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High-quality research and perspectives from academics, practitioners and policy makers contributing to the knowledge base and evidence for health promotion

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EDITORIAL

WILEY Health Promotion Journal of Australia

Editor's introduction: How would you spend $100 million a year on preventive health?

In 2017, The Australian Prevention Partnership Centre approached the editors of the Health Promotion Journal of Australia (HPJA) with the concept of a supplement comprising commentaries by invited national and international policymakers, researchers and practitioners on the topic of "How would you spend $100 million a year on preventive health?" We were keen to support this special supplement as a fundamental aim of the journal is to facilitate communication between key actors to affect societal change to improve health outcomes.

Looking back at the history of health promotion, improvements in health have largely been achieved through collaborations and the modification of structural variables, such as environmental, economic and legislative change, cultivated by evidence and activism.[1] There are no better examples of what can be achieved through a collaborative and comprehensive approach to complex issues than tobacco control and road safety, whereby the desired outcomes were achieved through multiple strategies and organisations.[2]

The commentaries in this supplement all document the need for a comprehensive approach to address priority health issues, such as physical inactivity, poor nutrition, overweight and obesity and maternal and child health, all of which are complex and challenging problems. The campaign against tobacco control and road safety has been ongoing, requiring a range of health promotion initiatives. To appropriately tackle other complex health issues that are documented in this supplement, we will require even more resources.

The HPJA will continue to gather and disseminate evidence to support individual and collaborative advocacy, and comprehensive approaches to tackle these complex health issues. The desired outcome will be achieved, not through one strategy but a range of diverse, sustained strategies and multi-sectoral collaborations. We at the HPJA hope that this supplement contributes to discussion and action in this space.

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EDITORIAL

WILEY Health Promotion Journal of Australia Australian HEALTH PROMOTION Association

HPJA special edition introductory comments

Chronic diseases (including cardiovascular diseases, cancers, chronic respiratory diseases, musculoskeletal conditions and diabetes mellitus) and their biomedical risk factors (such as obesity, hypertension and hyperlipidaemia) are a serious and urgent global population health problem.[1] In Australia, chronic diseases are responsible for eight out of every 10 premature deaths,[2] over 11 million of the population have at least one chronic disease and chronic diseases account for 80% of years lost due to ill health, disability or early death.[3]

The financial burden of chronic diseases on the Australian community is considerable and growing. Based on 2008/2009 data, the Australian Institute of Health and Welfare (AIHW) estimates that 36% of all health spending—about $27 billion a year[3]—is spent on treating chronic diseases, with this amount dwarfed when accounting for the costs of lost productivity and caring for people with disability.[3] Chronic diseases also come at a considerable personal cost to individuals and their families, and adversely affect how millions of Australians live their lives every day.[3]

Promisingly, it is widely acknowledged that much of the burden of chronic disease is preventable. The AIHW estimates that at least 31% of the burden of disease could be prevented by reducing exposure to modifiable risk factors such as tobacco use, harmful alcohol use, high body mass, physical inactivity and high blood pressure.[4] Yet, despite recognition of the urgent need to control chronic diseases[5] and growing evidence on both the effectiveness and cost-effectiveness of prevention,[6] and the significant successes in some countries in the prevention of cardiovascular disease, no country, including Australia, has successfully reversed or even contained the rising overall burden of chronic disease.

Australia currently spends more than $2 billion on preventive health each year, or around $89 per person—significantly less than other comparable OECD countries.[3] The argument is often made that Australia should increase spending on preventive health. However, research conducted by The Australian Prevention Partnership Centre[7] has recommended that rather than focusing on "how much" we spend, we should focus on "where we target" the spending.

In this research, commissioned by the Foundation for Alcohol Research and Education (FARE), Professor Alan Shiell and Hannah Jackson reviewed what was known about how much Australia spends on disease prevention each year and how this compares with other countries such as Canada, New Zealand and the USA. A summary of the report's findings is in this journal (see page 7 of this issue). In brief, the main conclusion of this research was that comparing our current spending on prevention with that of other countries tells us nothing about how much we ought to spend, because it does not cover whether increases in spending would be efficient or equitable. Instead, it would be more useful if we were to focus on the cost-effectiveness of interventions rather than the total amount spent. In other words, the key to determining the best way to finance prevention is to reorganise the current suite of preventive health activities and increase spending in those activities assessed as most cost-effective.

To gain a sense of where new resources could be targeted most effectively, The Australian Prevention Partnership Centre funded and commissioned this special issue of the *Health Promotion Journal of Australia*. The following commentaries comprise a thought experiment asking what would happen if spending were to be increased by just 5% of the current annual budget, or about $100 million per year. The commentators are Australian and international leaders in preventive health across academia, advocacy and policy, who were invited to answer the question: "If you had $100 million a year to spend on prevention, what would you spend it on to make the most impact?"

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EDITORIAL

WILEY Health Promotion Journal of Australia Australian Health Promotion Association

What would I do with $100 million? I wouldn't start from here! — Insights by Paul M. Kelly

In an ideal world where the future is truly cherished and prevention is more than an abstract concept—often advocated for, but rarely defined and always the "poor cousin" to clinical services—it is tempting to choose an aspirational spending target. However, this can be counterproductive if the money is allocated to ineffective programs with unrealistic time frames or goals and especially if they are targeted at risk factors or diseases which do not contribute to a significant burden of ill health and/or healthcare costs.

So, in keeping with the usual response to a request for directions in Ireland, my response to the question "How would you spend $100 million on prevention?", my answer would be "I wouldn't start from here!" In other words, I would prefer not to commence by working backwards from a monetary figure and a limited timeframe. Rather, when considering how a preventive strategy might be implemented, I suggest that several alternative questions should be posed, and answered, before any money is allocated:

1. What are we attempting to prevent, in which segment of the population with what disease burden?
2. In which settings will programs be implemented, to achieve which objectives?
3. How will decisions about spending be made?
4. How will programs be implemented and by whom? And finally,
5. How will success be measured?

Ideally, these matters need to be resolved before specific programs are proposed and costed. Furthermore, it is a widely held view that the best way to ensure that the best decisions are made and that a strategy will be maintained in the long term is through the formation of a strong, broad-based partnership.[1] One approach to achieving and sustaining such a partnership is through the process of collective impact, which has been described as:

> *The commitment of a group of important actors from different sectors to a common agenda for solving a specific social problem.*[2]

Key components for success of this approach include the creation of an agreed agenda, with shared measurement systems, mutually reinforcing activities and continuous communication facilitated by a "backbone" support organisation.[2]

I once worked with a public health policy advisor who, in his first weeks in a new role in a newly independent country, locked himself in a room to develop the "A to Z guide to developing the national health system". Each letter, from "A" for Anthrax through to "Z" for Zoonoses, had a one-page explanation which included a description of the problem to be addressed, the programmatic concept, the likely human and other resources required, an indicative budget and a short set of performance indicators to guide evaluation and reporting. With reference to this approach, and based on my own experience as a policymaker and public health practitioner, here is my A to Z guide for Australian policymakers faced with an unexpected funding windfall to support chronic disease prevention:

Anything with kids so as to gain maximum future benefit. You can be a "nice nanny" to kids, in fact recent Australian surveys suggest that the majority of the community actually expect governments to intervene to prevent health harms in this age group;

Be realistic—$100 million sounds like a lot, but it is only $4.50 per Australian resident per year, that is the equivalent of one coffee, per person! This is unlikely to be able to support any useful intervention if it is aimed at individuals;

Concentrate on *Chronic* diseases and their risk factors including obesity, physical inactivity, unhealthy diet, alcohol misuse and tobacco consumption, because the burden is greatest.[3,4] Always look for opportunities for *Coproduction* of programs to achieve *Cobenefits* as this is an excellent way to reinforce cross-sectoral partnerships. Finally (for *C*), *Communication* products are essential to garner and to keep interest, both in the political sphere and with the community—these need to be *Clear*, *Consistent* and *Constant*;

Don't forget *Doctors*, they can be strong advocates for prevention, and their clinics can also be key settings for cost-effective interventions (which could be funded by another budget line!);

Evidence generation and dissemination is a key component of preventive health efforts. *Evaluate* the whole as well as the various parts of any intervention and in particular, look for *Early* wins as success will usually breed success. And don't forget *Equity*. Whatever is done it must not widen the gap in health outcomes for the most vulnerable members of our community;

Friends—this is hard and often lonely work, find them and keep them close;

Goals need to be meaningful, achievable and measurable. Pick some short-term goals which can demonstrate early success, as well as longer-term outcomes;

Holistic programs are ideal, but hard to explain, so carefully craft a narrative and gather a strong evidence base for need as well as cost-effectiveness;

Incentivise Industry, sensibly. It is good politics and if done in the right way and with the right industry partners, it might just work to change the culture in ways in which governments just can't;

Joining up government and the community is likely to result in the best chance to achieve collective impact;

Key stakeholders need to be involved, from the beginning, and in key decision-making—the community, politicians, policymakers, program implementers, civil society, academia and business groups;

Leadership is essential, and it needs to be bold, sustained and at multiple levels;

