Prevention Pays: The Economic Value of Adult Vaccination

Assessing the impact and economic return of vaccine and medicines investment

MAY 2025

At a Glance

In New Zealand, expenditure in medicines and vaccines is undervalued relative to alternative public sector investments for two reasons:

- the value of life figure used for health investments, including Pharmac, is lower than what is used by other government agencies;
- and the broader economic and health sector impacts are often overlooked.

This report considers the true impact of investment in vaccines to the person, to the economy and to the wider health system, and estimates the economic returns of funding an adult vaccination programme in New Zealand. If the same comprehensive approach used for childhood vaccinations is applied to an older adult vaccination programme, the impact on public health and the healthcare system would be significant.

A publicly funded vaccination programme in New Zealand for everyone aged 65 and over is estimated to:

Reduce the pressure on our health system

A publicly funded vaccination programme for people aged 65 and older targeting shingles, influenza, and respiratory syncytial virus (RSV) would keep people healthier for longer and reduce pressure on New Zealand's healthcare system by decreasing the number of preventable illnesses that require medical intervention.

Over four years, 8,253 hospitalisations, 137,878 GP visits, and 2,468 emergency department presentations could be prevented. Reducing demand for acute care through a comprehensive adult vaccination programme allows critical healthcare resources to be allocated toward managing chronic diseases, ensuring improved access to healthcare for all patients—particularly during winter months when hospital capacity is typically stretched.

Productivity gains

The economic contribution of older adults in New Zealand is significant: around 25% of adults over the age 65 are in paid employment[1], 1 in 8 are an informal carer[2], and 60% of adults aged 65-75 undertake volunteer work.[3] It is estimated that in 2022 the economic contribution of informal carers was $17.6bn or 5.4% of GDP.[2] Preventing illness among older adults therefore has far-reaching economic benefits beyond healthcare savings.

> ***Healthier individuals are more likely to remain in the workforce, contribute to caregiving, and engage in voluntary and community activities.***

With improved health outcomes, fewer workdays are lost due to illness or caregiving responsibilities and there is reduced demand on expensive social services, enhancing productivity across sectors.

Return on investment

The economic case for an older adult vaccination programme is clear. Publicly funding vaccines for everyone aged 65 and over would generate a return on investment (ROI) of 1.93–2.17, meaning each one dollar invested in boosting access to adult immunisation can deliver $1.93–$2.17 in benefits. Over four years, the total net benefit of a vaccination programme at the current 60% uptake would be $314.6 million, with total benefits reaching $1.045 billion when accounting for value of life, healthcare savings, productivity, and caregiver contributions. This investment represents one of the most cost-effective ways to strengthen New Zealand's healthcare system and economy.[4]

Forewords

Hon Steven Joyce

Former Finance Minister, Director Joyce Advisory Ltd

As far back as I can remember, the health sector in New Zealand has struggled to keep up with demand. Despite the best efforts of politicians of all stripes, every year there are stories of long hospital waiting times and people struggling to see their GP. The Covid pandemic made the problem worse with only acute patients being seen for long periods.

Every New Zealand government in recent times has significantly increased the health budget. Some have also tried various organisational reforms, but nothing seems to make a meaningful difference to the insatiable demand for healthcare.

Long health queues are a world-wide problem. As people live longer and the population ages, demand keeps increasing. People waiting for treatment and surgery often experience a lower quality of life, which also has a negative effect on our economy and society.

The myriad pressures on government budgets means we are not going to solve our healthcare problems by doing what we have always done. We need new and fresh thinking about how the demand for healthcare might be met in different ways. We are also going to have to do more to prevent illness and disease in the first place to free up hospitals and GPs to tackle trickier diseases like cancer.

This report is a fascinating insight into the sort of fresh thinking that is required.

It shows how a concerted vaccination programme protecting older adults from common preventable diseases would clearly improve the quality of life for those who participate, and take pressure off our health system, particularly during the difficult winter period each year.

It would allow older people to contribute more fully to our economy and society. And importantly it would help many of the most vulnerable older people, who are struggling with other illnesses which can be made much more serious if they contract diseases like RSV or influenza.

The report also sets a new benchmark in assessing the projected return on investment of a particular targeted health intervention. It will hopefully give policymakers genuine pause for thought about achievable initiatives that will measurably improve the health of New Zealanders.

Dr Buzz Burrell

Chair, General Practitioners Aotearoa (GPA)

As a general practitioner and Chair of General Practitioners Aotearoa, I see and hear daily the pressure our health system is under—particularly in primary care. GPs are often the first point of contact for unwell patients, and all too often we are the ones who care for them after hospitalisation. Every day we see how preventable illnesses add to human suffering, and add workload to GPs who are already overstretched. Like childhood vaccinations, adult vaccinations—such as those for shingles, influenza and RSV—can significantly ease the suffering, the resource drain, and even reduce the deaths. Disease prevention also improves access to care for all patients, and allows us to focus on other patients who desperately need our attention.

