

Good things take time—and come in little parcels

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Her work with Indigenous communities in central and northern Australia aimed to understand the causes and consequences of rapid changes in living conditions and nutrition on health status, and how to intervene to improve health outcomes. As a medical epidemiologist and public health physician in north Queensland from 1995 to 2004, she built capacity in community-level health information systems for rural Indigenous services. She also initiated the Chronic Disease Strategy and enhanced primary care programs adopted by Queensland Health in 2002.

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I want to talk about what we need to do and why it seems to take so long. John Menadue has just referred to the enormity of the health sector, the complexity of it, and the inertia contained in it, and I wouldn't disagree with any of that.

I want to introduce far too many slides so I'll bang through the middle ones. But, primarily, in Australia now, we're facing a worsening misallocation in healthcare and health generally. We are ignoring the determinants of health, which I argue are geographic, generational, sectoral, and disciplinary. I'm sure I don't need to give you any more data about the rural-urban health divide, but I am offended by the way we're poisoning our old folks. We're giving them end of life care which is enormously, outrageously expensive but of no benefit to them, which is very disheartening for families and clinicians. It's a situation nobody would want, but we arrive there because of a lack of determination by, I would say, citizens' juries about how we need to deal with end of life care with dignity.

I want to talk about how we're actually misallocating worse than we used to because of the vested interests John has just referred to, particularly big pharmaceutical companies, and how that's leading to the dumbing down of medicine. I don't particularly want to pick on the medical profession but, as it is the main vested interest leading to some of these problems, I will. I don't need to tell you either how we're getting older, and I agree with John that the ageing of the population is not, in itself, contributing to the massive explosion in healthcare costs. It's given as a reason because we're blindly following the evidence generation that leads us to, in the first instance, just prescribe more drugs for what really amounts to problems which can be dealt with much more simply and cheaply if we had citizens' juries deciding them.

I want to go back a bit to the '80s because listening to some of the presentations yesterday and this group today reminds me of my CARPA days which, in many ways, were my road to Damascus, I suppose, from being a primary clinician, never really going away from that, but understanding that, if we are going to deal with these big-picture problems that are giving this tsunami of chronic disease, then we need to have a big picture as well. There was a seminal paper public in the New England Journal of Medicine in 1980 which basically optimistically predicted that we'd reach this kind of Nirvana by the end of the 20th century whereby we'd all live to be fairly close to 100, in perfect health, and then have a beautiful death and beautiful decline. It created a lot of excitement and it led to the catchphrase "the compression of morbidity" and we got a bit excited about that and epidemiologists started trying to measure it.

I hope you can read the dark corner of this slide. The bad news came about 10 years later when the explosion of the obesity epidemic, first starting in the US and Australia and the UK and Europe, but now a global

phenomenon, started to impact on the health of young people. And so we've got, literally, a bulge going through the demographic pyramid. So these quotes by US policy makers I think can probably be pretty true here to. This is the trajectory. It's not affecting everybody equally, and younger people are accelerating their weight gain more than older people, and that's led to other pretty scary catchphrases like "we may be the first generation to outlive our children", etcetera. I think that's a little bit alarmist and a little bit defeatist, because there are things that we can do, but we have to acknowledge who the real culprits here are.

So let me go back over the last 20 years. We started fairly optimistically because, certainly in the '80s with the widespread introduction of vaccination for early childhood illnesses, when I was practising in Central Australia in the mid-'80s, kids and adults were dying of haemophilus influenza disease. When the vaccine was introduced, there was a big research project that Menzies started to evaluate the effectiveness of the vaccination but, actually, there was nothing to evaluate because almost universally after the introduction of that vaccine there were no more cases. It was an open and shut case.

We tend to see the decline in cardiovascular mortality as the triumph of modern medicine but, actually, it's far from that. More than half of the decline is not due to medical rescue. It's due to tobacco control legislation, it's due to better food, and the reduction in risk factors in the community. And I'll show you some data to support that soon. It appears that we do have longer life, but that may be bought at the expense of longer life with disability, and particularly induced by the chronic diseases associated with overweight and physical inactivity and bad food.