Maintain a commitment to long-term planning and funding, and bust *Myths* which can be so influential in hampering effective interventions—school canteens don't go broke if they offer healthy options, kids can actively travel to school safely, fire stairs can be made available for routine use, urban environments can be modified to improve walkability, caterers can adopt healthier choices when there is a market advantage to doing so;

Name the culprits for unhealthy environments and commit to finding ways to change these structural determinants which are promoting unhealthy choices;

Open to new ideas. Adaptability and flexibility are keys, and a collective impact framework fosters this way of working;

Population focus is key because it is likely to be the most cost-effective approach and lead to sustained changes. *Partnerships* and *Political* commitment are worthy of repetition here;

Questions need to be anticipated in advance, because they will come from supporters as well as opponents of change. Have a clear narrative and simple, easily understandable and oft-repeated messages about the problems being addressed, the programs being implemented and the progress being made;

Regulation will inevitably be seen as "nanny state", and there will be strong opposition. However, for population impact and cost-effectiveness, this needs to be part of the package, or at least be the "stick" which drives the adoption of reforms based on "carrots";

Stories—to define the problem and the health consequences for maximum effect, make it personal. Children with foetal alcohol syndrome failing at school, the teenager dying with heart failure secondary to morbid obesity, young adults with life-limiting complications of type 2 diabetes; these tragic and very human stories are currently hidden in the statistics. They need to be revealed for greatest impact;

Trust is the most crucial component of successful partnerships for collective impact. It takes time and effort to develop, and is quickly lost if it is not actively fostered;

Unhealthy products and behaviours need to be seen in a deterministic way—let's concentrate on the environments rather than the individuals, on the products rather than the companies;

Virtual reality, in this case simulation modelling in its various forms, can assist in planning and decision-making as well as bring others along a journey to rational thinking and innovative solutions;

Whole of government, *Whole* of community, *Whole* of life;

Xpect (sic) a well-organised, well-funded opposition and therefore form (and fund) a "coalition of the willing" from the start as a key component of the strategy;

"Yes we can"—with a nod to former US president Obama, this is the right thing to do, it's the right time, so let's do it;

Zeal is required to persist against the odds, but beware of *Zealots* because they can sometimes be narrowly focused to the detriment of wider collaboration and engagement. Alternatively, I offer *Zapateado* which is a lively Latin American dance genre, akin to tap (*zapato* is Spanish for shoe). As a strong advocate and participant of community dance initiatives, I have included this as a potential innovative approach to increasing physical activity which might be worth a try, but only if an evidence base can be found for acceptability, feasibility, scalability and effectiveness.

Of course, in the real world, funding opportunities do arise quickly and policymakers do need to be ready to take advantage of these "windows of opportunity" when they arise.[5] Many of the "wicked problems" which we face in relation to chronic diseases in Australia are indeed complex, but the solutions are not necessarily complicated. My aforementioned policy colleague used his A to Z file whenever opportunities arose and, by the end of his five-year tenure, almost all of the programs had been funded and implemented.

To that end, I would suggest the most effective way to spend $100 million would be to establish and adequately fund a backbone organisation, external to government, to facilitate a substantial national collaboration for prevention. Such an organisation would need to be:

1. In possession of a legislated mandate for decision-making, with dedicated base funding beyond a single budget cycle;
2. Overseen by a governing board which has content experts, community advocates and officials from national, state/territory and local governments, preferably in equal numbers;
3. Led by someone who understands how government works but also has a strong background in leadership, management and research;
4. Characterised by strong governance and probity;
5. Evidence-led but also leading the creation of globally significant evidence to build and support effective preventive health policy and practice;
6. Encouraged to convene experts, to build capacity for the future and to develop accessible communications materials;
7. Empowered to leverage the $100 million in base funding through contracted work, research and other partnerships and, dare I say, by advocating for hypothecated taxes on lethal but legal products.[6]

Does this sound familiar? It should do. What I am proposing is essentially a combination of The Australian Preventive Partnership Centre[7] with some elements of the original proposal for the now defunded Australian National Preventive Health Agency.[8] It has more than a passing reference to peak public health organisations in other countries, notably the United States Centers for Disease Control & Prevention,[9] the Public Health Agency of Canada[10] and Public Health England.[11]

Australians have been chronically underserved in national leadership, commitment and funding for prevention, and it is time

to act. Let's build a coalition, advocate for appropriate spending, secure the budget, create the structures and get started.

CONFLICT OF INTEREST

The author declares that there are no conflicts of interest in connection with this article.

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COMMENTARY

WILEY Health Promotion Journal of Australia

How much does Australia spend on prevention and how would we know whether it is enough?

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1 | INTRODUCTION

Chronic disease is responsible for 83% of all premature deaths in Australia and 85% of the burden of disease. Conditions such as cardiovascular disease, chronic kidney disease and type 2 diabetes impose significant costs on the healthcare system and yet are also largely preventable. This raises questions about whether Australia is doing enough to prevent disease and in particular, whether governments should be spending more.

Here, we summarise what is known about how much Australian governments spend on prevention, and we compare this with spending in other OECD countries. We then consider arguments about whether we spend enough.[1]

2 | HOW MUCH DOES AUSTRALIA SPEND ON PREVENTION?

According to the Australian Institute of Health and Welfare, Australia spent a little more than $2 billion on prevention in 2013-2014 or about $89 per person.[2] This represented 1.34% of all health spending and 0.13% of gross domestic product (GDP). Total spending has increased in real terms since 2000, but has remained fairly constant as a share of GDP (with the exception of 2007-2008 when the federal government invested heavily to support the introduction of vaccination against HPV). The share of total health expenditure going to prevention has fallen since 2000 from 1.74% to its current level of 1.34%.

Internationally, Australia's spending on prevention is distinctly "mid-table". Of the 31 OECD countries reporting spending on prevention in 2013, Australia ranked 16th in terms of per capita spending, 19th in terms of share of GDP allocated to prevention and 20th in terms of share of current spending on health.[3] Australia reportedly spends less than one half of the amount spent on prevention in the USA, the United Kingdom, Canada and New Zealand.[4]

Such comparisons should be made carefully, however, as despite efforts to standardise the way jurisdictions report their health expenditures, differences still exist, both within Australia and internationally, in how prevention spending is coded. The Australian accounts, for example, do not report spending on prevention by agencies other than health departments, nor do they include all that health agencies spend on preventive measures under the "public health" tab. The cost of cholesterol-lowering drugs, for example, is reported alongside all other pharmaceuticals, and measures taken by general practitioners are all accounted for under primary care. By one estimate, spending on prevention in Australia could be up to 12 times greater than that which is reported in the national accounts.[5] More formal efforts to quantify the shortfall in recording prevention activity in national accounts elsewhere suggest that spending could be between three and five times as much as appears in the accounts.[6,7] However, this cannot explain Australia's position relative to other OECD countries as the same sorts of accounting issues apply elsewhere.

Accounting methods therefore explain some but not all of the differences between Australia and other countries in the amount that is spent on prevention. And against the backdrop of the increasing burden of disease, the fact that Australia appears to spend considerably less on preventing disease than the USA, the United Kingdom, Canada and New Zealand is seen by some public health advocates as reason enough to increase spending here.[8,9]

Unfortunately, this argument is quite easy to undermine. With the exception of Aboriginal and Torres Strait Islander people, the

health of Australians is as good if not better than the countries with which we are compared. If they are spending more on disease prevention, then they are not reaping any obvious benefit.

3 | HOW MUCH SHOULD WE SPEND?

Thus, we should resist the temptation to infer that Australia should spend more on prevention simply because it appears to spend less than our neighbours. Instead, the key to determining how much we should spend involves assessing both the costs and benefits of changes in resources allocated to prevention.[10] Step 1 involves looking for opportunities to reallocate resources away from relatively cost-ineffective options to policies or programs that are more cost-effective. Step 2 is to compare the added value of an increase in spending to the opportunity cost of that increase. That is, we could compare the benefits of increasing prevention spending annually by $100 million, for example, with the benefits lost because that $100 million can no longer be spent on something else, such as reducing hospital waiting lists, or improving the quality of early child development programs. If the value of the benefits derived from spending more on prevention exceeds the value of the opportunity cost, then there is a case for increasing spending. We should also look at what prevention activities might be curtailed if spending were to be reduced by $100 million and compare the impact of this with the benefits that would be gained by allocating that $100 million to something else. This process is what economists refer to as marginal analysis.[11]

4 | WOULD INCREASED SPENDING ON PREVENTION REPRESENT VALUE FOR MONEY?

There is clear evidence that many preventive health interventions are cost-effective. The 2010 Assessing Cost-Effectiveness (ACE) in Prevention study[12] evaluated more than 120 such interventions in the Australian context. Several of these were found to be "cost-saving": the cost of the intervention offset by savings resulting from a reduced need to treat disease. These typically involved policy actions to reduce consumption of hazardous goods such as alcohol through changes in tax rates. Other interventions improved health at a cost that would be deemed reasonable in comparison with what we currently spend to treat disease. These results have been confirmed in other evaluations of actions to promote health and prevent disease.[13–16] Apart from the policy interventions, there is often no pattern to what is and is not likely to be cost-effective. For example, in preventing HIV/AIDS, distribution of condoms can be highly cost-effective or highly cost-ineffective depending on the specific characteristics of the intervention.[11] Furthermore, the ACE study only considered cost-effectiveness. An intervention will also have value if it reduces inequalities in health, and while equity is not easily incorporated into cost-effectiveness calculations, the marginal analysis does allow such considerations to be factored into the decision-making process.[10]

5 | CONCLUSION

A strong case can be made for increasing spending on preventive health in Australia, but the argument does not rely on comparing current spending in Australia with that in selected OECD countries. Instead, it comes from studies that have examined the cost-effectiveness of preventive health interventions. These confirm that the health of Australians would benefit both by reorganising the current suite of preventive health activities (reallocating resources within the current prevention spend) and by increasing spending in those activities assessed as most cost-effective.