In my practice of nearly 40 years, I've seen how vaccinations can make a difference. I believe every appointment freed up by preventing illness is an opportunity to provide better care for others. This means people with complex conditions can see their family doctor in a timely manner, rather than facing unacceptably long delays or being forced to attend emergency care facilities that are also operating beyond capacity.

I therefore welcome this analysis. It clearly shows the benefits that come from proactive investment in older adult vaccination for individuals and families, and for the health system as a whole. The insights in this report add weight to what GPs across the country frequently observe: when we can prevent illness, everyone benefits. It provides strong evidence for what we in general practice already know: prevention works. And when supported by investment, it delivers better health outcomes and very significant savings for the health system.

At General Practitioners Aotearoa, our mission is to represent the interests of GPs and doctors working in general practice across Aotearoa New Zealand. We launched in 2023 to advocate for our communities, our colleagues, and the patients we serve. Investing in adult vaccination aligns with that mission. It's a practical, evidence-based step that supports our workforce, strengthens our health system, and keeps people well.

Executive Summary

If New Zealand invested in an adult vaccination programme it could help to alleviate the burden on our health system. By prioritising preventative measures, we can keep people healthier for longer, reduce the strain on healthcare services and protect vulnerable populations while also delivering strong economic benefits to strengthen New Zealand's health and economic resilience.

One of the success stories in modern medicine has been vaccination, particularly in children. Diseases like polio, smallpox, rubella, and tetanus have been largely eradicated via comprehensive vaccination programmes, which have led to a huge increase in life expectancy around the world.

There is a similar opportunity to reduce the prevalence of illness and disease in older people, with vaccinations targeting common illnesses like shingles, influenza, and RSV. This approach is now standard of care across many of the OECD (Organization for Economic Cooperation and Development) countries.

Vaccine preventable diseases are often more serious in older people, especially for those who have other issues like heart disease, diabetes or respiratory conditions. They are responsible for large numbers of GP visits, and many thousands of acute hospital admissions annually.

> ***Targeting preventable illnesses with a vaccination programme for older adults would improve the quality of life for those adults and significantly reduce pressure on New Zealand hospitals and general practitioners, particularly during the pressured winter period.***

GSK contracted Evaluate, an economic consultancy, to independently calculate the economic returns from a vaccination programme for older people in New Zealand, including increased quality of life, reduced pressures on the health system, and improved economic productivity. In New Zealand, it is uncommon for the benefits of health investments to be quantified in a rigorous cost-benefit analysis, particularly with regard to their economic impacts. The Government wants to see reform in health assessment and funding decisions to consider the wider fiscal impacts and societal benefits of investing in health.[5]

There is an annual vaccination programme for the flu for people aged 65 and over, and approximately 60% of the eligible population are vaccinated each year.[6] The shingles vaccination is currently only funded in New Zealand on a one-off basis for people when they turn 65. But the majority of older people don't qualify because they are already 66 or older. An RSV vaccine is available, but is not currently funded.

Evaluate was asked to investigate the likely impact if everyone aged 65 and older was offered a funded vaccine for flu (annually), RSV (assuming one dose every 5 years*) and shingles as a one-off (2 doses, given two-six months apart). If the uptake was equal to the current 60% uptake for the flu, more than 137,000 GP visits, over 8,000 hospital visits, and over 2,000 emergency department presentations would be saved across our health system over four years.

** Clinical evidence and guidance related to RSV vaccination is emerging. Guidelines on RSV boosters are yet to be established. Evaluate analysis considered one dose of RSV vaccine every 5 years.*

Importantly, many more older people would be able to participate fully in society. Older adults make substantial economic contribution in New Zealand, including through voluntary roles and caring for others. This contribution will become increasingly important as our population continues to age.

Evaluate has calculated that older New Zealanders would be able to contribute 3.9 million more volunteer hours and 4.8 million more carer hours over four years with a successful adult vaccination programme. For every dollar invested, New Zealand gets a $1.93–$2.17 return.

> ***If an effective public health campaign was able to lift the uptake to 80% instead of 60%, the programme would result in over 200,000 fewer GP visits, over 14,000 fewer hospitalisations, and around 3,300 fewer emergency department presentations over four years. The number of additional volunteer hours lifts to nearly 5.9 million, alongside up to 6.7 million more carer hours over four years.***

An adult vaccination programme like this would have a large positive impact on the quality of life for older people. It would also have wider economic and health system benefits, through reductions in doctor waitlists, hospital crowding, and the increased availability of older people for work. As our population ages, we are going to need our older New Zealanders to keep contributing to our economy and society, including through carer and voluntary hours.

