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An Ounce of Prevention? A Toolkit for Evaluating Preventive Health Measures

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Executive Summary

When the Abbott government abolished the Australian National Preventive Health Agency earlier this year, this was interpreted by some as an end to preventive health in Australia. While it is hardly true that ANPHA's demise signalled an end to government involvement in this particular sphere of medicine, it did perhaps signal the end of an era. The trajectory of the Australian government's overall preventive health strategy is now up for grabs.

Preventive health is a very broad umbrella. It includes such disparate services as vaccines for schoolchildren, laws mandating seatbelt use, blood pressure screenings, ad campaigns to discourage binge drinking, and special taxes on tobacco products. What all these programs have in common is an intention to spend money now in order to save money later—catching costly health problems before they arise or when they are less advanced and easier to treat.

However, even the most straightforward early interventions do not always save money over the long term. Contrary to the old proverb, an ounce of prevention is not always worth a pound of cure. Something as seemingly basic as a cancer screening, if it is not narrowly targeted at high-risk patients, can fail to save money. In some cases, it can even do more harm than good.

Trying to tell whether a preventive health program will be as effective—and as cost-effective—as its proponents

claim is a difficult task for policymakers and voters. This paper offers a toolkit to assist in their evaluations. There is of course no substitute for detailed analysis of an individual program in all its particulars, but preliminary to such an analysis, there are eight questions that policymakers and voters should ask of any preventive health proposal. Those questions are:

- 1. Is the program narrowly targeted or indiscriminate?
- 2. Is your message simple?
- 3. Are the targets you're setting more easily gamed than achieved?
- 4. Are you setting targets that, even if achieved, won't mean much?
- 5. Are you underestimating what the average person knows?
- 6. Are proponents using jargon, scare language, or other misleading rhetoric?
- 7. Is there a clear line between expenditure and payoff?
- 8. Is the justification for government intervention just a pretext?

To demonstrate how the toolkit can be applied, this paper concludes with a look at bariatric surgery as a preventive treatment.



Introduction

The record of preventive health measures in Australia is a decidedly mixed bag. There have been many successes, such as the decline in smoking rates by nearly half since 1980. But there have also been failures, such as the recently abolished Australian National Preventive Health Agency (ANPHA).

In spite of this mixed record, preventive health continues to be hyped as a sure-fire money-saver by politicians and media commentators. In July 2012, then NSW Minister for Healthy Lifestyles Kevin Humphries stated, "Improving people's health and wellbeing and keeping them out of hospital will not only improve health outcomes across the board, but is one of the most effective ways to manage rising health costs."

Public Health Association CEO Michael Moore put the point more bluntly: "Prevention is better than cure, and it is a false economy to cut funding in these areas." A headline on the *Sydney Morning Herald* opinion page in September 2014 declared confidently: "Tackling obesity will help reduce budget fat."¹

Some preventive measures are indeed economical in the long run, but others are not. It is not always easy to tell the difference in advance. How can a policymaker, or a voter, distinguish wishful thinking from real solutions? In practice, a hard-nosed look at even the most straightforward preventive measures, such as cancer screenings, will often reveal crucial shortcomings that can render a measure uneconomical. These shortcomings are magnified in cases where the intervention is far less straightforward and more complicated by uncertainty, such as attempts to curb obesity.

There is no substitute for detailed analysis of a policy proposal in all its particulars, but there are several key questions that can help guide preliminary analysis of any preventive health measure. This paper presents a collection of such questions as a 'toolkit'—that is, a few rules of thumb to assist in a clear-eyed look at any proposed preventive health program. Once these questions have been outlined and illustrated, the 'toolkit' will be applied to a current policy proposal by way of illustration.



Is the Program Targeted or Indiscriminate?

The more narrowly-targeted a preventive health measure is, the likelier it is to be a money-saver. Conversely, measures that target

entire populations, entire communities, entire age brackets, or other similarly broad groups, are unlikely to be cost-effective.

Cancer screenings are a good illustration of this principle. Early detection saves money in those cases where the screening reveals a patient with treatable cancer which, if left untreated, would require more drastic and expensive treatment later in its progression. However, these savings must be balanced against the costs of indiscriminate screening, including: the expense of testing so many patients; the financial and emotional costs of false positives; the identification of cancer cases that would never have become life-threatening even if left untreated; and the risk of complications arising from the testing procedure itself.

In November 2009, the United States Preventive Services Task Force recommended that women aged between 40 and 50 should not receive routine biennial mammograms, because the attendant risks—such as overdiagnosis and false positives—outweighed the benefits of early detection.² The backlash against this recommendation, and the medical response to the backlash, helped to familiarise the public with the kinds of questions involved in cost-benefit analysis of health screenings.³

In Australia, more than 132,700 women were screened under the government-funded BreastScreen Australia program in 2008-9, at a cost of \$174.5 million. Approximately 58,900 of these women were under the age of 50.⁴ A 2013 study that sought to discover whether Australian women were aware of the risk of overdiagnosis found that, in eight focus group sessions, awareness of overdiagnosis was minimal to nonexistent: "Prior awareness of overdiagnosis was limited to only a few women who had heard of it in the context of prostate cancer. The idea of overdiagnosis occurring in breast cancer screening was surprising and challenged women's beliefs about breast cancer generally."⁵

One of the authors of that study explained in a subsequent news report that, when informed that the overdiagnosis risk can be as high as 30 - 40%, individual women have very different but equally reasonable reactions:

Some women say, 'When you put it like that, I still want to be screened,' but other women look at the exact same data and say, 'No, I don't want to take that risk, I just want to live my life without getting into the medical system unless it's absolutely necessary and therefore I don't want to be screened.' So rather than having a mindset of encouraging all women to be screened, I think we should make it very clear it is reasonable to decide either way and that you're not being irresponsible to look at the information and decide actually, no, I don't want to do that.⁶

The proposition that screening for cancer is not always advisable—even when analysis is restricted to health outcomes, without bringing the question of money into the calculation—is counterintuitive to many, but those setting health policy should nevertheless keep this principle in mind.