This slide deals with the contribution of cardiovascular disease to the overall increase in survival in Australia, and you can see that, really, that has been driving the life expectancy increase more than any other single cause. Now, at the same time, we've had a huge increase in people rescued with their first infarct. When I was a young intern, we had these coronary care units where, basically, people were put to be watched, and the survival rate was still pretty low in those. Now it's door to needle time, it's cath labs, and it's angioplasty or stenting. So we've got this huge change in the procedural interventions for people with their first or second infarct.

Now, what that means is that we have an increased prevalence of survivors of their first infarct and those people, particularly the people in their 70s and 80s, go on to have usually a second event followed by a long course of congestive cardiac failure. And so, where we've solved one epidemic of fatality from the first and the second infarct, we've now transitioned into a second epidemic of congestive cardiac failure. This is some data from the Netherlands, but it looks pretty similar to here. It's looking at the difference in a 10-year period between the introduction of medical rescue in terms of procedural angioplasty for people with acute coronary syndromes and the survival after those.

Similarly, we've had a huge rise in the community use of lipid lowering drugs, and every time there's a new trial that comes out, usually done in the States sponsored by the big pharmaceutical companies, guess what—the threshold for the benefit gets lower in terms of total cholesterol. So, eventually, we will have more than half the adult population in Australia eligible to receive some kind of statin therapy, and there will be someone running around with a clipboard asking why don't we have all of us on there.

This is a paper that was published in the BMJ in 2004 and it was asking the question—if now there's so many of us on statin drugs, what is the contribution of that to any reduction, if any, in first presentation with acute myocardial infarct? And so we've got the statin use on the bottom here coming up, predictably—actually, interestingly, not as high as it has in Australia—and, in the same area, only a very mild dip in incidence. So what's going on? The next year a very interesting paper using a thing called impact methodology—it's quite a sophisticated but robust epidemiological technique—which was trying to ask that question: what are the contributions of the healthcare sector, that is drugs, stenting, etcetera—things you get at the hospital door and off the GP's script—to the reduction in cardiovascular mortality compared to the secular trends in the community? And it turns out that half or less of that reduction, in the case of blood pressure reduction—it's actually only 2000 compared to nearly 6000 so, you know, three to one, were due to actual medical treatment of hypertension; even more for tobacco smoking—that's the most spectacular reduction. And so I think as clinicians it might give us a little bit of pause, and particularly as cardiologists it might give us a little bit of pause, on the question of how much we can actually claim to contribute to the improved health and longevity of the population.

Now, I apologise for the colour in this slide, but it's illustrating the same thing, and that is the decline in coronary heart disease in England and Wales—you can see the enormous contribution that reduction in tobacco has made in the general population without pre-existing heart disease versus the relatively small number of people who quit as a result of their first event. And the same goes for the other contributions. And this is the trend in Australia—a very similar kind of pattern.

And so it illustrates what Geoffrey Rose has said; he is one of the late 20th century heroes of epidemiology, and his big idea was that you'll have a much greater impact on the total health of the population if you can get small reductions in risk factors in a large number of people, rather than concentrating on finding a small number of people with very high levels of risk factors and managing them. And the corollary of that in Australia is we need to be doing more in the community to shift the curve towards the healthy side, generally to the left, than to the expensively screening and managing people with high risk conditions.

I'll skip that. This is some old data now. It's just showing the quite scary rise in overweight and obesity in Australian children with the last two surveys that were done. The more recent one is nearly two years ago and just being published now, and it shows a slight levelling off from this really scary increase that we're seeing here. Nevertheless, the biggest increases in obesity and obesity-related conditions, including the incidence of diabetes, are occurring in young people, and they're all of our future.

If you're a kid and you're overweight, life is actually pretty grim and I think you can look forward to some pretty intense and unhappy interactions with the healthcare system as well as probably not having a very good quality of life generally. We're already starting to see that tipping point. Paul Zimmet predicted it in 1996 and we're starting to see it, not in terms of cardiovascular mortality because the contribution of medical rescue really distorts the picture, but we can capture it in the incidents of new risk factors and first coronary events.

Just going back to the big picture—an international comparison: what is the biggest contribution to the difference globally in the incidence of coronary heart disease between countries? Guess what: it's a function of saturated fat intake. And that's only really an indication of the quality of the diet generally. There are some new studies looking at the health impact of high sugar drinks and high sugar foods which show that they have at least as poisonous effect as a high saturated fat diet.