There are few levers within the health system that could provide such a quick positive return. Simply put, if we invested in this vaccination programme for older New Zealanders quickly, it could support our overburdened hospital system this winter.

The Opportunity

A relatively small investment in an adult vaccination programme would not just yield major benefits to the health system, but to New Zealand's economy.

Treasury's recent report on longevity and fiscal pressures highlights the growing challenge of healthcare costs as our population ages, reinforcing our urgent need for cost-effective, preventative strategies to reduce future burdens.[7] Currently, those over 65 use 42% of New Zealand's public health services despite being only 16% of the population.[8]

> ***A publicly funded older adult vaccination programme represents a high-impact, immediate opportunity that delivers significant health and economic benefits.***

A publicly funded vaccination programme – targeting shingles, RSV and influenza - for those 65 and older represents a strategic opportunity to keep people well in the first place, deliver a positive return on investment, quickly reduce strain on the healthcare system and proactively manage the impacts of an aging population.

Prevention across a lifetime: rethinking our approach to older adult vaccination

Health NZ recommends vaccination for shingles, RSV and influenza for older adults, but the opportunity lies in publicly funding to ensure broader access, reduce inequity and maximise its impact.

Vaccination is one of the most effective public health measures, cutting disease burden and hospitalisations. The implementation of a comprehensive childhood vaccination programme has dramatically reduced disease burden and healthcare costs - proving that prevention is effective. New Zealand is currently underinvesting in adult vaccinations. If the same comprehensive approach used for childhood vaccinations is applied to an older adult vaccination programme, the impact on public health and the healthcare system would be significant.

> ***By expanding adult vaccination in the same way we have successfully done for children, New Zealand can reduce the burden of preventable diseases, alleviate fiscal pressures linked to aging, and strengthen the resilience of the healthcare system. A comprehensive, publicly funded vaccination programme would ensure that prevention remains at the heart of healthcare policy, delivering both economic and social benefits.***

Reducing pressure on our healthcare system: A quick win

With an aging population and increasing demand for services, prioritising prevention is now more important than ever. Investing in older adult vaccinations provides a rapid, cost-effective solution to ensure more people stay well in the first place - reducing hospital stays, emergency department presentations and visits to GP clinics, particularly during winter months when respiratory illnesses spike.

> ***By keeping people well in the first place, New Zealand can mitigate the fiscal pressures of an aging population, ensure a more sustainable healthcare system, and position the country as a leader in proactive public health policy.***

Positive return on investment

Economic analysis demonstrates that publicly funding vaccines for those 65 years and older delivers substantial financial returns. For every dollar spent, close to double is saved in healthcare costs, productivity gains, and reduced caregiving burdens. With a return on investment (ROI) of 1.9–2.17, the net economic benefit over four years is $314.6 million, with total benefits reaching $1.045 billion.

- Shingles vaccination contributes $176.1 million in net benefits.
- RSV vaccination delivers $138.5 million in economic savings.
- An additional 3.9 million volunteer hours and 4.8 million carer hours are available.

Preventative healthcare is not just about saving money—it is about ensuring a healthier, more resilient population that contributes to the economy and requires less intensive medical care as they age.

New Zealand's immunisation programme

Vaccination has saved more lives than any other innovation in modern medicine or public health intervention, after clean drinking water.[9,10] It is estimated that vaccines have prevented 154 million deaths worldwide since 1974, and childhood immunisation is responsible for a 40% decrease in infant mortality globally.[11]

Increasing uptake of the childhood immunisation schedule is a top priority of the New Zealand government. Targets have been set and resources put in place to maximise vaccine coverage, because we understand how important vaccination is to preventing disease in children. However, the burden of vaccine-preventable diseases is still high, and we are yet to prioritise and fully realise the benefits of adult vaccines, especially those for older New Zealanders.

From the age of 65 in New Zealand, adults are funded for the influenza vaccine, the Tdap vaccine (which protects against whooping cough, tetanus and diphtheria) and the Covid vaccine.[12] The shingles vaccine is only funded on a one-off basis for people when they turn 65.[†]

Significant benefits to individuals, to our health system and to the economy could be realised by investing in a comprehensive adult vaccine programme that keep older people well. Many other OECD countries have immunisation programmes that include funding for shingles vaccination for all adults over the age of 65, with Australia being a key example.[13] The United States, United Kingdom and Germany also fund an RSV vaccine.[14,15,16]

[†] *Shingles vaccine is also funded for some immune compromised people from the age of 18.*