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COMMENTARY

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Addressing population levels of physical activity requires investment beyond the health sector

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KEYWORDS: health behaviours, physical activity, policy

The fact that prevention is important and cost-saving to the health sector is discussed throughout this issue. This commentary focuses on the most neglected among noncommunicable disease risk factors, namely physical inactivity. It has been described as the Cinderella of risk factors, interpreted as poverty of position and resource relative to its importance.[1] Despite contributing almost as much as tobacco to attributable global deaths, and more than obesity,[2] physical activity is seldom included as a stand-alone issue by public health policy makers.

Neglect of physical activity has occurred at the policy level in Australia, not at the research level. The Global Atlas of physical activity[3] shows that the proportion of adult Australians meeting national physical activity recommendations is relatively low by international comparison (43%-44% of adults, in Australian National Health Surveys 2011-2012 and 2014-2015),[4] and yet Australia still does not have a national physical activity plan.[3] Australia ranks second internationally in terms of physical activity research productivity and output,[3] but all this research publication has not translated into sufficient policy action. One wonders whether the challenge lies with limited policy-relevant research, insurmountable policy maker challenges or both.

The under-resourcing of physical activity strategies relates to its intersectoral nature. The effector arms of creating an "active Australia" are mostly beyond health, posing challenges for defining the accountability of policy actions. Many manifestations of disease risk, such as high cholesterol or hypertension, are treated and managed in clinical settings. Tobacco control has become mainstream in public health, supported by substantial environmental regulation and legislation, resulting in major reductions in smoking prevalence.[5] Policymakers have become mesmerised with obesity prevention, into which physical activity is often subsumed as a minor, subservient strategy; this is despite the evidence that the role of physical activity is only modest in obesity prevention, but substantially greater in reducing global deaths,[2] with new and additional benefits identified for improved brain health, positive mental health, reducing injuries and maintaining functional capacities into older age.[6]

Intersectoral thinking and concomitant "health in all policies" or "policy coherence" are not new and underpin the notion that physical activity cannot be solved by actions solely from within the health sector.[7] The conceptual diagram in Figure 1 shows the interlinked sets of multisectoral systems required synergistically to increase population levels of physical activity, with only the bottom right-hand circle encompassing clinical and healthcare settings. The bottom left-hand circle focuses on strategies that may influence inactive and sedentary social norms and create more normative physically active community perceptions and demands for active living-focused policies. The circle in the top part of the figure shows the necessary cross-sectoral engagement by sport and recreation sectors in fostering whole community participation, the education sector in activating children and adolescents, urban planning and public transport to increase lifestyle incidental activity and active travel, and working at national, state and local government levels to effect population change.

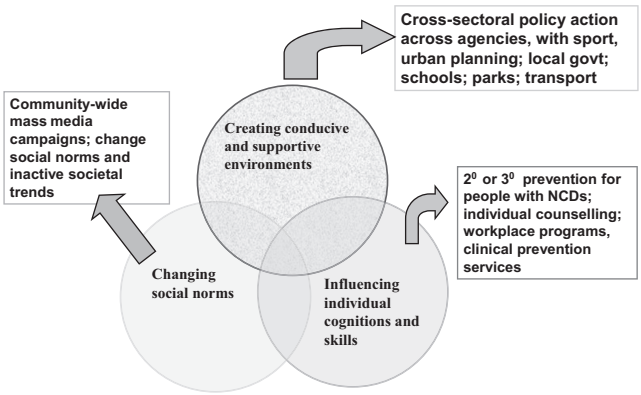

FIGURE 1 Strategic approaches to influencing population physical activity. [Colour figure can be viewed at wileyonlinelibrary.com]

1 | INCREASING INVESTMENT—CAN WE MAKE AUSTRALIA MORE PHYSICALLY ACTIVE?

This commentary is premised on assessing the value of increased prevention investment, here assumed to be $100 million of new national expenditure per year for physical activity. By analogy, the recommended expenditures for tobacco control are, according to the US Centers for Disease Control, around $15-20 per capita per year. Recommended expenditure in Australia is around half of this, with actual expenditure on tobacco control at $2.23 per capita in 2007 dollars.[8] Given three decades of consistent tobacco control efforts, it seems prudent to invest similar amounts in the initial effort to address physical inactivity. This is essential, given that promotional efforts have produced no increases in national adult physical activity participation since the 1980s[9] and that inactivity causes a similar burden of mortality to tobacco.[2] This suggests an investment of $50-100 million per year is modest for a country like Australia.

A starting point for resource allocation is the evidence base for effective population physical activity promotion. This is known as the "seven best investments for physical activity[13]," and these theme areas are shown in the left-hand shaded column of Table 1. Although any one of these actions would contribute to the solution, multiple interventions are needed to ensure sustainable long-term effects. The evidence base is summarised in the middle column of Table 1, and the right-hand column provides a personal perspective on their feasibility for scaled-up implementation to the population level.

Finally, how might we expend $100 million per year in a logical way in Australia? First, we need to acknowledge where costs exceed this available resource, or where the timescale for outcomes may be longer than a hypothetical multi-year program. Australia has signed up to the World Health Organization (WHO) global monitoring framework for noncommunicable disease prevention by 2025,[14] which posits a 10% improvement in sufficient physical activity prevalence, so a timeframe of a decade is defined for achievable changes.

Despite their popularity in public health, areas of improving urban form and enhancing roads and public transport systems require vast expenditures and should be slow to be implemented even within a decade. For example, there are more bicycle sales than car sales in Australia, and despite national cycling infrastructure expenditure of around $113 million per year rates of active travel (cycling) to work have remained unchanged (1%-2%) for two decades.[10] These urban form and transport strategies have cobenefits and are allied to city planning strategies, and to reduce traffic congestion and improve air quality. Physical activity advocates should constantly support these initiatives, as they could eventually benefit activity levels, but at substantial cost and over several decades. Modest resources should be directed to all potential and opportunistic evaluation of new built environment and active living initiatives, with clear links to scale up potential and using social

TABLE 1 Solutions to physical inactivity: the seven best investments[13]

Area of investment	Evidence base for action[15]	Perspectives on feasibility, scalability and cost issues
Schools	Good evidence for comprehensive multicomponent programs; and for school physical education/ curricular programs	"Captive and identifiable audience," but achieving wide-scale implementation problematic even when policy framework exists; cross-sectoral collaboration difficult
Urban form	Evidence for increased places to be active; urban design and land use policies in new developments	Long timescale; difficult to attribute causality; expensive retrofitting or building new road/path infrastructure that is bike/pedestrian-friendly; need targeted opportunistic evaluation of new urban and transport infrastructure, and link to media campaigns to change social norms regarding "active living" environments
Public transport systems	Potential of active travel to incidentally increase total physical activity; cobenefits of traffic reduction and air quality improvement	Despite a decade of efforts, ABS rates of walking/cycling to work remain almost unchanged at <2% in Australia;[16] efforts are completely insufficient to change population physical activity, despite recent interest and investment
Primary care	Moderate evidence from trials using selected primary care providers suggests effective, short-term physical activity effects	Problem of low generalisability of evidence derived from the doctors and health professionals who enrol in trials; efforts at scaling up not successful for physical activity advice/referral
Whole communities	Evidence for multi-agency long-term community programs; social networks	Mostly tested in individual communities; replicability, acceptability and feasibility not demonstrated at scale
Mass media campaigns	Campaigns effective in raising awareness of physical activity (and sedentary behaviour) and influence social norms regarding "active living" and active cities and spaces	Need sustained targeted campaigns using consistent themes [brands]; prevent conflicting campaigns in different jurisdictions; supportive concurrent community programs; use campaigns to influence community expectations, to persuade policymakers to cocreate more environments and infrastructure
Sport	Potential for increased community reach, especially among children/adolescents and younger adults	Good examples such as Sport Voucher subsidy schemes being piloted in several states; effects and equity [reaching inactive, low-socioeconomic groups] not yet demonstrated

marketing to normalise activity-friendly environment and public transport systems.

An area where investment is controversial is primary care. The obvious potential of GPs and others in providing lifestyle advice[11] and the potential ease of brief advice or referral are undermined by difficulties in achieving practitioner-wide reach and implementation. Over the past 20 years, brief physical activity counselling has proved more difficult to integrate into primary care consultations compared to provision of tobacco or obesity advice.[12] However, political will is strong as this area is embedded in the healthcare setting, so resources are likely to be directed here.