So I want to quote this study which was done by Monash University in 2006 and commissioned by the Commonwealth Department of Health. There's a lot of slides in it and so I'll bang through them pretty quickly. But this was a very impressive study which, to my knowledge, never got published. Much of this work has been reproduced using a slightly different methodology from Theo Vos's group in UQ with the assessment of prevention methodology using the disability-adjusted life years instead of QALYs here. But I think John has given us a call to arms to get more people involved other than the vested interests and the providers in making these decisions, and I say where are the health economists? We need to see them. They've been marginalised forever due to this rather superficial and, in many ways, silly debate dominated by vested interests.

So they were given a job to look at what will give us the best bang for the buck in terms of prevention, both at community level and in primary health care, and so they looked across four domains, and they had a panel of experts assessing the quality of the evidence. This was the methodology. The hatch keys that you'll see in the tables that I'm going to show you represent the quality of the evidence, and you'll see, if you get four hatches, it's a great study; if you get one, it's a pretty poor study. And you'll see that the quality of the evidence is pretty much coming from a lot of not-so-great studies.

So let's look at the multi-risk factor for adults. You can see the things that you'll be familiar with—Stanford Five Cities study, GutBusters—or some of them you will be familiar with—there were some workplace interventions. And in the early 2000s the NHS sponsored a lot of primary healthcare based research looking at what kinds of models could be most efficient and effective in managing chronic disease and reducing risk factors. The children's ones are not much better in terms of the quality of the evidence. Physical activity, not great—there's only one with three stars here; we haven't seen any four stars yet.

There's a lot around nutrition, this one particularly, the Lyon Mediterranean Diet study, which showed that you can get an enormous reduction in the incidence of secondary events for people that have had their first infarct with adherence to a simple nutritious diet without the need for the big bag of pills that you get when you come out of hospital. Again, smoking. So the primary outcome measures were all measured in QALYs and

dollar per QALYs and, generally, at the time this study was done, the Pharmaceutical Benefits Advisory Committee was recommending that the PBS lists all new drug applications which had the threshold of around \$50,000 per quality-adjusted life year saved.

So what's the good bang for the buck? The amount here is the dollars per QALY. Remember, the PBS, that is us taxpayers, will pay for a drug that automatically, if it's \$50,000 or less—how about this—\$340. How many times have you seen that implemented in Australia? How many times have you even heard of it in the evidence? Lifestyle for persons with IGP, there's now four very large robust randomised trials that show that this not only works for the life of the trial but the effects go on well after the five years of all these trials in the people that were subject to relatively simple nutrition and physical activity change—\$1900 per QALY saved.

Brief intervention for alcohol—and again we're getting into the mid-value ones but we're still far less than \$50,000. And this is a lot of mostly primary healthcare based activities. But can GPs do this? I don't know that they get a lot of training for that. Some pretty cost effective things but with weaker evidence, particularly some of these things you'll recognise—GutBusters, and two fruit and five veg from VicHealth. And some of the things that were implemented here are hugely valuable. Surprisingly for, I guess, the industry that advocates school-based obesity reduction and prevention campaigns, it's not looking so good. Generally, the effectiveness is fairly low and the cost is quite high.

So what happens when you're applying for a drug listing? So this is pretty much what happens. Anything that's around \$40,000 or \$50,000 will get automatically listed by PBS. So I just want to talk about how we spend our money on health. This is from the 2008 AIHW report. The bottom line then was \$78 billion nationally. Last year we spent over \$100 billion. So now that it's a nice round number, it's actually about \$103 billion, we can frame these percentages in those terms. And the reason I didn't update this was because QIHW hasn't published a table like this, but they claim that public health has gone up to around 2 per cent, but they still do not disentangle medical services from specialists and primary care level services. So we still can't get a very good handle on what we're spending on primary health care.

That same year, the likelihood of funding if you applied for a drug listing was 86 per cent. If you applied for a lifestyle intervention nobody wanted to know you. Same for allied health, and the others were less than 50 per cent. So we've got a system fuelled by an uncapped Pharmaceutical Benefits Scheme that's still running around 15 per cent of total health spend, and the others are very poor second cousins.