Evaluating the impact and economic return of vaccine and medicine investment

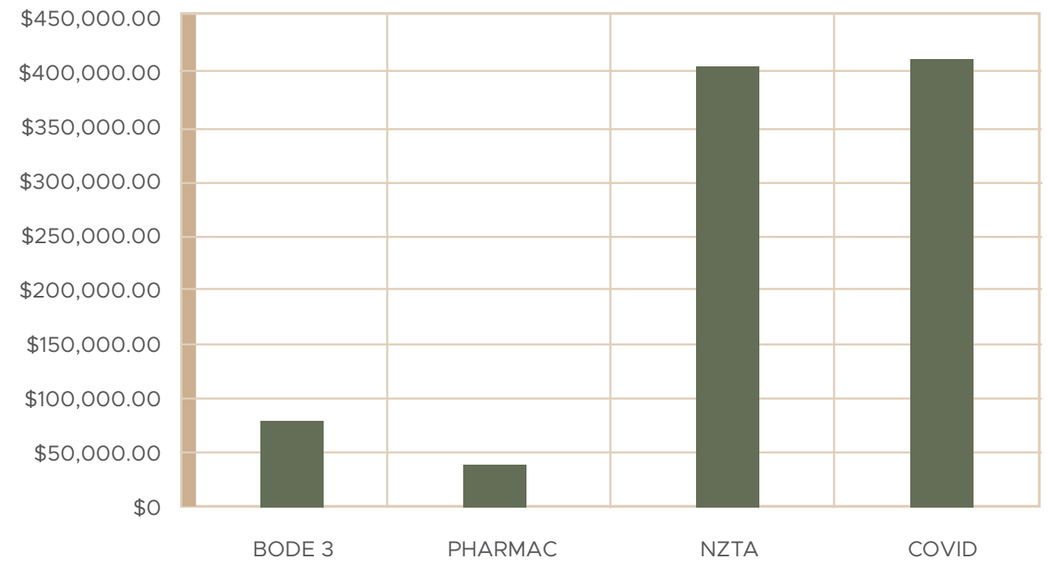
Expenditure in preventative health is commonly undervalued relative to alternative public sector investments. Compared to other budget investments such as roads, and defence, governments discount health on two fronts.

1. Governments value a year of life delivered by health expenditure at a much lower level than a year of life delivered by other investments like road safety, and
2. The assessment of health outcomes does not consider broader economic effects – which is what this study addresses.

The different values used in New Zealand for a year of life saved are illustrated:

- A $77,000 Burden of Disease (BOD) figure, used by health academics;
- The $43,000 quality-adjusted life year (QALY) figure used by Pharmac in their cost-utility analysis assessments, which is also used in this report;
- A value of statistical life year price of $407,000 for the New Zealand Transport Agency (NZTA) investment in safer infrastructure; and,
- The implied $419,000 cost per year of life saved from New Zealand's COVID intervention.[17]

The consequence of these different figures is that health investments can appear – in human terms – less efficient than, for example, repairing roads in New Zealand, by a factor of more than 9:1, making it difficult to compare the impact of investment opportunities across government. When considering the impact on people, investment assessments should be using the same value.



Expanded view of health investment

While funding for medicines and vaccines considers the benefit to the person, the impact to the economy and to health systems tends to be overlooked in New Zealand.

In this report, an expanded view of productivity was considered to capture the true economic impact, which includes paid employment, as well as informal caring and volunteering. Considering these metrics allows the economic contribution of those not in paid employment (including older adults) to be considered.

The other reason for its inclusion is scale: around 25% of adults over the age 65 are in paid employment[1], 1 in 8 New Zealanders over 65 is an informal carer, providing on average 1,560 annual care hours[2], and almost 60% of New Zealanders aged 65-75 undertake volunteer work, averaging around 335 hours per year each.[3] It is estimated that in 2022 the economic contribution of informal carers was $17.6bn or 5.4% of GDP.[2]

The direct impact to the health system was also evaluated, particularly focused on general practice, hospital stays and emergency department visits. This breakdown allows us to see exactly where vaccination could have the largest impact.

Return on investment

The data presented in this report are summarised in terms of return on investment (ROI), which is simply the ratio of total benefits to total costs. Any ROI which exceeds 1 is an efficient target for investment. As the ROI climbs, the efficiency of the investment grows. Another way of looking at this is that a higher ROI indicates a surplus to the investor, which for healthcare in New Zealand is predominantly the Government.

The public purchase price for vaccines in New Zealand was used in the calculations, including the ROI. At the public price, an investment in adult vaccines would return $1.93–$2.17 for every dollar invested. This is a conservative estimate considering the discount on vaccines and medicines achieved by Pharmac is on average 44%.[18]

ROI of vaccine investment in New Zealand

Vaccination programme		ROI using Pharmac value	ROI using NZTA value
Shingles	65+	**1.93**	5.6
RSV	65+	**1.93**	3.4
Influenza	65+	**2.17**	3.8

To illustrate the impact the valuation of a year of life has on the ROI, we compared the ROI using the Pharmac value of life figure (used in this report) with the ROI that was calculated using the New Zealand Transport Agency value of life figure.