Hence, this is my suggested list of a spread of preventive activities for the hypothetical 10-year "Move More Australia" initiative. First, invest in school-age children through school-based provision of specialised physical education teachers to implement mandatory physical education policies across all Australian schools. Second, rigorously evaluate active living, built environment and active travel policies, to assess their effectiveness and evidence of scalability. Next, work with the sport sector to increase community-based sport and recreation participation, for example with (sport) voucher subsidies for low-income families. Fourth, invest in sequential single-branded national media campaigns to promote physical activity each year, with essential coordinated support from jurisdictions, NGOS and communities. Fifth, invest in a single coordinating organisation to manage cross-sectoral approaches to physical activity, to provide a "whole of government" imprimatur, and a clear coordinating role in standardised physical activity surveillance and implementation monitoring. Finally, a miscellaneous set of diverse smaller projects would consume the remaining resources, including pilot community-based physical activity trials (including in Aboriginal communities), supporting NGOs such as the Heart Foundation to disseminate physical activity programs to marginalised population groups, and testing scaled-up primary care efforts.

This opinion piece proposes that physical activity investment may be the best buy in preventive health[13] and that a clear and evidence-based spread of interventions could be implemented to make progress towards the endorsed WHO targets for physical activity by 2025.[14] Without such coordinated and substantial investment in prevention, Australia will remain an embarrassingly inactive nation.[9]

CONFLICT OF INTEREST

The author declares that there are no conflicts of interest in connection with this article.

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COMMENTARY

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A lifeSPANS approach: Addressing child obesity in Australia

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Compelling populations, individuals or even ourselves to act pre-emptively on the urgent and massive challenges of tomorrow is notoriously difficult.

The concept is called temporal or future discounting, and it is well documented.[1] It is the idea that we prioritise our current comfort and happiness over our future and seemingly distant safety or wellbeing. This psychological shortcoming plays out in many ways. At the micro level, we may defer until next week what we should do today—that run, drinking more water or the dentist check-up—as it may not reap benefits for months, or ever. Eventually, we may act on some of these but whether delayed, deferred or denied, it can reap serious health consequences.

At the macro level, it becomes even more problematic. When we combine this "delay what's beyond tomorrow" phenomenon with short-term political cycles in the context of systems-based, slowly evolving and largely invisible future threats, important but not yet imminent issues are not just postponed, but ignored.

Few challenges are a greater threat to the health of Australians, nor better define future discounting, than obesity. At the individual level and in our modern, obesogenic societies, weight gain has become the norm—the biological and social path of least resistance. Food systems have shifted from a focus on seasonal, fresh and relatively calorie-poor staples with minimal processing or meat, to an environment where junk foods and processed foods are ubiquitous, heavily advertised, hugely profitable and, for many communities, the only feasible "choice". Poor nutrition is now the leading risk factor for disease in our country.[2] City living has come with benefits, but along with an increasingly automated and digitalised lifestyle, has seen physical activity become something we must seek out, rather than an unavoidable component of our daily lives. Factors such as these have made individual action difficult for most of us and combined with our biology, have contributed to obesity rates more than doubling in Australia since 1980 alone.[3]

At the policy level, a dangerous, pernicious and unhealthy status quo has evolved over decades. One which sees a population increasingly affected by preventable, chronic disease. One which can only be solved through difficult decisions from politicians and the public to make the short-term, passive but unhealthy comfort harder; and the long-term promise of wellbeing more attractive. One which must see sustained public demand and political commitment for a distant goal and best scenario of nil-effect, in the face of constant, coordinated and powerful pushback, threats and careful intimidation from largely unprecedented policy counter-currents.

But opportunities do exist; levers throughout this gridlocked policy landscape that can be utilised to move the obesity agenda forward.

One of those is our kids.

We know that if we cannot prevent obesity in our children, those young Australians will likely never achieve wellbeing. We know that one in four of our children is overweight or obese and that while 5% of healthy weight kids become obese adults, up to 79% obese children will never realise a healthy weight.[4,5] We know that the school years are a time when major weight gain occurs in our lifecourse and almost no one loses weight as they age.[6] Recent evidence suggests early, simple interventions not only reduce weight and improve the health for our youngest kids, but also reduce weight in their parents.[7,8] An important network of effective implementation platforms and primed partners already exist in our schools and teachers around the nation. Finally, a large (but likely overstated) proportion of Australians may call "nanny state" at even the whiff of effective policies against obesity, but less so if those policies are aimed at our children.

With this in mind, I was recently invited to Canberra to present on how I would spend an extra $100 million each year on preventive health for the nation. This is the five-point policy plan I proposed; a lifeSPANS approach to addressing child obesity—and with it, equipping a new generation of Australians to act on tomorrow's risks, today. This is an evidence-based package to reduce the major sources of premature deaths, starting early.

1 | SCHOOLS AS PLATFORMS FOR HEALTH

- $3 million to support the revision and implementation of clear, mandatory guidelines on healthy food in school canteens
- $3 million to coordinate and support the removal of sales of sugary drinks
- $13 million to expand food and nutrition programs to remaining primary schools
- $40 million as $5000-10 000 means-tested grants for infrastructure that supports healthy eating and drinking in primary schools
- $130 million to cover 1.7 million daily school breakfasts for every child at the 6300 primary schools nationally[9,10]
- $140 million left from sugary drink tax revenue for school staffing and programs for nutrition and physical activity

Schools alone cannot solve the child obesity epidemic; however, it is unlikely that child obesity rates can be reversed without strong school-based policies to support healthy eating and physical activity. Children and adolescents consume 19%-50% of daily calories at school and spend more time there than in any other environment away from home.[11] Evidence suggests that "incentives" are unlikely to result in behaviour change but peer pressure might.[12] Therefore, learning among friends offers a unique opportunity to positively influence healthy habits.

Trials have demonstrated both the educational and health benefits of providing free school meals, including increased fruit and vegetable consumption, knowledge of a healthy diet, healthier eating at home and improved school performance. Providing meals to all children supports low-income families and works to address health inequalities and stigma.[10]

School vending machines or canteens selling sugary drinks and junk foods further fuel an obesogenic, modern food environment. Sugary drinks are the leading source of added sugar in our diet in Australia and are considered a major individual risk factor for non-communicable diseases, such as type 2 diabetes.[13] Removing unhealthy foods and drinks from schools would support children, teachers and parents and send a powerful message to communities about the health harms of these products.

Finally, it is not only about taking things away but also supporting locally driven programs and the school infrastructure to support healthier habits. Drinking fountains, play equipment and canteen hardware could all be supported through small grants aimed at further empowering schools as decisions makers and agents for healthier kids.

2 | PRICING THAT'S FAIR TO FAMILIES

- 20% increase in sugary drinks pricing with phased expansion to fast foods over three years, unlocking approximately $400 million in annual revenue to add to existing $100 million for prevention
- More than $600 million in annual health savings expected from sugary drinks price increase of 20%
- $10 million for social marketing campaigns to explain the new policy measures, and benefits to community
- Compensation package for farmers and small retailers producing and selling sugary drinks (cost unknown but likely small)
- Such legislation would also support industry to reformulate or reshape product portfolios for long-term market planning

Today's food environment sees increased availability of lower cost, processed foods high in salt, fats and added sugars.[14] People have less time to prepare meals and are influenced by aggressive food marketing. This leads to food inequality with those from low socioeconomic backgrounds at greater risk from obesity. Obesity increases the risks of cardiovascular disease, type 2 diabetes, stroke, cancer, mental health issues and premature death.[15] There are also wider societal and economic costs amounting to an estimated $8.6 billion spent in the health sector alone annually.[16]

Food prices should be adjusted in relation to nutritional content. Policy makers must shift their pricing focus to integrate the true societal cost of products associated with fiscally burdensome disease. In 2016, a WHO report highlighted that a 20% increase in retail price of sugary drinks lowers consumption as well as obesity, type 2 diabetes and tooth decay.[17] The landmark peso per litre sugar tax from Mexico highlighted the behaviour change potential such policies possess. Sales of higher priced beverages decreased substantially in subsequent years. Importantly, the most significant decreases occurred among the poorest households.[18] For Australia, a similar approach is estimated to lead to $609 million in annual health savings and raise $400 million in direct revenue.[16]

These legislative approaches should be framed as an expansion of our existing GST and would encourage industry to reformulate products, positively influencing the food environment.[13,15,17]

This is not a sin tax or ban, it is an effective policy and pricing that is fair to families. It is also backed by evidence and supported by the public.[19]

3 | ADVERTISING THAT SUPPORTS OUR KIDS

- End all junk food marketing to children, and between 6 AM and 10 PM on television
- End the use of cartoons on any food or drink packaging
- $30 million to replace junk food sponsorship of sport and arts events with healthy messaging and explanation of lifeSPANS policy approach
- Phased expansion of advertising ban over three years to all non-essential foods (GST language)

The food industry knows that marketing works, otherwise they would not spend almost $400 million annually on advertisements in

Australia alone.[20] Three of four commercial food advertisements are for unhealthy products and evidence suggests that food advertising triggers cognitive processes that influence our food choices, similar to those seen in addiction. Studies also demonstrate that food commercials including the use of cartoons influence the amount of calories that children consume and the findings are particularly pronounced in overweight children.[21]

Fast food advertising at sporting and arts events further reinforces a dangerous and confusing notion that sees the direct association between societal heroes or elite athleticism and the unhealthiest of foods.