Other routine medical screenings besides mammograms have been shown to be of disputable value, both in terms of health and in terms of monetary cost. Even as simple a procedure as the annual physical may be counterproductive. Patients who receive yearly checkups do not live any longer on average than those who forgo them, and check-ups often detect conditions that would never have resulted in any symptoms even if left unaddressed. The treatment of such conditions is a waste of time and money insofar as the patient's quality of life is not improved as a result. An exhaustive 2012 survey of data on more than 182,800 patients found that "general health checks did not reduce morbidity or mortality, neither overall nor for cardiovascular or cancer causes."7 "No one is saying preventive care is unnecessary," explained Dr Ateev Mehrotra of Harvard Medical School earlier this year. "You just don't need the annual, one-size-fits-all physical."8

Dr Mehrotra's caution against 'one-size-fits-all' testing falls in line with the rule of thumb that the more targeted an intervention is, the better. Of course, this rule of thumb is no substitute for detailed analysis of a particular intervention. For something like a cancer screening, it is necessary to have estimates for: how many cases of the disease a given screening will turn up; how many false positives it will detect; how many patients will experience side effects from the test itself; and how many patients who *do* have the disease will actually live longer due to early detection and treatment.

That last variable is especially important for preventive health measures where the benefit side of the equation is less straightforward than it is for something like a mammogram. Consider an anti-obesity advertising campaign. If the campaign is not narrowly targeted, then money will be wasted reaching large numbers of people who are not obese and never will be, just as biennial mammograms for women under 50 end up testing large numbers of women who will never develop breast cancer.

But in the case of the anti-obesity measure, there is also added uncertainty on the treatment side. Will the segment of the ad's audience that is in fact obese have better health outcomes as a result of this intervention? This is difficult to predict—more difficult than, say, the effectiveness of breast cancer treatment. Will they heed the ad at all? If they do heed it, will the effect be a positive one? After all, a narrowly targeted ad may make its obese audience feel ostracised, shamed, unhappy, and resentful rather than motivated to change their behaviour.

Indiscriminate screening can be cost-ineffective even for diseases with near sure-fire cures. Still more dubious, then, are preventive measures where the effectiveness of treatment is low, medium, or unknown.



Is Your Message Simple?

Successful preventive health measures tend to be binary—compliance with, or participation in, the program is a matter of black and white, not a

spectrum of grey. One either wears a seatbelt in a car or one doesn't. One wears a helmet when riding a bike or motorcycle, or one doesn't. One receives a vaccine or not; there is no third possibility.

When a public health program is more complex than these yes-or-no examples, it is less likely to yield demonstrable positive results. This is not just because compliance is more difficult to measure. It is also because the program is less likely to be effective.

Obesity is a good example. The causes of obesity are complex, and a behaviour change that would result in significant weight loss for one person might have little impact on the weight of another. Dramatically reducing fat intake will help the person who habitually binges on french fries but not the person whose excessive weight has more to do with carbohydrates. A tax on soft drinks might reduce consumption of them but increase consumption of other high-calorie drinks, negating any overall health effects—and indeed, there is evidence to suggest that this substitution does in fact occur.⁹ There is no simple recommendation, no one behaviour modification, that could be considered a sure-fire antidote to obesity.

Adding to this complexity is the ever-shifting science of what constitutes a healthy diet. Diet components that were once vilified are now regularly shown to be far less harmful than once believed. In the wake of a widely read June 2014 *Time* magazine cover story titled, provocatively, 'Ending the War on Fat,' popular American dietician Joy Bauer admitted: "Butter, along with other saturated fats like poultry skin, coconut oil, full fat dairy and certain cuts of red meat, are no longer the enemy."¹⁰ Other research has rehabilitated carbohydrates, even so-called 'bad carbs', another commonly cited prime cause of obesity.¹¹

Faced with this complexity, a policymaker can try one of two tactics: making the message simple at the expense of strict scientific accuracy (e.g., a slogan like 'Eat Less Fat' or 'Cut Down on Carbs'), or making the message scientifically supportable at the expense of simplicity (e.g., a vague slogan like 'Eat Healthier'). Each tactic has serious drawbacks.

An example of the first tactic would be a program designed to increase consumption of fruits and vegetables—for example, the international '5-a-Day'

campaign or its Australian variant, 'Go for 2 & 5.'¹² These programs meets the standard of simplicity. However, as an effort to combat obesity, it falls short. Increasing vegetable consumption will not improve a person's diet if that increase is not accompanied by reduction in consumption of other foods, or if the 5-a-day threshold is countered by consumption of high-calorie vegetable dishes like potatoes or onion rings.

Even when these common-sense pitfalls are avoided, studies suggest that eating more vegetables does not necessarily reduce obesity, much less improve long-term health outcomes. A U.S. study of children and adolescents found "no relation between intake of fruits, fruit juice, or vegetables (alone or combined) and subsequent changes in BMI *z*-score." The authors concluded: "Recommendation for consumption of fruits and vegetables may be well founded, but should not be based on a beneficial effect on weight regulation."¹³ Here in Australia, a study has found that obese men and obese and overweight women are more likely than those of normal weight to be meeting the '2 & 5' recommendation already.¹⁴

If 'eat more vegetables' is too simple a mantra, 'eat healthier' is not simple enough. Considering the complexity of nutrition's impact on weight, the only advice applicable across a broad population will inevitably be very generic: eat less, move more, eat unhealthy foods only in moderation, et cetera. However, generic advice is difficult for non-experts to apply in their own lives.

