



Office of the Prime Minister's Chief Science Advisor
Kaitohutohu Mātanga Pūtaiao Matua ki te Pirimia

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Prime Minister's Chief Science Advisor Workshop

Kaitohutohu Mātanga Pūtaiao Matua ki te Pirimia



Connecting Researchers and Policymakers

Te Whanga-nui-a-Tara | Wellington

18 September 2023

Agenda

- 1:40pm Registration
- 2:00pm Mihi whakatau
- 2:05pm Welcome and scene setting
Juliet Gerrard and Tracey McIntosh
- 2:10pm *Gary Evans*
- 2.15pm Session 1:
George Slim, Pressures facing the policy analyst trying to connect to researchers
Juliet Gerrard, Research connections to policy
- 2:45pm Session 2:
Gill Jolly, Gary Evans and Emily Parker, Hīkina Whakatutuki | Ministry of Business, Innovation & Employment, Building the science base in Aotearoa New Zealand
- 3.00pm *Break*
- 3.15pm Session 3:
Panel discussion led by CSAs with a focus on learning from case studies
- 5:00pm Session 4:
Speed dating and networking with drinks and nibbles – with thanks
to the Australasian Research Managers Society
- 6.30pm Close



Haere mai

Welcome

Scene setting,
Juliet Gerrard,
Tracey McIntosh

Who is, and isn't in the room?

VISION for the role

a trusted, accessible bridge between scientists, society and government

PRINCIPLES*

Rigorous, **Inclusive**, Transparent, Accessible

* Nature, June 2018 : Four principles to make evidence synthesis more useful for policy

Session 1

George Slim

Pressures facing the policy analyst trying to connect to researchers

Juliet Gerrard

Research connections in policy



Pressures facing the policy analyst trying to connect to researchers

George Slim
Senior Advisor

Office of Prime Minister's Chief Science Advisor,
Kaitohutohu Mātanga Pūtaiao Matua ki te Pirimia

Universities
New Zealand
and DPMC
project on
knowledge
sharing
between
academics and
policymakers

Enablers

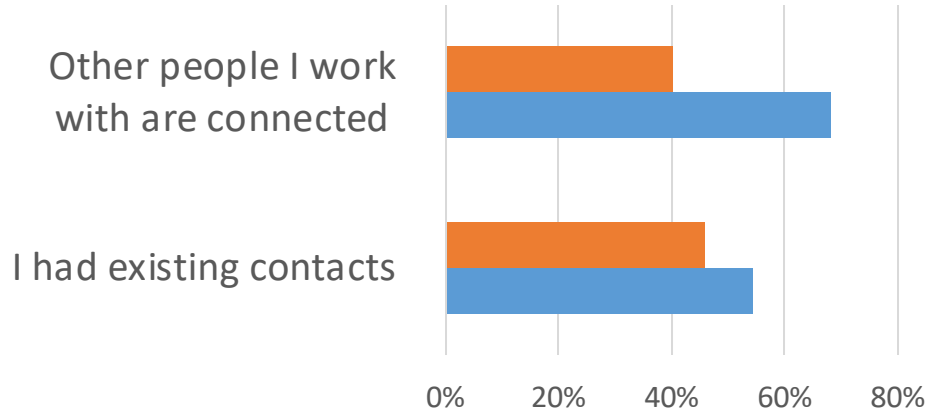
- Relationships
- Chief Science Advisors
- Conferences and other forms of knowledge exchange
- Collaborative initiatives
- Movement of staff
- Key research databases