Ending junk food advertising to children, including any use of cartoons in the advertisement of food and drinks, is an important step to support our kids.

4 | NUTRITION LABELLING THAT MAKES SENSE TO EVERYONE

- Further strengthen existing labelling approaches, including mandatory systems

Nutritional information can be confusing for parents, let alone children. Food packaging often lists nutritional information in relation to portion size meaning a product with a higher figure may simply be larger rather than less healthy. While the Health Star Rating system, implemented in 2014, has made substantive progress, it remains voluntary.[22]

Efforts should be made to strengthen the usability of existing efforts and make consistent, evidence-based and effective labelling mandatory. Such developments would also provide stronger incentives for manufacturers to reformulate products, reducing sugar, fat and salt content.

Clearer and consistent information would help create a more enabling food environment for families to make informed choices about their food.

5 | SUPPLY CHAIN SYSTEMS AS SOLUTION-CATALYSTS

- Utilise procurement and supply chains of schools and public institutions to drive demand for healthier foods
- Leverage the purchasing power of large organisations to reduce the costs of healthy foods for partner organisations and communities

Coordinated strategies are needed to support the availability of lower cost, healthy foods for all communities. Cities and large organisations such as schools and hospitals could collaborate to purchase food as collectives, thus driving demand, building market size and improving economies of scale.[23]

By leveraging collective purchasing power, institutions can catalyse the availability of sustainable and healthy foods to also support wider, positive food environment change.

6 | A $100M QUESTION

The answer to obesity will never be in telling people what to do, guilting them for making unhealthier choices in a confusing consumption landscape, or by simply banning things. We also know that education and knowledge will get us only so far. The real answers lie not even in inspiring populations to make hundreds of healthier decisions each and every day in the face of a seductively obesogenic, social milieu. If we are to drive long-term, sustained and scalable change, we must tweak the system to ensure those healthier choices become the path of least resistance—and eventually preferred. And I believe we must focus, initially, on our kids.

It is time for a lifeSPANS approach to addressing obesity in Australia.

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COMMENTARY

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How to make the first thousand days count

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1 | INTRODUCTION

I have been asked to imagine that there is a sum of $400 million over four years to inject into the Australian health and social care system and to recommend the best way to spend that money. Assuming that no opportunity cost is involved and that this money would not be taken from other budgets, my suggestion is to use the money to optimise the health (i) of children from conception until the age of two years (the first thousand days) and (ii) of women and girls of childbearing age. The money should be spent on ensuring we implement cost-effective interventions effectively. The spend should be on *how* to bring about change.

The idea of focusing on child and maternal health is not new. Recently, WHO recommend evidence-based nutrition interventions to impact on the life-course in infancy, for example[1], and the World Bank and UNICEF similarly advocate for action in the early period of life.[2,3]

The argument in this study is that to do these and other evidence-based initiatives effectively, there are a number of actions that can be taken and on which to spend the money. The prize is considerable—improved child and maternal nutrition, optimal child physical, emotional and cognitive development and better future health of the children into adulthood.

The science is clear—what happens in utero and in the first years of life exert a profound effect on the subsequent development of that child through adolescence and into adulthood.[4,5] It follows that policy and practice should aim to provide the maximum opportunity for beneficial development in the first thousand days of a child's life. The inextricable biological, social and emotional links between mothers and children means that to optimise the health of children, we also have to focus on the mothers. The challenge is how to make all that happen in practice.

2 | THE EVIDENCE OF MECHANISMS

The evidence for the mechanisms linking early life experience and subsequent health and development is considerable,[6] and guidelines on effective interventions are plentiful.[7–9] David Barker demonstrated that what happened in utero had a significant effect on adult health and life expectancy.[10–12] Subsequently, studies performed in different populations have confirmed that negative environmental influences acting during vulnerable periods of pre- and post-natal development are linked to the frequency of occurrence of a wide variety of diseases in adult life. This is known as Developmental Programming or the Developmental Origins of Health and Disease (DOHaD).

The biological processes described in the developmental programming hypothesis are themselves determined by social and environmental exposures.[13–15] Epigenetics and humanomics elucidate the importance of these exposures to the mother, the foetus and the infant[16,17] and in the case of epigenetics to the heritability across generations from grandmother to grandchild. Within the context of social and environmental exposures, the benefits of breastfeeding and infant nutrition,[18,19] the relationships between early experiences and cognitive development[20] and the development of the executive function which help to control impulsive behaviour[21] have all been commented on extensively. As Wallack and Thornberg memorably put it, the way your "zip code gets under the skin" is of fundamental importance in understanding how to prevent nonoptimal development of children and the negative consequences into adulthood.[22]

3 | CREATING THE CONDITIONS WHERE INTERVENTIONS CAN BE IMPLEMENTED EFFECTIVELY

One way of reading this evidence would be to focus exclusively on mothers and infants and especially on infant feeding and parenting

and maternal lifestyles. There are two problems with this. First, there is a danger of blaming and stigmatising mothers who do not follow the guidelines on breastfeeding, smoking, diet and the rest. Second, it fixes attention on the individual when what is actually needed is attention to the political and systems level. Changing the system is the route to create the conditions in which the already well-known evidence-based interventions can be implemented maximally and, in turn, the health of mothers and children can flourish.

The evidence base to which we can turn is considerable. Over the last several decades, better and more primary research on these issues has been performed and initiatives like the Cochrane Collaboration have synthesised and organised the evidence. Around the world, guideline developers have used this evidence to map out recommendations, manifestos and strategies (see above). Getting these recommendations into practice, however, is about cultural and normative change. In other words, how do we influence governments, professionals and vested interests to change and how do we engage scientifically with the social networks of the mothers and children?

4 | TAKING ACTION

4.1 | Appraising the current situation

The first part of the budget should be spent on the establishment of a National Independent Commission or Inquiry, supported by academic research using state of the art review and appraisal methods, to consider the following questions: (i) In whose interests do the health and other services for mothers and children function? (This is not about what services and professionals *say they do*, but what they *actually do*!) (ii) How can these services be configured to maximise the health gain of every child and every woman of childbearing age? (iii) To what degree do services link and integrate with each other? (iv) How do women and children interact with the services? (v) What are the broader patterns of social life which influence women and children in relation to those services and their methods of delivery and implementation?

The Commission must report within 12 months.

4.2 | Leadership

Changing the institutions and practices of existing organisations does not happen without leadership unencumbered by existing interests in the *status quo*. Therefore, the second portion of the budget should be spent on appointing a leadership figure who will energise others in the existing political, professional and organisational systems towards the goal of doing things better. The qualities required for such an individual will be many. They will face opposition from existing players in the system who will seek to undermine their efforts, who will argue that what they do already is the best way to do things and that all in all these ideas are old hat and/or wrong. Even if they do not say this explicitly, they will work to undermine the new initiatives in various ways. The task of the leader is not to get into open conflict—telling people they are wrong rarely changes their minds—nor is it to redesign services from top to bottom; that is seldom an effective way of bringing about change either. The task of the leader is to encourage reorientation and rethinking to facilitate doing things better. A great deal of effort will need to be expended in winning over hearts and minds of politicians, civil servants, as well as the professions. But there must be a willingness to try. And if there is heavyweight political buy in, so much the better.

4.3 | Thinking about the science differently

The leader will need to argue that we must think about the science of prevention and health improvement differently. They will need a budget to do this. As noted above, a huge amount is known biologically and psychologically about the mechanisms which impact on children's health and development, and there is a raft of recommendations about how to do this. The failure of public health across the world has been the inability to implement what we know to be effective effectively! It is as if we assume that once we know the cause of something, we know how to deal with it.[22] Classically, if we know that exposure to cigarette smoke is a risk factor for lung cancer and heart disease, then we know that we should prevent exposure to cigarette smoke. That is of course true, in the same way that maximising the health of the foetus will reduce the risk of many developmental and later problems. But that knowledge does not tell you *how* to help people to quit smoking, or how to control the power of tobacco companies or for that matter how to protect the health of mothers and children. We need to understand a different set of evidence to do this. We will need to engage with the evidence and theory derived from political science,[24] from organisational sociology,[25] psychology[26] and from complexity theory,[27] for example, to enable us to put into practice those things for which we have evidence of effectiveness. The leader will have to be an ambassador for this broader evidence.

4.4 | Seeing the problem from the ground up

As well as a reorientation of thinking about the problem, a segment of the budget should be spent on seeing the problem from the ground up. The lived experiences of children, mothers and of women more generally must be front and central. The Independent Inquiry should not only be led by a woman, but also it must take evidence from women directly. It should use a variety of techniques to understand what it feels like to be a user and a recipient of the services. Surveys, interviews and focus groups should all be deployed, and the extant scientific literatures in nursing, women's studies, medical sociology, health psychology and social care should be reviewed and synthesised to ascertain what it says about these matters. Collectively this should form a baseline from which all decisions and recommendations proceed.