It isn't just lack of information that makes generic advice less useful. People deliberately ignore recommendations that challenge their own favourite vices, and focus on those that do not greatly affect them. As Michael Moore of the Public Health Association of Australia explains, weight gain is "a really complex issue, and when we have complex issues, people tend to focus on the part of that issue that won't affect their lifestyle, their bottom line, and their way of doing things."¹⁵

These challenges put policymakers in a bind. Advice that is specific enough to be actionable—like 'eat more vegetables'—will also be too narrowly framed to be effective. On the other hand, advice that is too broad will rarely result in helpful behaviour modifications. The discouraging truth may be that some public health issues simply are not suited to a 'Slip, Slop, Slap'-style campaign.



Are the Targets You're Setting More Easily Gamed than Achieved?

In 1912, a newspaper in the town of Worcester, Massachusetts, offered a cash prize of \$100 for whoever could

bring them the largest number of dead flies. Communities had been running such fly-killing competitions for schoolchildren since 1905, when a Kansas doctor pioneered the practice as a way to eliminate diseasespreading insects. Public health campaigners quickly spread the idea across the United States. In the Worcester case, however, the winner who took home the hundred dollars by bringing in *90 litres* of flies turned out to have bred them himself using rotten fish. The scandal was reported in the *New York Times*, and future fly-killing contests were forced to operate within the strict time limits of the fly breeding cycle. Within five years the anti-fly campaign had fizzled completely, largely because the absence of horses—and horse manure—from city streets had independently lowered the fly population.¹⁶

The story of the Worcester fly-killing contest is a reminder of the many ways that public health goals can be artificially manipulated. Every type of government program is at risk of relying on data that is either deliberately or unintentionally misleading, and preventive health is no exception.

Proponents of a preventive health measure can often be too quick to declare the measure's record successful. In cancer screenings, for example, mortality rates between screened and unscreened populations can give a misleading impression of the advantages of screening if 'survival' is counted from the date that the cancer was detected rather than the date it arose or the date symptoms first presented. The authors of a recent lung cancer study reminded their readers of this fallacy: "Survival is always prolonged by early detection, even when deaths are not delayed and no lives are saved."¹⁷

The prevalence of self-reporting as a method for measuring food consumption is a fruitful source of

statistical manipulation. For example, it is possible to *double* rates of self-reported recommended vegetable consumption by priming respondents' households with a mail-out of '5-a-Day' literature in the preceding 10 days. "By the 24-hour recall method, 61% of the intervention group, but only 32% of the control group, reported eating fruits and vegetables on three or more occasions on the prior day," according to one U.S. study.¹⁸

Here in Australia, the 'Fresh Kids' program in innerwest Melbourne reported a significant increase in fruit consumption among participating primary school students over the course of the program. However, this 2006 evaluation did not emphasise that a mandatory 'fruit break' was scheduled during classes as a part of the program, which no doubt boosted fruit consumption as long as 'fruit breaks' were in effect. The study also failed to include a control or comparison group.¹⁹ Such shortcuts and methodological shortcomings lurk behind many preventive health 'success stories'.

Policymakers often fail to account for these potential problems in data collection, even when the problem is foreseeable and widely understood. The unreliability of self-reporting, the necessity for control groups, the likelihood that positive effects will wane and eventually disappear over time—all of these problems are well-known to policy analysts, yet precautions are not always taken to avoid them. A recent example of this is the National Partnership Agreement on Preventive Health.

Case Study: The National Partnership Agreement on Preventive Health

The NPAPH was a program of the Council of Australian Governments (COAG) involving \$872.1 million over six years from 2009. A significant portion of this budget was tied to an array of performance targets in such fields as: smoking rates; the proportion of children and adults at healthy body weight; the mean number of daily serves of fruit and vegetables consumed by children and adults; the proportion of children participating in at least 60 minutes of daily physical activity; and the proportion of adults participating in at least 30 minutes of daily physical activity.

Funding was to be awarded to states prior to reaching these targets (facilitation payment) and in the event the targets were successfully attained (reward payment). However, the methods for evaluating these targets were flawed in ways that raise serious questions about their legitimacy. First, each state was permitted to collect its own data according to its own preferred methods. The goals were the same for each state—an increase from baseline of 0.2 in mean daily serves of fruits and 0.5 in mean daily serves of vegetables for children, for example—but with no uniformity in data collection, there could be no way to tell if states' respective records were suitable for apples-to-apples comparison. Nor was change from baseline necessarily comparable across states, since the data collection method might have changed between measurement of the baseline and measurement of results.

"For the benchmarks linked to NPAPH, there is currently little capability and no requirement to compare the states' and territories' performance," admitted the Australian National Preventive Health Association in 2013. "Each state and territory will use their own data, or nationally collected data in the case of some benchmarks, to report on how they individually met the required benchmarks or not."²⁰

According to that same ANPHA report, the preferred method among states and territories for preventive health surveys is Computer Assisted Telephone Interview (CATI).²¹ As has been discussed, self-reported food consumption results can be manipulated by, among other things, priming respondents with healthy nutrition literature. With multi-million-dollar reward payments at stake, these sorts of statistical manipulations might seem inviting.

It is laudable when governments link financial rewards to performance outcomes, rather than simply funding programs with no incentives attached. However, it undermines the hard-nosed pragmatism of this tactic if these targets are more easily attained through data manipulation than through actual progress toward the outcomes in question.

Are You Setting Targets that, Even if Achieved, Won't Mean Much? When choosing measurable objectives for government programs,

policymakers must often allow narrow goals to stand in for broader ones. For example, anti-obesity programs typically have narrow goals that are relatively easy to evaluate—like a percentage increase in the proportion of snacks classed as healthy on school canteen menus—which serve as a stand-in for overall diet improvement. However, it remains the case that the fundamental goals of such policies are broader ones, such as long-term avoidance of obesity and reduction in health costs.