Barriers

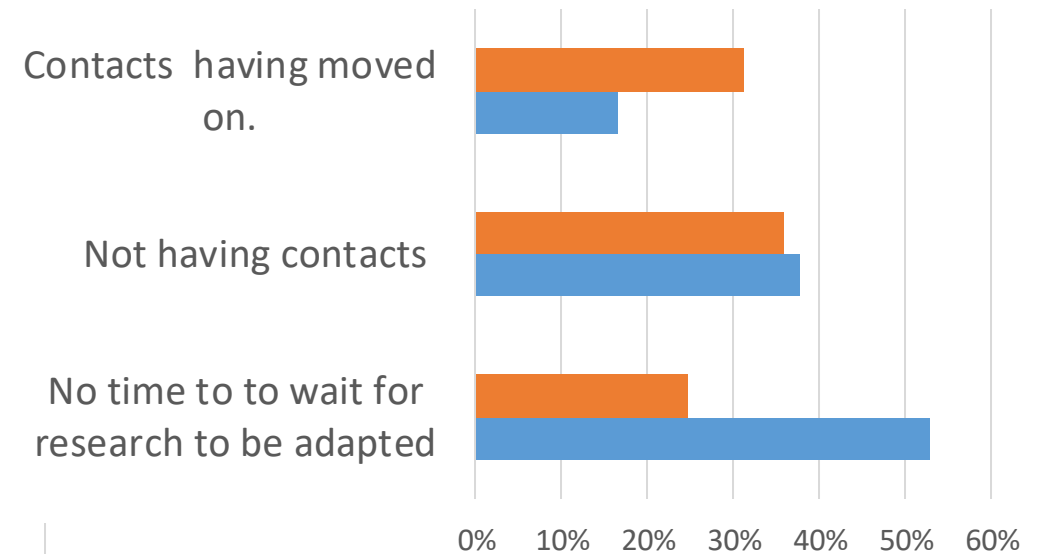
- Ways of working are not aligned
- Poor connections
- Lack of incentives
- Gaps in capacity
- Gaps in relevant research
- Commercial arrangements

OPMCSA email survey on connections

Enablers



Barriers



What would help?



Academics



Policy makers



People said:

Researchers need to be independent,
and at arms'-length from political pressures

People I know have connections

Having policy-makers trained in
how to connect to researchers

Who are the policy makers and how even would one connect with them?

I think policymakers are constrained and, despite the best of will,
are often unable to adopt recommendations.

Senior policy managers who do
not value evidence or research,
but instead prioritise
"good policy advice".

I think the answer is "I can find sufficiently good information
without connecting to researchers, and I don't know who I
should approach for more detail on particular
questions when I can't find information"

Researchers not focusing
on the key information gaps

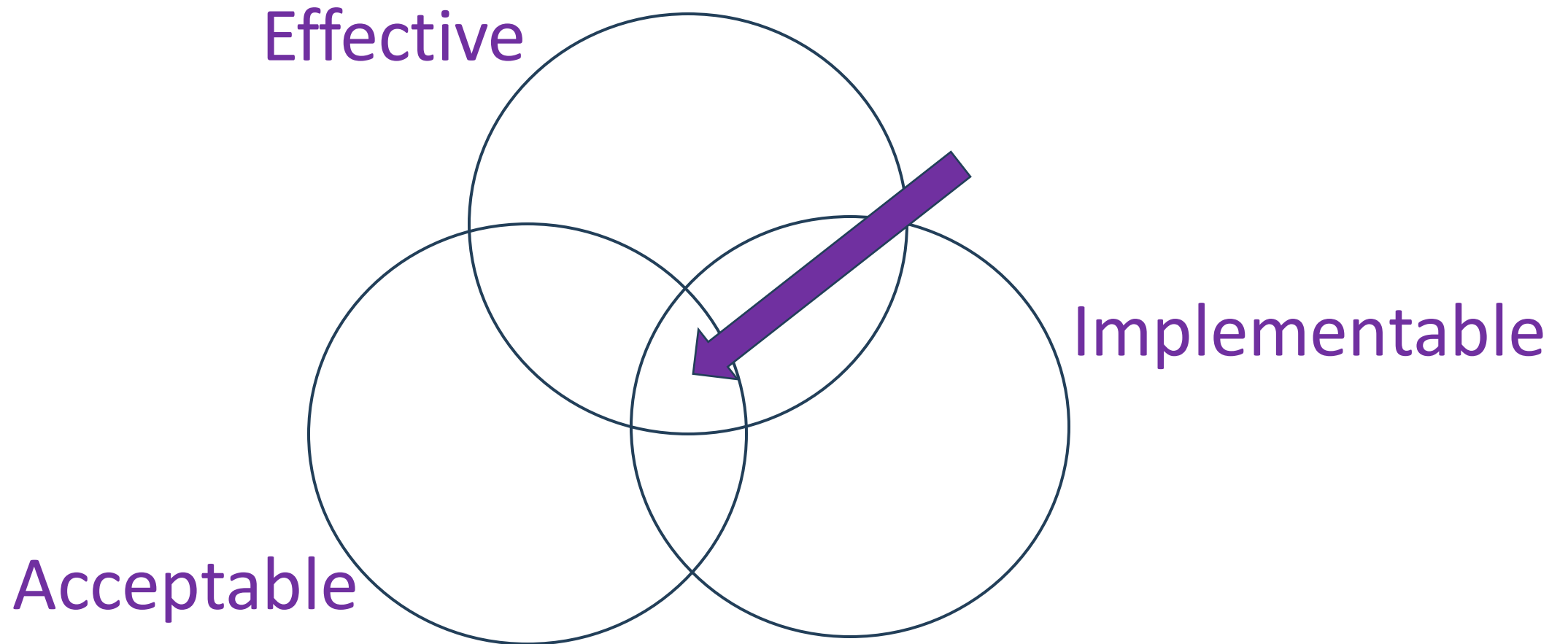
I am an ECR, having just completed my PhD.
I have this week reached out to a policymaker

