
Healthcare – why quality matters

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Michael Brennan, Chair

In 1959, the US Postal Service and US Navy combined to showcase a technological marvel. They fired a missile containing 3,000 letters from a Navy submarine in international waters, which duly arrived in Mayport, Florida 22 minutes later. The letters were taken to Jacksonville and then sent on to their ultimate recipients (because it was a stunt, the letters were mainly postcards addressed to then President Dwight Eisenhower).

The event prompted then US Postmaster General Arthur Summerfield to make a bold prediction. He is quoted as saying:

“before man reaches the moon, mail will be delivered within hours from New York to California, to Britain, to India or Australia by guided missiles. We stand on the threshold of rocket mail.”¹

Sixty years on we can see he was wrong, but sort of right – we now deliver mail in seconds to and from all those places – even Australia – albeit without the help of guided missiles.

We live in an uncertain world, but have an uneasy relationship with uncertainty. We love a good prediction – and we’ve always been drawn to those who predict – the seers, augurs and fairground fortune tellers. And, as a last resort, the economists.

The story about rocket mail tells us something about one way we tend to get our predictions wrong. Namely that we tend to predict future trends by a linear extrapolation of a past trend, but on a single dimension, while we hold everything else constant.

In the 1950s, the technology of transport was rapidly accelerating, and had for 100 years. The delivery of letters had moved from horses to trains, ships, motor vehicles and then aircraft, and rockets seemed like the logical next step.

What we didn’t foresee in the 1950s was that the real story wasn’t about the missile. It was about the letters. We were so enamoured by the continued increase in speeds that they would eventually hit physical limits, while innovations in information would ultimately see the relative decline of the letter, via a whole new direction of positive and far reaching change.

That we have trouble foreseeing the future isn’t a fatal problem. One thing the current pandemic reminds us is that risk management is more than a predictive science. It is not just the quality of our crystal ball, which after all is often pretty opaque – it’s mostly about

¹ <https://www.saturdayeveningpost.com/2019/06/failure-to-launch-when-the-u-s-tried-missile-mail>

how well we respond and adapt to unexpected changes when they occur. Positive or negative. That is true for individuals, firms and entire systems.

What can this story tell us about health? There have been two big trends in health in the developed world: rising spending as a share of GDP, and the long and consistent rise in life expectancy over the last century and more.

The second slide in my pack shows the rise in spending per capita for selected countries including Australia, and the rise in life expectancy that it has implicitly purchased. It seems a reasonable return – perhaps a windfall gain – on our health investment, now a bit over 9 per cent of GDP.

And my third slide shows that Australia achieves a high life expectancy for our health spend. Few countries achieve higher life expectancy with a lower spend as a share of GDP. And there are plenty that achieve the opposite – more spending for shorter lives. The United States is the outlier here.

The rise in life expectancy is indeed a remarkable story. Here is the headline fact: In 1886 – not that long ago in the sweep of human history – life expectancy at birth for an Australian male was 47 years. In 2016 it was 81. So, a 33 year increase in life expectancy over 130 years. By any measure, that must be regarded as a stunning transformation – a 70 per cent increase in lifespan per Australian.

So what might be extrapolate from this? Could we see something similar over the next 130 years? Will the bargain continue as before: with even longer lives in return for a consistently rising health spend as a share of Australians' incomes?

Of course, we don't know. But it's possible that, like mail by rocket, we shouldn't just assume that our future health spend will be primarily about purchasing longer lives; or at least not at the same price per year of increased life expectancy that we have seen in the past. Part of the reason the future might not look like the past becomes evident when we look at the big drivers of the rise in life expectancy since 1886.

By far the biggest influence has been the fall in infant mortality, and deaths in childbirth. My fourth slide has charts showing age-specific mortality rates since 1886. You can see that the biggest falls have been at birth, where the mortality rate is just 2.6 per cent of what it was in 1886. There are similar falls in mortality for women aged 20 and 30, most likely the effect of reduced deaths in childbirth.

As an aside, you can see the rise in mortality for 20 year old males during the 1960s, peaking in 1973 and then falling. This period coincides with the rise and then spectacular fall in the road toll.

Of course, the point is that a fall in infant mortality has a huge impact on average life expectancy, as babies then go on to live much longer lives. But it's hard to replicate, because once infant mortality has been reduced to very low levels, it's hard to get further increases in overall average life expectancy from this source.