Focusing on the small and measurable rather than the broad and unmeasurable is necessary for policymakers in all fields. However, it is equally necessary to pay close attention to the ways that measurable indicators are — or are not — actually linked to broader goals.

For example: A 2007 study found that Australian women (but not men) who lived in walkable neighbourhoods watched approximately 15 minutes less TV daily than women in less walkable neighbourhoods.²² This suggests that walkable neighbourhoods are related to lower levels of sedentary activity, either because people who enjoy walking choose neighbourhoods that facilitate such activity or because the neighbourhoods themselves make walking more attractive. It does not suggest it would be worth making every neighbourhood in Australia walkable in order to achieve an average 15 minutes less daily TV viewing among women.

Economic modelling of a hypothetical 100% tax on junk food in the UK showed that such a substantial price increase would still only result in a 0.2kg/m² decline in average BMI. This may be compared with the BMI above which a person is considered obese, 25kg/m², or with the average yearly growth in BMI in Britain, which since 2001 has slowed to a virtual standstill at 0.073kg/ m² for men and 0.055kg/m² for women.²³ "The small magnitudes of our estimates cast doubt on the efficacy of such taxes and subsidies," concluded the researchers.²⁴

The *State of Preventive Health Report* published by ANPHA in 2013 included an evaluation of the Get Healthy Information and Coaching Service, which found that "participants who complete the six month coaching program on average lose 3.9kg in weight."²⁵ Before labelling this program a success, however, it is important to put that 3.9kg weight loss in perspective. Will 4kg lost put an overweight or obese person within the healthy weight range for his or her height? Not necessarily—indeed, it is very unlikely. If the broader goal was to reduce the number of overweight and obese Australians, this program did not succeed.

This same problem led the Productivity Commission to counsel against using fat taxes or soft drink taxes to improve health outcomes. A modest tax will reduce consumption of a designated unhealthy food, but not enough to make a difference to an overweight person's health outcomes, even over the long term.²⁶ A study of a proposed 1% tax on saturated fats in the UK calculated that the effect on coronary heart disease levels would be negligible, because "those on the very poorest diets and who bear the highest risk continue to eat badly."²⁷

The question of whether lower obesity rates result in lower overall health spending—another broad goal of anti-obesity programs—is addressed in section 7. However, it is worth mentioning here that serious doubts have been raised over whether obesity is a good stand-in for long-term health risks in the first place. Professor Tim Olds of the University of South Australia, for example, has frequently highlighted studies showing that it is better to be fat and fit rather than lean and unfit, which has led him to conclude that money spent on promoting weight loss would be better spent promoting physical activity. "Low fitness is a stronger predictor of overall mortality than fatness," Professor Olds writes.²⁸



Figure 1: Gains disappear over time: The gap in prevalence of obesity achieved by the Christchurch 12-month anti-obesity program vanishes after 3 years

Even when a policy achievement does indicate a meaningful decrease in a given risk factor, it must be remembered that such achievements are often short-lived. Programs that achieve statistically significant progress relative to control groups often see this progress vanish in follow-up studies. A six-year follow-up study of Move It Groove It, a physical education program in rural New South Wales, found that "there was no significant difference in physical activity" between those who had gone through the program and those who had not.²⁹ A three-year follow-up of the Christchurch obesity prevention program in Britain found that "the difference in prevalence of overweight in children seen at 12 months was not sustained."³⁰

Another problem is that these targets are often *moving* targets, a natural consequence of their being in many respects arbitrary. Earlier this year, a London researcher found that seven servings of vegetables per day was healthier than the current recommendation of five per day.³¹ This served as a reminder that these targets are based on science that is still fluid. It also serves as a reminder that 'eating recommended daily serves for fruit and vegetables' is not synonymous with 'eating a healthy diet.' One may eat five servings of vegetables a day and still be overweight or still have a diet that carries health risks.

In 2014, federal physical activity guidelines for youth were updated to make them stricter. In addition to weekly goals for 'vigorous intensity activity' and weekly limits on 'use of electronic media for entertainment,' the updated guidelines added a goal of three instances per week of 'activities that strengthen muscle and bone.'32 This bone- and muscle-strengthening aspect was not added as a result of any new study or new information in particular. Indeed, it is not clear why the addition was thought necessary, unless perhaps to ensure there would always be some metric of physical activity on which Australian youth could be declared deficient. (Australia leads the pack internationally in percentage of children/youth participating in organised sport-as one might have expected of a nation noted for its love of sport – and their average time spent in physical activity is 90 minutes per day.)³³ As with vegetable serves, these unpredictable fluctuations demonstrate the essential arbitrariness of these specific standards.

Ultimately, public health problems like obesity and alcohol are fundamentally different from traditional public health problems like infectious diseases — where a person either has the disease or doesn't. Obesity is not itself a disease; it has effects not fully understood and not easily measured on a person's risk of possibly contracting certain non-communicable diseases in the relatively distant future. That makes it very difficult to set targets that give a reliable indication of real progress. In dealing with that difficulty, policymakers should never allow the stand-in goals to become ends in themselves, apart from their relevance to the main goals of greater health and lower health spending.

Are You Underestimating What the Average Person Knows?

The modern science of nutrition is not very old, dating back only to

the late 19th century. As recently as 100 years ago, most vitamins had not yet been isolated or identified. Nevertheless, many of the conclusions reached by chemists and physicists working in the field of nutrition had long been well known in the form of folk wisdom and in commonsense rules about healthy eating. Quartermasters provisioning long journeys, for example, had a good idea of how to achieve the most nutrition per cubic foot of storage space. Victorian mothers and nursemaids did not need to keep up with the research of Carl von Voit to know that youngsters should not be allowed to gorge themselves on sweets.