Now, what works at a population level? We already know that. We've now got two credible studies from good health economics units in Monash and now at UQ which tells us we should be investing in these things, but we don't have a mechanism to do it. We have a mechanism which is almost unstoppable for drugs and, to their credit, the Gillard Government has put a moratorium on new approvals for this year, but already big pharma and the Pharmacy Guild are screaming about that now. We've never made the comparable sort of investment for the known effectiveness in primary healthcare effectively or in community-based prevention.

So what about the profession? I'll reiterate what John was saying. I think we need a funding model that rewards quality and continuity of care with some kind of accountability for outcomes rather than the billable six minutes. You've probably all seen this graph. AIHW published it last year. This was looking at, I guess, the differential in per-capita spending across urban, rural and remote areas—and you can see that it costs a lot more to hospitalise people because of travel because, once you're in there, you're usually much more advanced, and there's a whole lot of reasons for that—and yet an underspend on Medicare and PBS. And so, while the title doesn't look too different, we've got this distortion which is in favour of hospitals rather than what we know is the much more effective primary healthcare sector. So we need to disentangle some of the unintended consequences of 30 years of health reform in this country which has brought us to this place we're at.

What's happening with doctors? It's actually pretty sad. I gave the Doctors' Reform Society a talk in 2006 called The Dumbing Down of Medicine. I don't think anything since then has changed. This was published in the MJA in 2006 and it was projecting the rise in the clinical, that is the medical, workforce in Australia, the flight from general practice, the inexorable rise to specialities, particularly procedural specialities, including hospital-based non-specialities. So what's happening is we're actually investing in all the wrong areas where the evidence tells us we should be putting the money. So I'm going to go through quickly why this is the case.

This was quite a nice study published in the BMJ in 2006 and it looked at the sources of funding for particular trials of published studies in the international literature. And, basically, what's going on here is the relative decline of government funding for research and the huge increase in industry funding. And so what kinds of things does industry fund? Well, overwhelmingly, drug trials. And so when health economists and epidemiologists and policy makers and governments say, "Where's the evidence?" that's where it is, tragically.

So this is what's happening now. We've got these decisions being made. These are just some examples: Gabapentin, very expensive; COX-2 inhibitors versus fish oil; ARBs versus thiazides. You cannot get thiazide diuretics in most pharmacies now because they're not prescribed and they're not stocked. Why? They've been shown to be at least as effective in the management of uncomplicated hypertension as the new drugs and much, much cheaper, but they're out of patent so no one can make money out of them and so no one prescribes them. So doctors are complicit in this. And so is the pharmaceutical industry, including the Guilds. And I think I've mentioned statins.

To paraphrase Rousseau, "Man was born free range but everywhere is watching television," and, really, these are the non-health sources of our current problems. When I went to South Australia in 2004, this number was put up. It's since been revised down to about 2023 and it's the year in which the South Australian government expects that every single state dollar will be spent on health. Now, I think we're poisoning the old. We're not doing them any favours and we're blaming them, and soon we'll be—well, me—soon I'll be in that cohort. We're actually spending 36 per cent, a third, of our pharmacy budget on them and this is the growth in PBS spending up to 2006. And you can see that this is concession cardholders, and this is the biggest growth area, and it's mainly in old people—not overwhelmingly, but mainly.

And it'd be okay if we were confident that these drugs were actually producing the benefits that were claimed from them, but a study I've been involved in in South Australia looking at a large cohort of over 300,000 veterans in this country shows that, in the over-75 year olds, over 25 per cent of the acute unplanned admissions to hospital are related to adverse drug events. We're prescribing too many pills for old people for conditions for which they could actually be much better served with other treatments.

And this is just actually the spend, the top 10. I've put asterisks by those names. At least most of them are either directly or indirectly related to overweight and obesity and physical inactivity and the mood disorders that go with that and the medical complications that come from that. So we're actually medicalising a problem that we can much more effectively deal with with legislation and regulation and community-level activity.

What to do? I support John: a significant role extension for non-doctors, including nurse practitioners working with pharmacists as, I guess, a community storefront; new funding models; large investment in community-level obesity prevention trials, including urban and suburban redesign; and we need a fund for it. We've got uncapped money to pay doctors for the billable six and 10 minutes; we've got uncapped money to pay doctors and others now to prescribe drugs which are actually hurting a lot of our people. So let's get real and match that with things that we know work. How will it make us smarter? Well, teamwork is good for doctors too. And I thank you very much.