The fifth slide underscores this remarkable trend: In 1886, believe it or not, the annual mortality rate of a 65 year old man was less half that of a baby, while by 2017, it was nearly 200% higher.

My sixth slide shows the rise in life expectancy at different ages since 1886. Again, you see the big rise in life expectancy at birth, pretty significant rises in life expectancy at age 20. What is interesting is how little life expectancy changed for 50, 60 or 80 year olds over this period between 1886 and about 1970. Of course, there were many more people living to these ages in 1970 compared with 1886.

But the fact still remains that the life expectancy of (those rare) 80 year olds in 1886 was 85 – another 5 years; and it was no more in 1970. I find that a fascinating fact: for all our medical advancement over that 90 year period, we hadn't worked out how to keep an octogenarian alive for much longer. From 1970, we saw incremental rises in life expectancy at older ages – still noticeably faster for the 50 and 60 year olds than for those aged 80.

Looking at causes of death tells us something about these trends. The seventh slide shows the composition of deaths broken down by some broad categories of cause. You can see the big fall in infectious diseases in the first half of the 20th century. You can also see that deaths from circulatory disease (e.g. heart attack) peaked in the late 1960s at around 55 per cent of deaths. Today it is more like a quarter.

This shows the impact of a blockbuster innovation like statins – that is, the role played by big pharmaceutical breakthroughs. And this coincides with the slight but steady rise in life expectancy at middle and older ages since the early 1970s.

The sad fact about this chart is, of course, that it has to add up to 100 per cent. A fall in one source of death must mean a rise in another cause, like cancer. We can only speculate about what might drive another big shift in this chart in the future.

Noting that even if we don't find cures for many things, treatments can still prolong lives, perhaps materially. But my point is that a quick look at the drivers of past increases in life expectancy suggests that we can't assume that the future trajectory will look the same as it did in the past. We can't just do a linear extrapolation. There's a vigorous debate about the limits to human life, but in a society with already high life expectancy, it may be that the most important benefits from a better healthcare system lie elsewhere.

That is, we have to be open to the possibility that future gains in health outcomes might come in a different form than living longer. One candidate – perhaps the most obvious candidate – is quality. Because arguably it's not just total years of life that matters, but also the total years of life lived in good health. Quality as well as quantity.

At the moment, Australia ranks relatively high for the number of years lived in in poor health (my eighth slide). That is a function of high overall life expectancy, but a rising burden of chronic disease.

In fact, if you look at the share of life lived in good health, Australia ranks 2nd worst in the OECD, part of an Anglo-Saxon club with the US, New Zealand and the UK. (Illustrated by my ninth slide.) This is bad news, but with a silver lining.

When you are a long way from the frontier (or best practice), you arguably have more scope to make rapid gains. (By contrast, Australia is much closer to the frontier when it comes to overall life expectancy, so the scope for quick wins there might be less.)

Some figures from our recently released report on mental health illustrate this point.

We estimated the total detriment to the Australian community from mental ill-health at up to \$220 billion a year. Around \$70 billion of this figure is economic impact, in that it comprises things like government expenditure and lower participation and productivity. The remaining \$150 billion is the cost to individuals from living with mental health or – tragically – dying prematurely.

These estimates are, by their nature, imprecise. But the basis for our calculation is the epidemiological concept of a disability adjusted life year.

In short, we estimate that Australians lose around 710,000 years of healthy life due to mental illness. Around 20 per cent of that figure is due to years of life lost – premature death due to suicide, which is unquestionably a tragedy. But note that 80 per cent of the impact is borne in diminished quality of life for those living for many years with a mental illness.

Our contention is that there are huge gains: certainly in preventing suicide, but also in improving the quality of life for those who spend many years dealing with the burden of mental ill health.

For the most part, that isn't about finding a 'cure', although our research suggests many people can improve their underlying mental health over time with the right treatment and services at the right time.

Similar things could be said of chronic disease, where a better service system might improve people's management of their condition, prevent hospitalisations and help people to live fuller lives.

With this in mind, the Commission has commenced a project on behalf of state governments looking at preventative, integrated health programs across Australian states and territories; programs that aim to connect up parts of the system, particularly in relation to chronic disease management.

We also devoted considerable attention to this topic in our *Shifting the Dial* report in 2017.