Preventive health advocates often speak as if the rules of healthy eating are unknown to all but experts. This implication is in many ways advantageous to their cause. Attributing a problem to ignorance can be helpful in convincing a policymaker to take action against that problem, since government intervention is more easily justified if the targets of the intervention don't know any better or can't help themselves. However, it is not always safe to assume that those who disregard an item of preventive-health advice do so out of ignorance.

More than half the doctors and nurses in Australia are overweight or obese – 58% and 57% respectively.³⁴ It can be assumed that doctors and nurses, of all people, do not need to be informed that obesity carries certain health risks. Some polls have found that more than half of respondents would support a soft drink tax on health grounds, and as Dr Michael Keane pointed out in 2010, this suggests widespread awareness of the health risks of excessive soft drink consumption.³⁵ An analyst familiar with consumer data on junk food has stated that "consumption peaks in snack foods when you're about 24. Then it starts to decline."³⁶ It is just as likely that maturity, rather than new information, is driving people in their mid-20s to make these dietary changes.

This does not necessarily mean that obesity in the medical profession, and consumption of soft drinks and junk food are not problems. However, it does suggest that if they are problems, lack of information is not the cause. In any case, there is certainly no shortage of information on health and diet available at low cost (in fitness magazines, health clubs, and diet programs, for example) or at no cost (on health and fitness websites and via advertisements for healthy foods).

Also, public health activists have sometimes demonstrated that providing the public with information is not their real goal, even when it is their declared goal. For example, when menu labelling was shown to not result in decreased consumption of junk food in New York City (see section 7 for more on this policy), the public health community did not conclude from this that consumers were making adequately well-informed choices in line with their personal priorities. Rather, they shifted to a new and ultimately successful campaign to ban large-sized sugary drinks. This suggests that behaviour modification, not the spread of information, is the real underlying objective.

#6

Are Proponents Using Jargon, Scare Language, or Other Misleading Rhetoric?

Preventive health advocates have never been shy about driving home

their points using emphatic language. Newspaper advertisements for the pioneering anti-fat book *Eat Well & Stay Well* (1959) carried the bold-face headline: Will You Commit Suicide This Year? The ad continued: "Nearly 500,000 Americans will—unintentionally, unwillingly, and needlessly—and you may well be among them." In 1965, nutrition scientist Jean Mayer of Tufts University declared that low-carbohydrate diets, by promoting increased fat consumption, were 'the equivalent to mass murder.'³⁷ Here in Australia, Nicola Roxon attracted considerable media attention during her tenure as Health Minister when she claimed in relation to anti-tobacco policy proposals, "We are killing people by not acting."³⁸

Activists are entitled to use the tools of rhetoric to persuade policymakers and the public of their arguments. However, it is important to be able to recognize these rhetorical tricks in order to avoid being misled by them. In the particular field of preventive health, there are a few common rhetorical tactics to beware.

The first of these tactics is the use of jargon. Sometimes jargon is used to make perennial forms of human behaviour seem like new developments, as in the case of 'pester power.' Opponents of advertising aimed at children, particularly food advertising, use this phrase to refer to requests for purchases directed by children to their parents. The *Sydney Morning Herald*, for example, used the term in the context of a story about junk food advertising:

Pester power is one of the biggest battles parents face in keeping their children healthy, according to The Parents' Jury, a network of parents and health professionals committed to improving children's wellbeing.³⁹

In fact, the scientific-sounding term 'pester power' refers to nothing more than the kind of nagging and wheedling that has always been an aspect of childrearing in modern times. The professionalised tone of the language and the reference to 'health professionals' do not transplant the problem into the realm of expertise rather than family culture.

One term that is used in a similar way is 'comprehensive.' "We need a comprehensive approach to stop [obesity]," said Jane Martin, CEO of the Obesity Policy Coalition, earlier this year.⁴⁰ Stan Dorn of the Urban Institute has promoted "a multi-pronged approach" to the same problem: in addition to a fat tax, he has suggested "bans on advertising fattening foods to children and more explicit labelling on fattening foods." University of South Australia academic Kerin O'Dea's suggestions for "a more comprehensive approach" include "regulation of advertising and marketing, incentives for good industry practice and regulation of pricing to drive healthier choices," and "effective social marketing campaigns ... every step of the way."

In each of these instances, terms like 'comprehensive' and 'multi-pronged' are meant to indicate that no single policy measure will solve the problem on its own. However, a 'comprehensive' policy cannot be achieved by committing to many different smaller policies if the individual components are not justifiable on their own terms.

Another common tactic is to import terms from medical or social science (e.g., 'time discounting,' 'self-interest'). This can give a patina of certainty to statements about preventive health risks that, while partially grounded in science, are fundamentally matters of personal judgement rather than logic or fact. Dr Ben Goldacre has cautioned his fellow doctors against recommending preventive treatments to patients with the same confidence and authority that they recommend ordinary medical treatments:

> When we offer statins [for cardiac health], or any preventive treatment, we are practising a new kind of medicine, very different to the doctor treating a head injury in A&E. We are less like doctors and more like a life insurance sales team: offering occasional benefits, many years from now, in exchange for small ongoing costs. **Patients differ in what they want to pay now, in side effects or inconvenience, and how much they care about abstract future benefits. Crucially, the benefits and disadvantages are so closely balanced that these individual differences really matter** [emphasis added].⁴¹

Even some within the field of public health worry that their discipline has not been entirely honest in its representations to the public—specifically, that it has made statements intended to sound as if they were backed with full scientific authority even though the medical evidence for those statements is inconclusive or contrary. At an ANPHA forum in 2012, Professor Peter Sainsbury expressed these concerns, as recorded in the minutes:

Professor Sainsbury urged participants to be rigorously honest in their relationship with the public. As an example, he gave evidence of why obesity is important at a population level but not such an important risk factor for each individual. And while the first message has been well disseminated, the second has not. $^{\scriptscriptstyle 42}$

Policymakers should be wary of the sort of rhetorical sleight-of-hand that Sainsbury warned his audience against committing. (The 'first' and 'second' messages

the minutes mention without explaining in detail are, briefly: On one hand, increasing incidence of obesity in a population leads to higher risk of various obesity-related problems; on the other hand, for most individuals, being obese or not obese is unlikely to have a determining effect on his or her health outcomes.)