If the same value of life was used in this report that is used for measuring transport sector interventions, then the reported ROI would be much higher, demonstrating the importance of using the same value across government sector investment assessments.

Investing in the prevention of shingles, RSV and influenza

Investment in shingles prevention

90% of adults over 50 years old have the virus that causes shingles: *anyone who has had chickenpox is at risk of developing shingles.* Approximately 1 in 3 people will develop shingles in their lifetime, with the risk significantly increasing from the age of 50.[19,20,21]

People aged 65 and older are at a very high risk of developing shingles; while most people fully recover, shingles can lead to serious complications such as persistent nerve pain (post-herpetic neuralgia), scarring, vision loss, and in rare cases, heart attack and stroke.[22,23,24]

Current scenario: From 1st April 2018 a live attenuated varicella zoster virus vaccine was funded for all adults 65 years and older, with catch-up period for those aged 66 to 80 years (until December 2021). This was replaced by a recombinant varicella zoster virus vaccine from 1st December 2022 but was only funded for those aged 65 years.

When the funding for those turning 65 was initiated many people missed out due to Covid measures, not being able to get into a GP or not being aware of the narrow window of eligibility.[25]

Health NZ recommends shingles vaccination from age 50 years, including those aged 66 years and older and people aged 18+ with increased risk due to immunocompromise.[26]

An investment to widen access to shingles vaccination for everyone aged 65 and older at a 60% uptake would have a return on investment of 1.93. It would also save significant health system resource. Over 4 years, 102,892 GP visits, 1,355 ED presentations and 2,858 hospitalisations would be avoided.

> ***The investment would contribute significant economic gains over 4 years, particularly in health volunteer and carer contributions, totalling $534 million, with the investment having a positive net economic return of $176.1 million. As the table shows, the positive impact would be realised quickly, with much of the it achieved after the first year of the programme.***

If the shingles vaccine uptake was lifted to 80%, it is estimated that over 4 years that 137,189 GP appointments, 1,806 ED visits and 3,810 hospitalisations could be avoided, with a net economic return of $234.8 million, when health, paid employment, volunteer and carer hours are included.

Shingles vaccine for those 65+ with 60% Uptake

	Initial Year	Four Years
Discounted Vaccination Cost	-$302,444,620	-$358,055,376
Discounted Health Gain	$114,441,097	$132,606,375
Discounted Productivity Gain	$48,184,832	$60,506,405
Discounted Volunteer Gain	$116,365,897	$144,173,395
Discounted Carer Gain	$163,695,876	$196,871,628
Net economic effect	**$140,243,083**	**$176,102,426**
Discounted QALY Gain	2,894	3,623
COSTS	**$302,444,620.10**	**$358,055,376.48**
BENEFITS	**$567,142,827.41**	**$689,926,752.07**
ROI		**1.93**

Fewer GP Visits	23,784	102,892
Fewer ED Presentations	312	1,355
Fewer Hospitalisations	663	2,858
Additional Volunteer Hours	390,026	1,697,605
Additional Carer Hours	472,523	2,054,722

Case Study

Dale Yeoman tells her personal story of living through shingles

At 69 years old, I considered myself fit and healthy. I swam regularly, walked most days, and had no major health concerns. In 2014, my husband and I were travelling with our caravan, enjoying a holiday with our family in Auckland before heading back to the South Island.

One morning, just before leaving Auckland, I woke up feeling unwell. I had a deep sense that something wasn't right. Having nursed my husband through shingles 30 years earlier, I recognised the signs immediately. I went straight to an after-hours medical practice, where I spoke with the GP and was given a prescription for antivirals which I started taking immediately. My husband and I decided to make our way home as quickly as possible, worried that my condition might worsen during the long journey back.

It was a long drive south. By the time we reached Wellington, the pain above my left eye had become unbearable. Keeping my eye open was painful, and I could barely tolerate light. That night was restless, and by the next morning, my symptoms had worsened. On the ferry back to the South Island, the pain across the top of my head and in my eye became severe. I feared for my eyesight and tried to manage the nerve pain with cold compresses. Medical professionals later told me that if the infection had reached the tip of my nose, my vision could have been at even greater risk.

As soon as I got home, I went straight to bed, exhausted. I booked an urgent appointment with an ophthalmologist, and when my eye was examined, it was clear that scarring had already developed on my cornea. Over the next few months, I had to see the specialist multiple times to monitor my recovery. Physically, I felt drained. The exhaustion and malaise lingered for six months. Despite my active lifestyle, recovering from shingles was unlike anything I had experienced before—it was not just the pain, but the deep fatigue and disruption to daily life.