Policy makers not being open to something
that did not fit their ideas of evidence

I do not believe they would take any notice

We develop relationships with academics
and keep them informed of policy interest.

Good Policy



Resources: [DPMC Policy Project](#)
[Cate Roy's project on policy connections](#)
[Hannah McKerchar's resources forgetting started](#)



Researchers connecting to policy

Juliet Gerrard

Office of Prime Minister's Chief Science Advisor,
Kaitohutohu Mātanga Pūtaiao Matua ki te Pirimia

Providing science advice into policy

- **Science is never the only advice**
- Science is good at defining the problem
- Science is good at identifying options
- Science struggles with definitive timely answers
- Politicians have to make decisions in defined timeframes
- Policy makers have to implement those decisions

- Presenting the “facts” rarely changed anyone’s mind
- Science debate should not be a proxy for values debate



The most effective science advice is delivered just ahead of the policy agenda

COVID-19

Advisory information provided to the Prime Minister as part of the ongoing COVID-19 pandemic.

October 2021: The PM requested that Juliet and Ian Town convene an expert group to provide feedback on an earlier iteration of the traffic light system for COVID-19 protection once vaccination targets are reached. The final system is significantly strengthened compared to the consultation draft which was shared with the group. You can read the feedback provided under urgency here (PDF, 309KB)

[Download the July – September 2021 advice bundle \(PDF, 3MB\)](#)

[Download the December 2020 – June 2021 advice bundle \(PDF, 410KB\)](#)

[Download the September/October/November advice bundle \(PDF, 2MB\)](#)

[Download the June/July/August 2020 advice bundle \(PDF, 4MB\)](#)

[Download the May 2020 advice bundle \(PDF, 693KB\)](#)

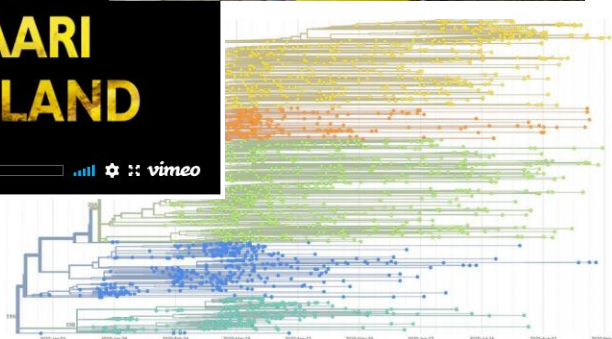
[Download the April 2020 advice bundle \(PDF, 6MB\)](#)

[Read the March 2020 advice bundle \(PDF, 611KB\)](#)

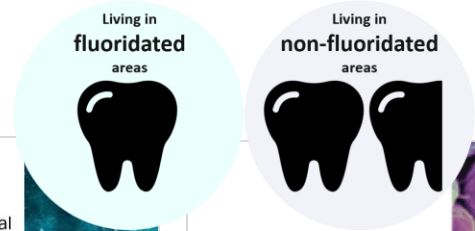
Science and Emergencies - Part 2 Whakaari White Island

Part 2 WHAKAARI WHITE ISLAND

13:52



On average, children living in non-fluoridated areas have 1.7 times as many decayed, missing or filled teeth than those in fluoridated areas