The Tobacco Comparison: An Especially Suspect Rhetorical Standby

The most commonly abused rhetorical tactic in the preventive health arsenal is the comparison with smoking. Everything from soft drinks to sitting has been described as 'the new smoking' by those urging government action against a health risk. "Tax has been used to decrease smoking ... so we need to look at how it could be used to improve our diets," said Dr Kelly Brownell of Yale University in 2011. And he is hardly the first to suggest the campaign against cigarettes might serve as a useful template.⁴³

It is easy to see why this comparison is an attractive one. The campaign against smoking has succeeded in its objective of decreasing smoking rates, and it enjoys widespread public support.⁴⁴ However, replication of the anti-tobacco model is, for most current preventive health causes, neither possible nor desirable. The kind of society-wide unanimity the anti-smoking movement has been able to achieve is very difficult to bring about, especially if the research demonstrating an activity's riskiness is even the slightest bit equivocal—as it is for sitting, fat, sugar, and alcohol. There is also far less public support for interventions to limit consumption of junk food, sugar, salt, or soft drinks,⁴⁵ which limits the political feasibility of such measures.

Also, in the case of obesity, there is already a large and profitable private sector market in products and services to help with weight loss, from gyms to low-calorie groceries. Smoking cessation was a much less crowded market, allowing government intervention to make significant progress in increasing the availability of smoking cessation tools. The success of award-winning anti-smoking app 'My QuitBuddy,' developed by ANPHA, could not be replicated in the field of dieting, because so many high-quality dieting apps already exist.

But even if scientific and market realities did not limit the feasibility of replicating the anti-tobacco model for other preventive health causes, there is reason to think that such a replication would not be desirable, even to the new cause's staunchest advocates. There are elements of the anti-smoking campaign that anti-obesity activists, for example, might not want to repeat. Taxes make up roughly two-thirds of the price of a pack of cigarettes. It is unlikely that anti-obesity activists really want to implement an equivalent price increase for food products, even for unhealthy foods (assuming a fair definition of 'unhealthy' could be arrived at), especially since a fat tax means the poorest consumers would end up spending seven times as great a share of their total income as the richest.⁴⁶

Stigma has been a crucial tool in the fight against tobacco. "An increase in the social unacceptability of smoking has dramatically decreased tobacco use in the USA," states one study, which then analyses various sources of this stigma, including dating and hiring preferences favouring non-smokers.⁴⁷ Positive representations of cigarette smoking in the media have been actively discouraged, another form of 'denormalisation.'

Replicating the anti-tobacco strategy for obesity would necessarily involve replicating this stigma. The New South Wales Healthy Eating and Active Living Strategy 2013-18, for example, proposes that public education campaigns should "raise awareness of the health risks associated with physical inactivity, unhealthy eating, and obesity; and influence social norms, public opinion, and public policy." Influencing social norms to combat obesity is similar to, and in some cases identical to, 'denormalisation' of obesity along the same lines as tobacco.

At the same time, there is an equally strong conviction among many preventive health advocates that the stigma against obesity is currently too great and should be reduced.⁴⁸ Jackie Wykes of the University of Melbourne has complained that "popular ideas about fatness and health often reinforce social inequalities across class, race, gender, and ability."⁴⁹ Researchers at the University of New South Wales have bemoaned the "disturbing trend" of "public health campaigns explicitly endorsing obesity stigma as a strategy to combat obesity." They also note that genetic factors influence obesity, which raises worries that anti-obesity programs might be unfairly discriminatory.⁵⁰

Comparisons with the campaign against smoking are common in the preventive health field, but it is important to consider, in each case, whether the comparison is an apt one.

Is There a Clear Line Between Expenditure and Payoff?

Of all the justifications for public health interventions, the one that

is most appealing to many hard-nosed and pragmatic policymakers is the claim that prevention saves money. "For a modest cost, this agency [ANPHA] would deliver far greater savings to future health budgets," claimed MP Melissa Clarke during parliamentary debate on the abolition of ANPHA.

As we have seen already in our discussion of cancer screenings in section 1, the old maxim about an ounce of prevention being worth a pound of cure does not always hold true in the field of health care. There are several questions that must be asked any time a program is purported to be a money-saver, in order to keep the connection between expenditure and savings as clear as possible—and to expose those claims that do not stand up to scrutiny.