Thankfully, I recovered without lasting vision impairment, but I still carry the retinal scarring as a reminder of the experience. Looking back, the sudden onset of shingles, the intense pain, and the months of recovery made me realise just how much this illness can impact even those in good health.

Investment in RSV prevention

Respiratory syncytial virus (RSV) is a common, highly contagious seasonal virus[27] that affects the lungs and breathing passages, causes repeated infections throughout life and is more serious in infants and older adults.[28]

RSV and influenza infection carry similar risk of hospitalisation and mortality in older adults.[29] Most people experience mild to moderate disease, but for older adults and those with co-morbidities, RSV can result in hospitalisation for severe respiratory tract infections, viral pneumonia and exacerbation of underlying comorbidities. In New Zealand, the true incidence of RSV is under-reported but infections most commonly occur during the winter months. RSV is a major contributor to health system pressure during winter, along with influenza, COVID and other infections.

Medsafe approved a RSV vaccine for older adults in April 2024. A funding submission was made to Pharmac in January 2024, but it remains unfunded.

Health NZ recommends considering one dose of RSV vaccine before the start of winter for individuals 60+, particularly for the elderly and those with multiple comorbidities.[30]

An investment to fund RSV vaccinations for people aged 65 and older at a 60% uptake would have a ROI of 1.93 and would significantly free up health services. The number of GP appointments and hospitalisations avoided would be similar to the number of reductions we see with the current influenza vaccine uptake in New Zealand.[31] Over 4 years, 34,986 GP visits, 1,113 ED presentations and 5,395 hospitalisations would be avoided, as well as contribute to large economic gains, particularly in health, volunteer and carer contributions, with a net economic return of $138.5 million.

If an effective public health campaign was able to lift the RSV vaccine uptake to 80%, it is estimated that over 4 years that 46,684 GP appointments, 1,485 ED visits and 7,194 hospitalisations could be avoided, with a net economic return of $184.7 million.

RSV Vaccine for those 65+ with 60% Uptake

	Initial Year	Four Years
Discounted Vaccination Cost	-$155,021,225	-$184,424,912
Discounted Health Gain	$82,332,208	$96,302,375
Discounted Productivity Gain	$13,304,245	$16,583,900
Discounted Volunteer Gain	$76,956,254	$96,213,353
Discounted Carer Gain	$95,054,025	$113,852,164
Net economic effect	**$112,625,507**	**$138,526,879**
Discounted QALY Gain	608	764
COSTS	**$155,021,225**	**$184,424,912**
BENEFITS	**$293,799,742**	**$355,803,976**
ROI		**1.93**

Fewer GP Visits	12,696	34,986
Fewer ED Presentations	390	1,113
Fewer Hospitalisations	1,862	5,395
Additional Volunteer Hours	836,059	2,241,805
Additional Carer Hours	989,598	2,720,919

Case Study

Sue's experience with RSV – the toll of a common illness

At 63, I led a busy and fulfilling life. I went to the gym 4 – 5 times a week, walked my lovely dog every day and helped look after my grandchildren. I'm fortunate that I can play an active role in my family and help care for my young grandchildren to support my own children who balance work and family responsibilities. Staying healthy has always been important to me as I pride myself on being reliable and present for my family.

At first I developed what I thought was a simple cold. It was just a cough and mild fatigue, but within days, I found it hard to breathe, I was exhausted and struggled to keep up with my daily routine. I didn't have a lot of energy which impacted on my ability to help with school runs.

When I didn't start feeling better, I went to my doctor and confirmed I had respiratory syncytial virus (RSV). I had heard of RSV but thought it mainly affected babies, so I'd never considered it to be a risk before. The virus left me bedridden for over a week, and for weeks afterwards I had a persistent cough and shortness of breath.

For me, the hardest part wasn't just feeling unwell - it was the disruption to my role as a support system for my family. The illness not only affected me physically but also took an emotional toll, making me feel isolated from the people I loved. I had a newborn granddaughter and one of the first times I saw her was through a glass door. My illness meant I not only missed out on lots of lovely cuddles but also being able to help my son and daughter-in-law.

Even after recovering, I noticed that my usual ability to up and go wasn't the same. The fatigue lasted longer than I expected, and everyday tasks felt more draining than before.

Reflecting on the experience, I've now realised just how serious RSV can be for older adults - not just in terms of health, but in how it affected my ability to be there for my family. I certainly never expected a respiratory virus to knock me back so hard.

Investment in influenza prevention

Influenza is a seasonal illness, with most cases occurring over the winter months in New Zealand. Most people recover within a week without requiring medical attention. However, influenza can cause severe illness or death, especially in people at high risk. In severe cases, influenza can lead to pneumonia and sepsis. Influenza can also worsen symptoms of other chronic diseases.[32,33]

Current: influenza vaccine is funded for people aged 65 and older, as well as pregnant women and people with other diseases that put them at increased risk.