4.5 | Normative and cultural change

Leadership and whatever political support is forthcoming must attend to the fact that what is required is cultural and normative change. Some of the budget should be spent on publicity campaigns through broadcast, print and social media, explaining what is going on and why. But this is only the start of the process, not the end point.[28]

One very important part of the normative change required is rethinking risk and risk factors. Clearly, there are proximal risk factors that impinge on pregnant women and in turn their foetuses, as well as on babies, infants and children. Over many decades, public health advocates and practitioners as well as policymakers have majored on those risk factors. However, those risks are embedded in the practices of everyday life. So conceptually, we need to expand our thinking beyond the proximal factors to the patterns of the everyday lives of people, which result in the exposure to the risk factors. This is a big ask and is much more difficult in practical terms than just giving advice about smoking and infant feeding.[29,30]

It will involve finding ways to break the negative links between practices and the meanings attached to them such as smoking is a good way to relieve stress; pregnant women need to eat for two; alcohol is a good way to relax; chocolate is a reward; high energy density low nutrient food is enjoyable and is not harmful. Breaking links between practices and the meanings attached to them is not impossible. The pernicious links between aspects of health-damaging social practices have been broken before.[31] In many Western countries, norms have been established which have uncoupled the links between cigarette smoking and glamour (and manliness and toughness as used to be portrayed in films and in cigarette advertising), smoking in many Western countries is very unfashionable, is invisible in retail settings, is very expensive and the expectation has been created that environments will be smoke free. Similar health-promoting norms need to be created for food and alcohol. On food and drink, portion sizes need to be reduced, advertising regulated, and the availability of the nutrient poor foodstuffs needs to be limited. On alcohol, the important negative consequences of consuming alcohol during pregnancy[32] need to be well publicised along with the longer-term risks associated with alcohol consumption.

This can only be achieved effectively by reorienting conceptually and practically from proximal risk factors and individualistic behaviour change strategies to the broader social and environmental context in which people live their lives.[33] To do this, the state—national and local—has to show leadership and to bring on board partners from all branches of government and the private and voluntary sector. At the same time, the scientific community needs to be vigilant in the face of attempts by commercial and other interests to undermine the integrity of the evidence,[34] and public health leaders and policymakers need to be ready to rebut claims made against making change on the grounds that these innovations are just more examples of political correctness or the nanny state's intrusion into people's lives.

4.6 | Service configuration

Although wholesale reorganisation is never likely to achieve much save a lot of turmoil in the system, some service reconfiguration will be necessary and working out what to do will require funding. Such reconfiguration should proceed from the questions asked by the Independent Inquiry and by the evidence provided by women themselves. It is likely that at the heart of such changes will be the provision of routine care and home visiting services, which are universally and freely available, and which will involve supporting parents so they can provide stimulating, exciting and safe environments in which a child may thrive. In the efforts at reconfiguration, it will be important that advocates for change do not lose sight of the fact that having and raising young children is a lot of hard work, is intrinsically anxiety provoking, and at times very tough. Ways to support all families unobtrusively but effectively will need to be found—the testimony of mothers will be enormously important here. The goal will be to provide physical home environments that are secure, warm, not damp, and which have physical spaces for children to play.

To accomplish such support means facilitating, supporting and providing, where necessary, the financial wherewithal so postnatally women may return to work or education if they want to, and to be able to do so in ways that do not create additional stress for them or for their children. Maintaining the balance of work and childcare is often fraught. This produces unnecessary and harmful stressors. The provision of free childcare or of making funds available so families may buy childcare, facilitating return to work and education are pre-requisites for getting this right, but require detailed coordination of service provision, welfare systems and education and employment institutions.

Making it happen, therefore, requires a detailed scientific examination of the institutions and organisations involved and the practices in which they engage. This is because in most societies, such institutions and organisations work to their own imperatives, sometimes set by the state, and the unintended consequences of organisational practices mean that, despite best intentions, services do not deliver in a way that is optimal and supportive. Certainly, services are not usually organised in ways that maximise human capabilities. Building service provision ground up from the perspective of the woman would be a much better place to start.

4.7 | State action

And, finally, the state itself, local, state and national, has important roles to play in terms of leadership and actions to take. Besides facilitating service configuration and cultural change, the state has a duty to ensure that during pregnancy (and of course beyond), women (and indeed the rest of the population) are protected from environmental and industrial toxins including carbon monoxide from second-hand tobacco smoke, traffic and heating systems. Recent evidence from metabolomics as well as long-standing data relating to industrial and environmental exposures shows unequivocally the

risks arising from such exposures.[35] In the wider landscape, equality is critical. When women leave school, their opportunities should be the same as men and across the socioeconomic gradient and across ethnic, geographical and disability boundaries. To be successful, these actions involve change in sectors well beyond health and social care—they involve industry, retail and advertising planning, environment and transport. They, too, will have to change the way that they do things.

Any legislation or reconfiguration of bureaucratic processes or of bricks and mortar are only the beginning of the process. They are the platforms from which better ways of doing things can proceed. The job is not done when the ink is dry in the statute book or when the sand and cement has set. A comfortable, warm and safe home, a secure job and income are what allow people to control their own lives and to manage their relations with the external world, as well as being the basis for protecting and nurturing children and adolescents. The state has a responsibility to foster the conditions in which this is possible.

5 | CONCLUSION

A cash injection of $400 million is sufficiently large to allow us to begin to get to grips with changing things. Much has been done, much is known, and the amount of primary research to support this has grown significantly in the last couple of decades. We should use this and do everything we can to discourage politicians and policymakers from resorting to common sense or ideological solutions to the public health problems at hand and have the courage to facilitate putting into practice the things that we know will make all the difference.

CONFLICT OF INTEREST

The author is in receipt of grant funding for public health-related research from MRC, ESRC, the Wellcome Trust and NIHR. He also has one consultancy for providing general evidence-based advice on obesity prevention to Slimming World. From 2005 to 2014, he was the Director of the Centre for Public Health at The National Institute for Health and Care Excellence.

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COMMENTARY

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$100 million to get Australia's health on track

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1 | INTRODUCTION

Chronic disease is the greatest health challenge of the 21st century. Australia lags behind comparable countries in tackling the risk factors for preventable chronic diseases such as cardiovascular diseases, certain cancers and mental illness.[1–3] There is strong evidence about what works to achieve positive change and reduce shared risk factors for these diseases across the population[4–6] and numerous opportunities for governments, community and industry to act collaboratively for the benefit of all Australians.

We were invited to prepare this commentary and participate in a Prevention 1st event in Canberra (May 2017) to discuss how an extra $100 million per year for the next four years for preventive health could be used. We propose that the implementation of 10 evidence-informed chronic disease priority policy actions, which were recently identified by the nation's leading health experts,[1] would be a strategic use of this (hypothetical) funding. This investment would augment what is already in place for preventive health and would be a sensible and timely allocation of the national budget to achieve significant health and social outcomes across the nation. The indirect costs of cardiovascular disease alone are estimated to increase by 61% by 2030, from $172 to $276 billion. The projected economic costs of chronic disease from lost productivity are expected to cost over $20 billion in 2030. Additional losses ($4.7 billion) are anticipated in lost taxation revenue from productive life years placing governments budgets under increased pressure.[7] Action must be taken.

2 | ACCOUNTABILITY AND ACTION FOR CHRONIC DISEASE PREVENTION

A national collaboration of health experts and organisations have produced targets for the year 2025 for the prevention and reduction of chronic diseases in our population, in line with the global agenda set by the World Health Organization.[8] Australia's Health Tracker,[9] a series of resources that help to monitor Australia's progress against the 2025 targets, highlights that a significant number of people and communities have biomedical and behavioural risk factors for chronic disease. The Australia's Health Tracker adult report card shows that more than a quarter of people aged 18 years and over have obesity, 32.8% of the population have high cholesterol and suicide rates have remained stubborn over the last decade, accounting for 12 in every 100 000 deaths.[9]

The Australia's Health Tracker by Area website,[10] an interactive tool that reports data by population health area, local government area, primary health network and at the state and territory level, shows healthier postcodes are typically wealthier postcodes. For example, low or no physical activity is more commonly reported by people living in regional and rural settings and/or in disadvantaged suburbs in Australian cities.[10] This data provides evidence on the need for action to prevent and better manage chronic disease in Australia, with both a population and equity focus.[11,12]

The national collaboration that contributed to the Australia's Health Tracker series has also identified 10 priority policy actions (see Figure 1)[1] that will help get Australia on track to reach the 2025 targets and significantly reduce preventable illness and disability in our population. The 10 priority policy actions are:

1. Protect children and young people from unhealthy food and beverage marketing;
2. Reduce salt content in processed foods and meals to decrease the risks of high blood pressure;
3. Implement a health levy on sugar-sweetened beverages;
4. Consistently implement volumetric tax on all alcohol products and increase the current taxation rate;