You are all familiar with the problems:

- The rise of preventable chronic diseases associated with factors like diet and exercise – noting for example that Australia has now become one of the most obese countries in the OECD.
- A system dominated by two volume based behemoths: the fee for service MBS and the activity based acute system, both of which have driven considerable efficiency on one dimension (throughput) but arguably don't provide enough incentive to keep people well ... something we will no doubt hear more about from **Danielle Romanes**, **Paul Gross** and **James Downie**.
- There is the lack of integration between providers, and limited focus on the patient as the centre of the system. For example, the *idea* of patient reported outcome and experience measures is well accepted, but their use is limited, especially outside the hospital system ... so it's great that we have **Professor Ellen Nolte** presenting this afternoon.

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- A lack of health literacy on the part of patients, which means they often cannot be joint managers of their conditions.
 - Lots of data but very little data integration – something **Sonja Read** will address tomorrow.
 - A large share of GPs don't even know when one of their patients has been to hospital.
 - There are overlapping responsibilities between tiers of government (with some gaps), and a fairly limited role for private health insurers – and I look forward to **Shaun Gath's** presentation later today.
 - We seem to have problems with disseminating good practice – as seen through significant clinical variation across practitioners and hospitals.
 - A passive system – one that waits for patients to present to it once a problem emerges (or maybe some considerable time after the fact).

Our mental health inquiry found all these things specifically in the mental health system and a few more as well, including the lack of a coherent way in to the system.

I would add another weakness of the general health system, which is its selective approach to innovation: specifically, the incredible innovation in areas like pharmaceuticals, equipment or diagnostic techniques, combined with glacial change when it comes to business practices and the consumer interface. Rohan Mead from Australian Unity once described this as the distinction between molecular innovation (leading edge) and business innovation (complete laggards).

As I have noted before, it is interesting that a GP can refer a patient to have several high tech pathology tests, and they send the referral and receive the results by fax. You could make a similar observation about the rather quaint concept of a waiting room – not something you find in very many service industries today.

All these weaknesses have impacts here and now. Addressing them is not simple. It is a painstaking process consisting of lots of small steps by individuals across all parts of the system. But they can add up to very real and foreseeable benefits to users of the health system.

In mental health alone, our assessment was that implementation of what we identified as priority reforms (by no means all of our recommendations) could yield benefits worth an estimated \$18 billion a year. Very little of this was in the form of increased GDP. It was mostly improved quality of life for those suffering mental illness.

But there is a broader point, which brings me back to where I started. We don't know what the future will hold – in health or in anything else. Precise prediction is hard. But we can overcome that to some extent if we have systems which are resilient in the face of change; including being adaptable enough to meet opportunities when they arise. If future gains in health come from further technological breakthroughs, we can have some confidence that our health system can adopt and diffuse those gains quite quickly.

We have a robust process to list drugs on the PBS and to roll out subsidised vaccines. Hospitals have a track record of investing in new equipment. Granted we have to make sure the incentives for innovation are strong: via regulatory approvals, pricing policy and getting the balance right on IP protections.

But what if the next big wave is something else instead, like quality? That is, *increasing years of healthy life* through things like prevention, early identification, chronic disease management and better mental health? Is our system well structured, well positioned to deliver a revolution in person centred quality, as it did with infant mortality, statins, smoking or the road toll?

In fairness, that is an exacting standard, but I suspect most of us have our doubts. For all the successes of our health system, there is significant scope for improvement. Very little of that improvement will come in the form of a single big bang change, like the big bang of a missile delivering the mail.

And just as we need funding systems that support technology, we need funding systems that support the proper allocation of resources to living healthier lives. That inevitably means reconceiving how to address the funding rigidities between primary and hospital care, and to recognise that current funding systems create disincentives for preventative health.

When you look at our current starting point, it is easy to be discouraged. Our fee for service primary care and acute ABF systems are well entrenched; there are plenty of vested interests; lots of fragmentation; and there's small matter of Commonwealth-State responsibilities.

Plus there is plenty that is good about our system – it does promote some efficiency, and for the most part good access.

So there is much that we want to preserve; all of which makes the task of reform that much more complex.

But we shouldn't be deterred. There are a lot of good reform directions already underway; and lots of heroic good practice on the ground despite the disincentives inherent in our funding systems. And when I look at the line-up of speakers for the next two days, I am confident at least we have a pretty good idea of the next steps.