First, the effectiveness of the intervention must be clearly substantiated. A policymaker who would like to address the negative social effects of public drunkenness might consider implementing an outdoor drinking ban. Before even beginning to speculate about whether the reduction in anti-social incidents is of sufficient value to justify the expenditure required for enforcement, it is necessary to ask whether outdoor drinking bans reduce anti-social incidents at all in the first place. And indeed, studies in Australia have found "no evidence that these laws reduced alcohol-related crime or harm."⁵¹

Similarly, early evaluations of menu labelling in New York City have found that customers were more aware of calories when purchasing fast food but their actual calories purchased did not change as a result.⁵² In fact, despite Mayor Michael Bloomberg's many public health interventions, such as the trans-fat ban, obesity rates in New York City increased 25% over the course of his mayoralty.⁵³

The second question that must be asked, once a program's basic effectiveness has been substantiated, is whether its effect will be of a sufficient scale to justify its cost. Promotional material for the New South Wales 'Healthy Workers Initiative' states: "Absenteeism costs Australian business about \$2,100 per worker, per year-so it makes good business sense." In fact, it cannot be claimed with confidence that the program 'makes good business sense' without knowing how much of a disparity in absenteeism exists between unhealthy workers and healthy workers, or how much must be spent in order to shift a worker from unhealthy to healthy. A U.S. study of workplace wellness programs, for example, found that lifestyle wellness programs "did not provide more savings than it cost to offer."54 In preventive health, magnitude matters.

An illustration of this principle is offered by diabetes prevention. A 2009 study of regular check-ups and diagnostics for diagnosed diabetics compared the cost of the preventive program with savings gained through, e.g., averted complications. The study found that "only about two-thirds of that cost would be recovered in the first decade, when fewer complications materialize, and more than three-quarters would be recovered over 25 years." As promising as this sounds, it means that only the very youngest patients, aged 24 to 30, will end up participating long enough to see the preventive program pay for itself in savings.⁵⁵

Costs are another figure that must be estimated as accurately as possible when considering whether a program's benefits will be of sufficient size to justify its implementation. Unfortunately, many cost-benefit analyses neglect to consider certain very important costs associated with banning or discouraging risky behaviour. Most frequently neglected is the enjoyment people get from engaging in these behaviours—or, in cost terms, the lost enjoyment they forgo when the behaviour is banned or discouraged.

Eric Crampton has illustrated the nature of these costs with the example of skiing: Downhill skiing is a very risky activity that can potentially result in serious accidents, broken limbs, getting lost or stranded, or running afoul of the elements in other ways. These risks can cost the government money, for example in health care or in search and rescue. It would make perfect sense to argue that skiing should be banned and its fans forced to find some less dangerous pastime-perfect sense, that is, provided that you ignore the fact that banning skiing deprives millions of people of a cherished pleasure. "For every skier who dies in an avalanche, tens of thousands of others took no fewer risks but enjoyed a great time out on the slopes," Crampton writes. "Their enjoyment ought to count for something."56 The cost of forgone pleasures similarly applies to other risky behaviours that have been subjected to cost-benefit analysis.

The third issue to be considered is whether a policy's cost savings hold up in the long term. It is not economical to take steps to avert costs within a five-year span if those savings will be negated by greater costs within a 10or 15-year span. Dr Jeremy Sammut has explained the principle of 'delayed demand' in a previous paper for the Centre, and research continues to bear out the principle that postponing health care costs until patients are older and frailer is not necessarily a money-saver.⁵⁷

Sometimes countervailing costs arise as a result of extended life spans. "Although effective obesity prevention leads to a decrease in costs of obesity-related diseases, this decrease is offset by cost increases due to diseases unrelated to obesity in life-years gained," found one study. The authors concluded: "Obesity prevention may be an important and cost-effective way of improving public health, but it is not a cure for increasing health expenditure."⁵⁸

There is also the possibility that people's behaviour will change as a result of new obesity interventions. If government subsidies for bariatric surgery are expanded, then people might be less afraid to let their weight balloon, since they believe the government will 'bail them out' with surgery. It has been shown that people who are told obesity is a disease lose less weight during a dieting intervention than those who are told obesity is a matter of behaviour choices.⁵⁹ This suggests enshrining the mantra that obesity is a disease





Source: Van Baal et al. (2008)

might have an enervating effect on people's personal commitment to weight loss, possibly because they lose any strong sense of agency.

All of these cautions have so far focused on the solution side of preventive medicine (i.e. the cost-effectiveness of interventions) but the same principles can be applied to the problem side (i.e. calculations of a preventable health problem's cost to society). Claims for the societal costs of a health problem, such as obesity, can be made to seem misleadingly high, just as the economic advantages of anti-obesity interventions can be exaggerated.

Is the Justification for Just a Pretext?

Government Intervention

In the past century, preventive health measures have been justified by many

different rationales. Eugenic justifications enjoyed a vogue in the early twentieth century, with advocates like Harvey Wiley pushing for greater consumption of beef in order to avoid becoming "a race of mollycoddles."60 During wartime, politicians like American vice-president Henry Wallace promoted 'protective foods' that would "furnish the nervous energy to drive us through to victory."61

Another perennial has been the 'healthy workers' argument, which justifies preventive health as a way to boost economic productivity. This rationale remains popular even today, with the National Preventive Health Task Force explicitly including among its goals "to produce a healthier workforce which in turn boosts economic performance and productivity." The 2013 State of Preventive Health report published by ANPHA expressed an aspiration to make "disease no longer a barrier to wellbeing or socioeconomic development" (emphasis added).

As various justifications for preventive health have waxed and waned, dedicated wowsers who oppose indulgence on principle have adapted by embracing

each rationale in its turn. The temperance movement, for example, was happy to employ eugenic arguments in its campaign for alcohol prohibition, even though the temperance movement itself both predated and outlasted the eugenics fad. It is therefore important for policymakers to be on guard against advocates who appropriate the latest justifications merely as a cover for the fundamental aim of reducing consumption of alcohol, tobacco, sugar, fat, and other similar pleasures.