Health NZ recommends one dose annually before the start of winter for all individuals from 6 months of age.[34]

The NZ government has recognised the benefit of investing in influenza vaccine and although all New Zealanders 65 and over have access to a fully funded influenza vaccine every year, only 61% opted to access it.[6] This current investment in influenza vaccine for people aged 65 and older has a positive return on investment of 2.17. The number of GP appointments avoided with influenza vaccination is significant, with over 15,000 appointments and over 2,500 hospitalisations avoided with a net economic return of $25.2 million each year.

If a public health campaign investment was made to lift influenza vaccine uptake to 80%, it is estimated that each year an additional 21,000 GP appointments, and 3,400 hospitalisations could be avoided, with a net economic return of $33.6 million.

Influenza vaccine for those 65+ with 60% Uptake

	Annual
Discounted Vaccination Cost	-$25,701,080
Discounted Health Gain	$26,052,448
Discounted Productivity Gain	$3,736,494
Discounted Volunteer Gain	$14,015,417
Discounted Carer Gain	$7,061,233
Net economic effect	**$25,164,511**
Discounted QALY Gain	113
COSTS	**$25,701,080**
BENEFITS	**$55,737,354**
ROI	**2.17**

Fewer GP Visits	15,815
Fewer ED Presentations	Not modelled
Fewer Hospitalisations	2,567
Additional Volunteer Hours	475,099
Additional Carer Hours	239,364

An improved adult vaccination programme for New Zealand

A vaccination programme for people aged 65 and older that includes shingles, RSV and influenza vaccine at the current 60% uptake rate achieved for the flu vaccine, would result in more than 137,000 fewer GP visits, in excess of 8,000 fewer hospital admissions, and nearly 2,500 fewer emergency department presentations over the next four years.

This would provide a net economic benefit of $314.6 million, and provide an additional 3.9 million volunteer hours and 4.8 million carer hours.

*Four-year cost for three vaccines for those aged 65+, with **60%** uptake**

	Shingles	RSV	Influenza	Total
Discounted Vaccination Cost	-$358,055,376	-$184,424,912	0	-$542,480,289
Discounted Health Gain	$132,606,375	$96,302,375	0	$228,908,750
Discounted Productivity Gain	$60,506,405	$16,583,900	0	$77,090,305
Discounted Volunteer Gain	$144,173,395	$96,213,353	0	$240,386,747
Discounted Carer Gain	$196,871,628	$113,852,164	0	$310,723,792
Net economic effect	**$176,102,425**	**$138,526,879**	**0**	**$314,629,306**
Discounted QALY Gain	3,623	764	0	4,387
COSTS	**$358,055,376**	**$184,424,912**	**0**	**$542,480,289**
BENEFITS	**$689,926,752**	**$355,803,976**	**0**	**$1,045,730,728**
ROI	**1.93**	**1.93**		**1.93**
Fewer GP Visits	102,892	34,986	0	137,878
Fewer ED Presentations	1,355	1,113	0	2,468
Fewer Hospitalisations	2,858	5,395	0	8,253
Additional Volunteer Hours	1,697,605	2,241,805	0	3,939,410
Additional Carer Hours	2,054,722	2,720,919	0	4,775,640

** No change reflected for flu costs and benefits as included at current uptake.*

If an effective public health campaign was able to lift the uptake to 80% instead of 60%, 204,924 fewer GP visits, 14,427 hospitalisations and 3,291 emergency department visits would be avoided over 4 years.

The net economic benefit would be $453.1 million, and an additional 5.9 million volunteer hours and 6.7 million carer hours would be available.

*Four-year cost for three vaccines for those aged 65+, with **80%** uptake (flu incremental to current uptake)*

	Shingles	RSV	Influenza	Total
Discounted Vaccination Cost	-$477,407,169	-$245,899,883	-$34,268,107	-$757,575,159
Discounted Health Gain	$176,808,500	$128,403,167	$34,736,598	$339,948,265
Discounted Productivity Gain	$80,675,207	$22,111,867	$4,981,991	$107,769,065
Discounted Volunteer Gain	$192,231,193	$128,284,470	$18,687,222	$339,202,885
Discounted Carer Gain	$262,495,504	$151,802,885	$9,414,977	$423,713,366
Net economic effect	**$234,803,235**	**$184,702,506**	**$33,552,682**	**$453,058,423**
Discounted QALY Gain	4,830	1,019	151	6,453
COSTS	**$477,407,169**	**$245,899,883**	**$34,268,107**	**$757,575,159**
BENEFITS	**$919,902,336**	**$474,405,302**	**$74,316,473**	**$1,468,624,110**
ROI	**1.93**	**1.93**	**2.17**	**1.94**
Fewer GP Visits	137,189	46,648	21,087	204,924
Fewer ED Presentations	1,806	1,485		3,291
Fewer Hospitalisations	3,810	7,194	3,423	14,427
Additional Volunteer Hours	2,263,473	2,989,074	633,465	5,886,012
Additional Carer Hours	2,739,629	3,627,892	319,152	6,686,672

Conclusion

A comprehensive vaccination programme for older adults as assessed in this report would have a large positive impact on the quality of life for our older people. Helping to prevent disease in the first place would also bring significant societal benefits in terms of improved economic productivity and increased carer and volunteer hours. As our population grows older we are going to rely on the contributions that older people make in our communities more and more.