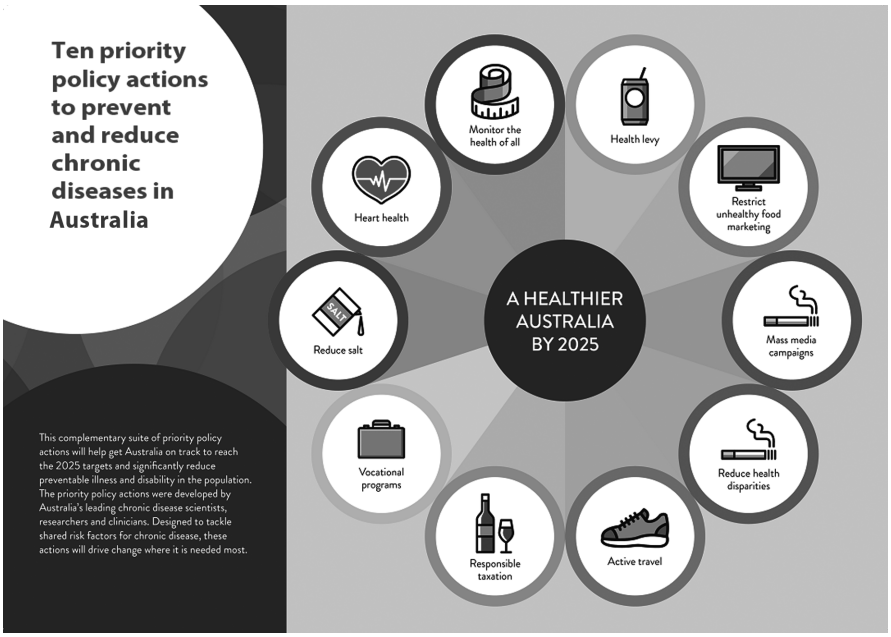

FIGURE 1 The priority policy actions named by a national collaboration of health experts.[1] [Colour figure can be viewed at wileyonlinelibrary.com]

5. Enhance media campaigns to reduce smoking;
6. Reduce health and mortality disparities in disadvantaged populations caused by smoking;
7. Scale up supported vocational programs across Australia for people with a mental illness;
8. Scale up primary care capacity in primary and secondary prevention of cardiovascular risks;
9. Invest in comprehensive national measurement and monitoring of chronic diseases and their risk factors in the population over time;
10. Invest in active travel initiatives to and from school to kick-start a national physical activity plan.

3 | SPENDING TO SAVE AUSTRALIAN LIVES

A preventive health budget of $100 million could be used to implement some of these 10 actions and serve as a down payment to prevent ill health and save lives. Two of the 10 policy actions are cost minimal: reducing salt content in foods[13,14] and changing food-marketing practices to protect children.[15] They are low-cost because they mainly require some modest private sector and government investment and strategic policy adjustment. Two of the priority policy actions will actually raise revenue: a health levy on sugar-sweetened beverages ($400 000 per year)[16] and responsible taxation of alcohol ($1.3 billion revenue per year).[17] This revenue could be directed into a substantial preventive health budget.

The policy actions that would most benefit from the $100 million per year over the next four years, therefore, are:

1. *$20 million* to continue action on smoking, a leading cause of preventable death and disease in Australia.[18] Mass media campaigns help people quit, stay quit and require ongoing investment.[19–21] The campaigns need to be tailored for low socioeconomic status audiences, people with mental illness and Aboriginal and Torres Strait Islander people to help reduce health and mortality disparities in smoking.
2. *$20 million* to assist in reaching the 2025 target of halving the employment gap[9] between people with mental illness and the general population. Vocational programs for people with moderate and severe mental illness are effective,[22] can be scaled nationally and help to reduce the financial distress commonly reported by people experiencing mental illness.
3. *$20 million* to help reduce biomedical risk factors for chronic disease through primary and secondary prevention of cardiovascular diseases.[23] This investment would support targeted national screening and treatment based on absolute risk assessment of cardiovascular disease in primary care settings for adults aged 45-74 years and from 35 years in Aboriginal and Torres Strait Islander populations.[24]
4. *$10 million* allocated towards the cost of another Australian Health Survey[25] for the year 2021. This will ensure comprehensive measurements of the health of the nation occur at least every 10 years.
5. *$30 million* could support 3.7 million school-aged children to participate in free physical activity by walking, scootering or cycling to and from school.[26] Shifting active school travel from the margins to the mainstream. Over 70% of children and 90% of young people do not meet physical activity guidelines and by 2025 the target is to reduce this by at least 10%.[9] Safe active

travel options enable children, their family and the broader community to benefit from activity-friendly roads, footpaths and urban design. This could be the first intervention to kick-start a national physical activity strategy.

4 | A HEALTHIER AUSTRALIA BY 2025

Immediate implementation of the 10 actions, that are proven to be effective and can be executed affordably, will help build a comprehensive approach to chronic disease prevention. Alone, these 10 actions are not nearly enough. Australia has existing national, state and territory policy measures aimed at reducing chronic disease incidence and prevalence and these must continue and be built upon to address the diseases that now impact one in every two Australians.[27]

Without a systematic, whole-of-population strategy aimed at prevention and early risk management, the ongoing rise in chronic disease will harm more individuals and adversely impact on health expenditure and the broader economy. Ultimately this systematic approach is what is required—although a $100 million (hypothetical) investment to strengthen and build on current preventive schemes would be welcome. The benefits of reducing the incidence and impact of these diseases are nationally significant. They extend beyond the impact on the health of individuals to our children's future, the wellbeing of the communities in which we live and the prosperity of our economy and society.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest or financial conflicts in connection with this article.

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COMMENTARY

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Effective strategies to prevent obesity

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Keywords: chronic disease, prevention

1 | HOW WOULD YOU INVEST IN PREVENTIVE HEALTH IF THERE WAS AN EXTRA $100 MILLION ANNUALLY FOR THE NEXT FOUR YEARS?

Investing to prevent obesity and improve diets makes good economic sense. Poor diet and being above a healthy weight are leading risk factors for the burden of disease in Australia, together accounting for around 16% of the preventable burden.[1] Currently, around 63% of Australian adults and 27% of children are overweight or obese, with the health system in danger of being overwhelmed in time.[2] Between 1995 and 2011/2012, the proportion of people with a BMI of 35 or higher doubled.[3]

It is well understood that the consumption of unhealthy food is driving the obesity epidemic which is, in turn, influenced by the availability, price and promotion of ultra-processed foods.[4] Unlike other chronic diseases, there are few effective, long-term treatments to manage obesity.[5] A supportive environment could potentially halt the increase in individual weight gain over the life course, in both adults and children.

The economic case for prevention is also compelling, with the annual cost of overweight and obesity estimated to be $8.6 billion, $3.8 billion in direct costs and $4.8 billion in indirect costs.[6] Addressing the impact of unhealthy weight on workforce participation was a key reason for investment by the Federal government in the now defunded National Partnership Agreement on Preventive Health.[7]

For these reasons, I would argue that all the funding allocated, and more, be dedicated to a long-term comprehensive strategy to improve diets and support Australians to maintain a healthy weight. Given the proposed timeframe of four years to spend this additional funding, substantial resources are directed towards public education campaigns and support for community-based approaches which soften the ground for policy reform and support civil society to advocate for change.

2 | NATIONAL HEALTHY WEIGHT STRATEGY

No country in the world has yet managed to turn around its rates of overweight and obesity,[8] and despite a suite of strategies identified internationally as potentially being effective, implementation of these remains patchy in Australia.[9] Many recommendations and proposals have been suggested by Australian governments to address overweight and obesity,[10] but little progress has been made because these have not being implemented in a comprehensive or sustained way to be effective.[11,12] This could be rectified with the implementation and funding of a long-term strategy for healthy weight.

2.1 | Policy approaches

A number of key policy components have been found to be effective and cost-effective in the Australian context, including restricting unhealthy food marketing to children, taxing unhealthy food and implementing interpretive front of pack nutrition labelling.[13] A levy on sugary drinks to increase the price by 20% has been estimated to raise at least $400 million annually in Australia, even after the cost of implementation is taken into account.[14] This could provide funds over and above what is proposed in this scenario for obesity prevention programs with a focus on low-income communities, an outcome which has strong support from the public.[15]

The conflicting messaging around sports sponsorship by unhealthy products and brands is undermining efforts to promote healthy diets, particularly to children. It is important to address this as part of a comprehensive approach to protect children from unhealthy food marketing. One solution to minimise the impact of restricting this practice would be to provide funds in the first instance to "buy out" these sponsorships, as was done in some Australian jurisdictions to reduce reliance on tobacco sponsorship. This would allow sports to transition to alternative sponsors over a three-year timeframe, after which the funding would wind down.

The cost of implementation and monitoring of policy elements itself would be relatively cheap, but generating political priority for these issues is a highly challenging and lengthy process.[16]

2.2 | Mass media and education outreach campaigns

The World Health Organization recommends the development of evidence-based public education campaigns around healthy diet and physical activity that are sustained and appropriately funded.[17] The effectiveness of Australian mass media campaigns to address weight and diet has been found to be improved where campaigns are longer running, use multiple channels and target specific foods.[18]

Promising results from a public education campaign with a mass media component have been found in Australia with LiveLighter. The first phase of the campaign led to population-level increases in knowledge of health harms related to weight gain.[19] The second phase focused on consumption of sugary beverages and associated risk of weight. The results from Victoria showed that the prevalence of adults drinking more than one litre of sugary drink per week reduced significantly (from 31% of adults down to 22%).[20]

2.3 | Community-based approaches

The Cochrane review of community-based obesity prevention found that multifaceted and multilevel strategies are required to prevent obesity in children.[21] A community-based approach recognises that obesity is a complex, multifactorial health issue that can be addressed by creating healthier environments for individuals to lead their daily lives. It covers settings that include workplaces, early childhood services, schools, higher education, recreational and sporting facilities. It supports the development of community-wide approaches to empower local solutions around healthy lifestyles.