Sometimes a preventive health advocate's motives are revealed through language choices. The World Health Organisation, for example, has stated in a recent report that "more needs to be done to protect populations from the negative health consequences of alcohol consumption." This statement contains a revealing slip: 'alcohol consumption' itself is not significantly harmful to long-term health, only a *dangerous level* of alcohol consumption is. (Some studies have indicated that even low levels of alcohol consumption carry cancer risks, but these studies often ignore confounding variables, rely on self-reporting for records of alcohol consumption, and disregard the health benefits that have been shown to accompany moderate alcohol consumption.)62

Sometimes the clue lies in an advocate's use of insufficient or inconclusive scientific data to camouflage what is essentially an ideological point. For example, we saw in section 7 that the lifetime health costs of obese patients are not greater than those of nonobese patients. Nevertheless, many continue to promote obesity prevention as a health care cost saving measure. In contemplating this apparent inconsistency, one should keep in mind that a certain portion of the population has always condemned those who place greater value on enjoying life than on long-term health. Rather than accepting that different people have different preferences, those who are afflicted with this censorious streak oppose unhealthy food and alcoholic drink on principle.

In other cases, preventive health advocacy is a cover for other kinds of prejudice. Anti-alcohol outcry in Australia focuses on binge drinking among young people, but in

fact "those aged 55-64 reported the highest rate [of] risky drinking" according to the 2013 *State of Preventive Health* report. Fast food is demonised far more than equally rich foods with upper- rather than lower-class associations.⁶³ Some bans on indoor smoking include exemptions for cigar bars, favoured by a relatively wealthy clientele, but not for ordinary pubs.

Policymakers are accountable to taxpayers, who would rather not see their money spent on something well outside the government's purview. They are also accountable to their constituents, who would rather not be subjected to government interference without good reason. It is therefore crucial for policymakers to demand perfect clarity of argument and of evidence from those who would intrude government regulation further into citizens' choices. Among employers who offer wellness programs in their workplaces, more than half reported not knowing their program's return on investment.⁶⁴ When the dollar being invested is the taxpayer's, such uncertainty is unacceptable.

Toolkit in Action: Subsidizing Bariatric Surgery for the Overweight

Policymakers concerned with the health costs of obesity have begun to contemplate bariatric surgery as a more decisive alternative to non-surgical interventions. Between 2005-6 and 2009-10, the number of claims for Medicare Benefit Schedule items related to bariatric surgery more than doubled, from 55,000 to 147,000.

At present, bariatric surgery is recommended only for patients who are morbidly obese (i.e., have a body mass index greater than 40) or who have a BMI over 35 and also have a related illness or impairment. However, certain academics and lobby groups have suggested that these guidelines be expanded, for example by extending eligibility to the merely overweight (BMI over 25) or by allowing surgery to be considered a first-line option in preference to non-surgical interventions in more circumstances.⁶⁵ How should policymakers begin to think about such proposals?

Is the program narrowly targeted? Extending coverage of bariatric surgery to the merely overweight goes against the basic rule of thumb that narrowly targeted interventions are more likely to be cost-effective. It would involve treating a population at lower risk than the population currently covered for the procedure. Therefore it provides a costly surgery for more people who would otherwise never develop obesity-related medical costs.

Is there a clear line between expenditure and payoff? It is true that bariatric surgery accomplishes its basic goal—patient weight loss—more reliably than nonsurgical alternatives. Dietary and lifestyle therapy, for example, have been found to result in an average of less than 5kg of weight loss after two to four years, whereas surgery patients' average weight loss after two to four years was 25–75kg.⁶⁶

However, this is not the only relevant question when considering surgical treatment as a preventive measure to combat obesity. It must also be considered whether the cost of the surgery is greater or less than the cost of treating obesity-related complications as they arise. A Sydney study of bariatric surgery recipients found 55% reduction in hypertension and 63% reduction in sleep apnoea after two years.⁶⁷ This is a positive result for surgery proponents, but media coverage of this result neglected to highlight the disparity between the relatively low cost of treating a condition like sleep apnoea versus the relatively high cost of surgery.

When the cost of surgery has been compared with the cost of treatment, the results have not consistently favoured prevention. A 2013 U.S. study found that, after six years, average medical costs were approximately the same for patients who had had bariatric surgery and those who had not. The researchers concluded: "bariatric surgery does not reduce overall health care costs in the long term."⁶⁸

Are proponents using misleading language? In the course of promoting Obesity Australia's latest fivepoint plan to address obesity, including by subsidising bariatric surgery, executive chair John Funder cited the \$1 million lifetime health costs associated with obesity according to his organisation's estimates. "Obesity is ... draining the public purse and dragging down the country's productivity," he said.⁶⁹

However, when confronted with scientific findings that cast doubt on surgery's cost-effectiveness relative to treatment, proponents shift their ground. "Bariatric surgery is not about cost-effectiveness," said Professor Paul O'Brien of Monash University in 2013. "It's about quality of life."⁷⁰ This may be the case for individual patients who choose to undertake surgery. From the perspective of public policy, however, those who justify a proposal on the grounds of cost-effectiveness should be consistent in doing so. If not, policymakers have every right to reject the proposed policy.

Conclusion

When it was confirmed in early 2014 that ANPHA had been among the agencies axed by the new Abbott government, many in the field acted as if this marked the end of preventive health in Australia. A conference held in August 2014 on the legacy of ANPHA was jokingly described by attendees as 'a wake for preventive health.⁷¹ The truth is that preventive health will continue to be addressed by state and federal policymakers after the abolition of ANPHA, just as it was addressed by them before the agency was created. Preventive health, as a broad policy area, is not going away. This paper has shown how difficult it can be to design preventive health policies in a cost-effective way even when the intervention is straightforward and the uncertainties involved are kept to a minimum. Many of the preventive health measures that will be urged upon policymakers in the coming years will not be straightforward at all, but will involve unpredictable human factors and far-from-guaranteed attempts to influence behaviour. In considering such proposals, the toolkit outlined above should be taken as a preliminary guide, both when the link between policy and prevention is clear and when it is complex and tenuous.

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