5G roll out

Trials

- Select regional towns
- Major cities
- Other areas in future

Barriers to use

- Availability in location
- 5G capable device needed

Myrtle Rust

An invader in Aotearoa New Zealand's ecosystems

Summary
Myrtle rust is an invasive alien fungal disease that affects plants in the myrtle (Myrtaceae) family. Myrtle rust attacks new plant growth which makes seedlings especially susceptible, and severe infections often kill plants. It has had considerable negative impacts internationally in the last decade. It has spread along the east coast of Australia and into South Australia, Victoria, the Northern Territory and Tasmania. Myrtle rust was first detected on Aotearoa New Zealand's mainland in May 2017. It has now been found across most parts of the North Island and in the northern and west coasts of the South Island, and it is expected to continue to spread. Species in the myrtle family provide ecological, cultural and economic benefits for Aotearoa New Zealand. Examples include native species such as mānuka, pōhūkūwae, tōiā and rānana as well as exotic commercial species like eucalyptus and figs. With the current tools and level of knowledge, eradication of myrtle rust is not possible. However, a significant programme of collaborative research is underway working closely with iwi and landowners. This research aims to grow our understanding of how the disease behaves in native ecosystems and explore options to make ecosystems more resilient. Research is also examining social behaviours and public perceptions of the disease.

Background
Myrtle rust is a disease that arises from the fungus *Austropuccinia psidii*, which has several different strains. The 'australian' strain is present in Aotearoa New Zealand. Rust fungi typically form raised spots on the underside of leaves which become red-orange spore masses after some time, before turning grey or black. This causes leaves to deform and drop off the plant.

Figure 3 Various stages of myrtle rust infection on myrtle plants in New Zealand. Image 1(a) and 1(b) show the long/short vs. Natural. 1(c) and 1(d) show the long/short vs. Natural. 1(e) and 1(f) show the long/short vs. Natural.

Myrtle rust is thought to have originated in South and Central America, and since reaching Hawaii in 2005, the spread has increased exponentially. Recent research confirms that Aotearoa New Zealand natives are susceptible to both the

Food waste

A global and local problem

The first report in the food waste series from the Prime Minister's Chief Science Advisor, Kaitiaki Mātanga Pōtaua Matau ki te Pīrima.

July 2022

Cannabis use

Yes

- We can expect 'normalisation' of cannabis use, which may lead to increased use.
- Overseas experience shows mixed evidence for use among youth and preliminary evidence of increasing cannabis use among older age groups and university students, following legalisation.
- Despite regulation, commercial cannabis will both profit and persist.

No

- Most New Zealanders try cannabis at some point.
- 15% of adults reported using cannabis at least once in the past year (2018/19 data).
- Young people are the biggest users with 29% reporting past-year use (ages 15-24, 2018/19 data).
- Current usage patterns likely to continue.

Increased nitrogen inputs into the environment, including the use of synthetic nitrogen fertiliser, cattle urine patches, and other types of pollution, can lead to excess nitrates being leached into groundwater.

Effective science advice includes ...

- **Research other than your own**
- A broad understanding of the government context
- A detailed appreciation of who in particular would value your advice
- A broad understanding of the stakeholder landscape
- A broad understanding of what other countries do in your area at the research-policy interface



CSAs can help



Ngā mihi nui

Questions?

Session 2

Gill Jolly, Gary Evans and Emily Parker

Building the science base in Aotearoa New Zealand

Ministry of Business, Innovation & Employment

Hīkina Whakatutuki

Session 3

Mike Bunce, Shane Geange, Sam Thomas and Ewan Delany

Department of Conservation
Te Papa Atawhai

Ian Town, Steve Waldegrave and Michael Plank

Ministry of Health
Manatū Hauora

University of Canterbury
Te Whara Wānanga o Waitaha

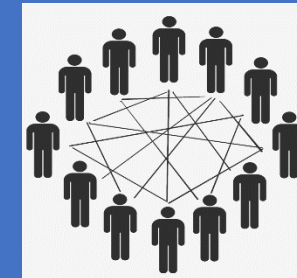
Insights from working on COVID-19 Policy and Strategy

Steve Waldegrave
Associate DDG Strategy, Policy and Legislation

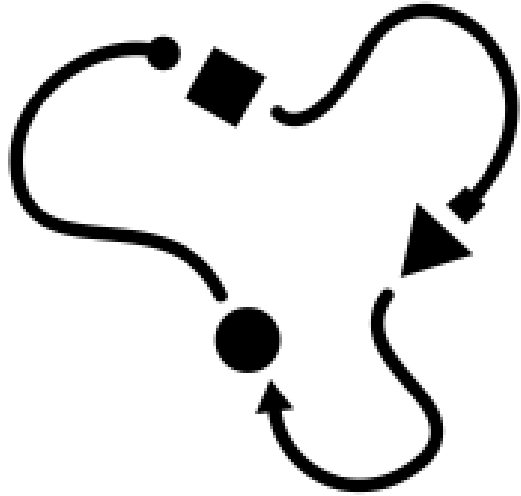
Context

- Biggest global threat to health since WWII
- Virus that was spreading fast initially, then kept mutating - uncertainty
- Interventions that helped limit spread / severity of COVID-19 also had significant down-sides – e.g. impacts on freedoms, impacts on households' ability to work, impacts on global economy...
- Constant scrutiny (good but not always constructive)
- Social license changed over time – low to start, high in early days, hard later.
- Always had to trade off interests of different groups – no single solution suits all