However, it can be challenging to create sustained ongoing interventions that work at multiple levels.[22] These interventions can also require significant levels of funding to be sustained and effective.[23] Competition for limited financial resources and short-term funding cycles is detrimental to collaborative efforts and limit community-based prevention programs from applying a multisetting approach to obesity prevention.[24]

Given these constraints, it is recommended that funding is dedicated to support the coordination and implementation of community-based system approaches, with a particular focus on vulnerable communities, which will be supported by the funding derived from a health levy on sugary drinks.

3 | KEY PREVENTION ELEMENTS AND BUDGET

1. *$7 million per year.* Develop and implement a national healthy weight strategy, with time-critical milestones, that incorporates best-practice program, policy and regulatory approaches to prevent obesity and address unhealthy diets.
2. *$5 million per year (expected to raise funds, less administration costs, of $400 million per year).* Implement a health levy to increase the price of sugar-sweetened drinks by at least 20%, including an education campaign on the health impacts of sugary drinks. The funds raised could be dedicated to support low socioeconomic position groups with subsidies on healthy food and for community-based programs, including in Aboriginal and Torres Strait Islander communities.
3. *$6 million.* Increase funding to promote the interpretive front of pack labelling scheme, the Health Star Rating system to consumers through consumer education, fund monitoring and evaluation and if coverage is not widespread by 2019, mandate through regulation.
4. *$4 million per year.* Regulate to protect children under the age of 16 years from exposure to unhealthy food marketing, establish a compliance body and monitor and evaluate the impact of the policy.
5. *$30 million per year (interim funding to be phased down after year 3 to nil at year 4).* Restrict sponsorship of sport by junk food brands and products and establish a fund to replace unhealthy food sponsors with health messaging, such as those promoting healthy weight/diet. This transition program should wind down as new sponsors are established.
6. *$7 million per year.* Monitor policy development, implementation and outcomes ensuring accountability for commitments made. Establish an organisation that can oversee and coordinate the strategy for government, including advising on monitoring and evaluation.
7. *$5 million per year.* Set national targets and ensure regular data collection on diet and body mass index, broken down by sex, age and socioeconomic status.
8. *$30 million per year.* Fund a national education campaign, including a mass media component, together with support for local level social marketing, support services and health professional training to capitalise on and extend the reach of the program.
9. *$6 million per year.* Provide funding for a coordinating agency and support for the development of community system-based programs to deliver multicomponent interventions across a range of settings.

At the end of the four-year period, if this investment in policies and programs is followed, we should see an improvement in diets and a slowing in the increase in the proportion of adults and children who are overweight or obese. We clearly need to do more to protect the health of the population and to minimise the devastating health and economic impact of overweight and obesity. Development of a national strategy with adequate investment to make it a reality is way overdue. We will never have perfect evidence, but we need to make a start and learn by doing, as we have so successfully with tobacco control. I have proposed a multifaceted approach that would

include support for education, programs and policies—embedded in the development and implementation of a national healthy weight strategy. Australia is lagging behind in a number of areas, including with the imposition of a health levy on sugar-sweetened drinks; regulation to protect children under 16 years of age from exposure to unhealthy food marketing; a mass media national education campaign; and restrictions on sponsorship of sport by unhealthy food brands. It is also important that we are supporting communities who are motivated to make changes as well as those most impacted by diet and weight. Further, it is critical to monitor and measure change. Continuing to increase investment in the acute care system is merely putting the ambulance at the bottom of the cliff without building a fence at the top and as such is a triumph of hope over reality.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest in connection with this article.

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EDITORIAL

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Concluding comments

Like other countries, Australia has already made substantial investment in prevention, taken broadly to mean any action that "aims to support good health and eliminate or reduce those factors that contribute to poor health".[1] Our own research found close to 40 national strategies, guiding documents, commissions, committees, taskforces, agreements and significant infrastructure and program investments in prevention over the last three decades,[2] most recently a National Strategic Framework for Chronic Conditions[3] and a commitment to the WHO's Global Action Plan for the Prevention and Control of Noncommunicable Diseases.[4]

Arguably, Australia's strong tradition of investing in prevention has delivered major health gains, including improved rates of immunisation and seat belt use, restrictions on driving under the influence of alcohol and changes to sleeping positions to prevent sudden infant death.[5] Mortality from heart disease has significantly improved, declining more than 70% since the 1970s,[6] credited primarily to major prevention efforts such as smoking controls, and hypertension and hyperlipidaemia detection and treatment. Australia is also leading the world in our evidence-based, multisectoral approach to tobacco control, which has resulted in tobacco use dropping to an all-time low.[6]

But, as the costs of chronic disease continue to spiral—conservatively costing the health system $27 billion per year in treatment costs alone[6]—the question remains: Are we doing enough?

In this special edition, The Australian Prevention Partnership Centre posed that question to 10 individuals from a mix of academia, advocacy and policy, both nationally and internationally. The preparatory information for all commentators was a report by Professor Alan Shiell and Hannah Jackson,[7] which concluded that rather than a "carte blanche" increase in spending on prevention, the focus should be on cost-effectiveness—reorganising and reallocating resources within the current suite of preventive health activities and increasing spending in those activities assessed as most cost-effective.

In reading the commentaries, we were struck by the consistency of views and common ideas expressed. Not least, the following are the ten strongest themes we saw emerge from the commentaries:

1. There is no single magic bullet or pill for chronic disease. Rather, there is a need for long-term, systematic, multifaceted, multilevel, multisector and multisetting whole-of-population and whole-of-government investment in, and commitment to, prevention.
2. Obesity is a critical target for prevention, both through improving nutrition and increasing physical activity.
3. A key focus of obesity prevention should be school-aged children, with a greater emphasis on school-based policies and programs.
4. Attention should be paid to the obesogenic environments in which we live, capitalising on potential cobenefits from urban form and transport strategies to encourage active transport.
5. Legislation, regulation and fiscal measures have an important role in prevention, potentially including portion size controls, a tax on sugar-sweetened beverages, food reformulation and labelling, and restrictions on advertising and availability of unhealthy foods.
6. Targeted, national mass media campaigns with consistent messaging are cost-effective, promote positive health messages and stimulate public debate.
7. Whilst Australia has made significant gains in tobacco control, we should not become complacent and need to develop strategies for the remaining high-prevalence populations.
8. Health social determinants, equity and health literacy are key considerations, especially as many prevention interventions have a disproportionate impact on lower income groups and other vulnerable communities.
9. We need a single coordinating organisation with the mandate and leadership to manage and better integrate cross-sectoral approaches to prevention.
10. There is a need to prioritise research, research translation, evaluation and monitoring to ensure decisions for prevention investments are based on the best evidence available, and there is continuous accountability.

While artificial, asking experts to think about how they would best spend an additional $100 million per year for four years on prevention of chronic disease forces a common point of reference. The case for extra investment in prevention is easily made if not listened to. However, the case for "best-buys" will be more challenging given competing interests. We hope that this series of papers has helped progress a more rational discussion of this, demonstrating there are in fact many shared interests, which is reassuring given that most chronic conditions share the same risk factors.

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OBITUARY

WILEY Health Promotion Journal of Australia

Associate Professor Sonia Wutzke (1970-2017)

Associate Professor Sonia Wutzke was Deputy Director of The Australian Prevention Partnership Centre, one of three NHMRC partnership centres designed to bring together teams of researchers and decision-makers to increase the uptake of evidence in policy and practice and drive change towards better health outcomes.

A leading figure in public health in Australia, Sonia understood that wise decisions are needed to deliver high-quality health within available resources. She passionately believed in the power of research to contribute to change, and applied persistence and creativity to bring together research and decision-making, leaving an impressive legacy of real improvements in health and health care.

As leader of many large and successful research collaborations during her too-short career, Sonia's enormous ability for engaging people from different backgrounds and sectors meant her projects walked the talk of research coproduction.

Sonia ran the operations of the Prevention Centre since its inception in 2013. Under her stewardship, together with Director Andrew Wilson and the leadership team, the Prevention Centre grew to span 150 researchers across Australia working on 37 research projects in almost every state and territory.

In its first five years, the Centre has produced ground-breaking initiatives that will help policymakers understand where to intervene to address the risk behaviours for chronic disease, including the economic benefits of prevention, how the built environment supports better health choices, and what the effects of government programs will be into the future.

Most recently, the Prevention Centre secured an additional $10 million in funding in one of the first disbursements of the Medical Research Future Fund—testament to the trust held in the Centre at the highest levels of government.

The Centre is based at the Sax Institute, where Sonia was also Head of Analysis and Evaluation and a much-valued member of the Executive Team. At the Sax, Sonia had previously played a leading role in building two of Australia's most significant research collaborations, the 45 and Up Study and SEARCH, both of which are ongoing research platforms that will benefit the health of Australians long into the future.

Sonia will be keenly missed by hundreds of colleagues whose lives she touched across governments, universities and public health organisations.

