health economic modelling ranked by average score from the invited experts (where a score of 1 is for the top, highest priority quintile; and 5 is the lowest priority quintile)

Tobacco control intervention (n=25)	Invited experts (n=8) (mean results ranked)
1. Endgame strategy involving regular large tobacco tax increases (until some very high price is reached e.g., the current price of cannabis per gram).	1.0
2. Intensive mass media campaigns to promote smoking cessation (Australian level of resourcing & higher). Including "Its About Whanau" style campaigns for Māori audiences.	1.5
3. Endgame strategy involving phasing down the maximum permitted level of nicotine in tobacco.	1.9
4. Plain packaging (as per Australia).	1.9
5. Endgame strategy involving progressively tighter access restrictions (declining outlets to 10% of the current number).	2.1

Tobacco control intervention (n=25)	Invited experts (n=8) (mean results ranked)
6. Ban on all tobacco additives (sugars, flavours etc).	2.4
7. Changes to the provision of the existing range of nicotine replacement therapy as an adjunct to cessation.	2.5
8. Endgame strategy involving a "sinking lid" on supply (e.g., with switching to licensed nicotine users at the end of the phase-out).	2.5
9. Changes to the reach and effectiveness of Aukati Kai Paipa services for Māori smokers (via campaigns and service resourcing) – e.g., doubling both.	3.0
10. Personalised internet services and text messaging systems for cessation (much expanded beyond the current Quitline services.	3.0
11. Major smokefree area expansion (e.g., to all outdoor city areas, parks, beaches, inside cars etc).	3.0
12. Raising alcohol tax by 40% (and considering only the indirect impact on smoking).	3.1
13. Changes to the reach and effectiveness of cessation support for pregnant women e.g., doubling both.	3.1
14. Mass media campaigns focused on youth as per the successful "Truth" campaign in the USA.	3.1
15. Provision of smoking cessation clinics (new).	3.3
16. Endgame strategy involving a "Smokefree Generation" with no sales to those born since 1 January 2000.	3.3
17. Changes to the Quitline reach and effectiveness (via campaigns and service resourcing) – e.g., doubling both.	3.4
18. Changes to the provision of prescribed pharmacotherapy (e.g., varenicline and bupropion).	3.5
19. Promoting the use of e-cigarettes as a cessation measure (and for harm reduction) prior to a phase-out post 2025.	3.6
20. Changes to the reach and effectiveness of the ABC Approach for those interacting with primary health services – ("Ask"; provide "brief advice"; and refer/provide "cessation treatment").	3.6
21. Intensifying the "R-rating" system for movies showing smoking.	3.9
22. Changes to the reach and effectiveness of the ABC Approach for those interacting with *secondary* health services.	4.2
23. Intensifying enforcement around illegal sales of tobacco to youth.	4.4
24. Changes to current school-based educational interventions e.g., doubling effectiveness, increasing reach.	4.8
25. Mass media campaigns to encourage tighter restrictions on pocket money provision to youth by adults.	4.6

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