The Programme would also have important benefits to our struggling health system, through reductions in the numbers of GP visits, hospitalisations and Emergency Department presentations.

As this report shows, investing in adult vaccination programmes would provide a quick and measurable positive response.

Getting ahead of disease is a necessary investment – for people to stay well, to support the overburdened health systems and provide real benefits to our economy and our communities.

About the report

GSK commissioned Evaluate Consulting to conduct a detailed cost-benefit analysis to consider whether increased public investment in vaccines by the New Zealand Government is an economically efficient proposition. GSK prepared this short non-promotional policy report based on the analysis.

This report assesses comparative returns on investment for the New Zealand health system across a range of vaccines and age groups.

It does this principally through a Markov chain model – a common tool in health economics – which takes a current population and simulates how lives will change in response to a particular factor. In this case, the particular factor is the introduction of public funding for selected vaccines. The model works by simulating the life paths for a large number of New Zealanders of different age and sex, and with different preceding health states.

It is a highly realistic simulation which captures a broad range of factors as follows:

- It represents the population of New Zealand for the selected age group, differentiating individuals by sex, workforce participation and any level of chronic illness or disability.
- On the cost side, the full cost of vaccines is incorporated, including the price of the vaccine itself (including future boosters); the cost of delivery by a doctor, nurse, pharmacist or other professional; and the loss of time from work or other productive activity. The cost of rare adverse events is also included here.
- When looking at savings, the effectiveness of vaccines is included given that some vaccinated people will still experience infection and the protection afforded by vaccines reduces somewhat over time.
- Savings are calculated on three fronts:
  - Direct savings within the health system to the New Zealand Government as the payer, in terms of hospital days, emergency department (ED) admissions and doctor visits avoided;
  - Broader benefits to the economy by avoiding lost productivity. This includes paid work, volunteer work, and informal care provision, such as looking after a loved one. This measure does not reflect the cost of treating those with the disease, but rather the loss from the volunteer and carer workforce in the event that volunteers and carers become ill;
  - Benefits to the patient, from increased longevity or quality of life. This is expressed in the standard measure of quality-adjusted life years (QALYs).

Costs and benefits are calculated using 3.5% discount rate per annum.

The model uses conservative estimates and is limited to first round effects and operates by simulating two different probabilistic pathways for a large number.

About GSK

GSK is a focused global biopharma company. Our purpose is to unite science, technology and talent to get ahead of disease together and positively impact the health of billions of people.

We get ahead of disease through innovative prevention and treatment, driven by our expertise in specialty medicines, vaccines, and immune system science.

GSK has a long history as a trusted health care partner in New Zealand. These roots stretch back to over a century, when a general trading company was established in Wellington and became the foundation for the Glaxo company that was formed in Bunnythorpe, Manawatu. GSK continues to have a strong local presence, with over 60 employees based in New Zealand.

In New Zealand our vaccines have been at the heart of the National Immunisation Programme from the time it began helping to protect infants, children and adults from infectious diseases. Our strong commitment to New Zealanders sees us working across the entire health sector.

More than ever, we believe that getting ahead of disease is the best investment – for patients, communities, health systems, and economies. Together, we have an opportunity to reimagine health – to not just treat disease, but to invest in keeping people well.

About Evaluate

Since 2016, Evaluate has brought fresh thinking to policy and economic questions.[35]

Alastair Furnival – Prior to co-founding Evaluate, Alastair was Chairman of a leading public affairs firm, a Vice-President at Boston-based Charles River Associates, and regional Chief Economist for a multinational food company. Alastair has been an advisor to Federal and State Governments in Australia, including as a Chief of Staff to health and ageing Ministers in the Howard and Abbott Governments.

Catherine McGovern has worked for nearly 30 years in and with governments in the UK and Australia as a consultant and advisor. She was an advisor in the Howard Government in the industry, science and resources portfolio, where she was responsible for policy development in a variety of industry sectors.

Professor David Cullen was the first Chief Economist of the Australian Department of Health and the first Chief Economist of the National Disability Insurance Scheme. He is a former President of the OECD Expert Group on the Economics of Prevention and has provided advice to the World Bank and the OECD on health economics.

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