The experience
of COVID-19
policy in Manatū
Hauora

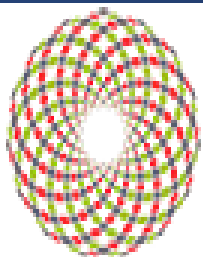


Challenges



The role of mathematical modelling in supporting the Covid-19 response

Professor Michael Plank



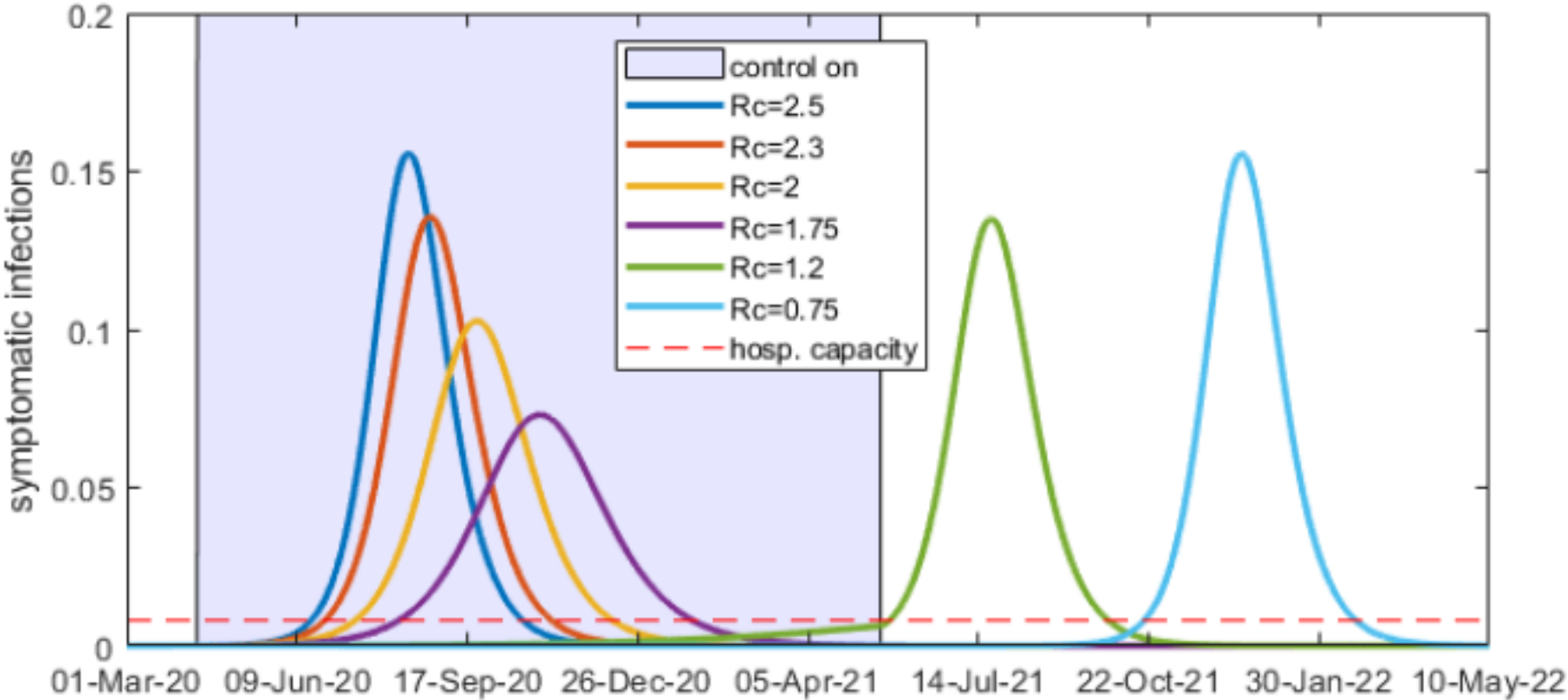
Te Pūnaha Matatini

Complexity is at our heart



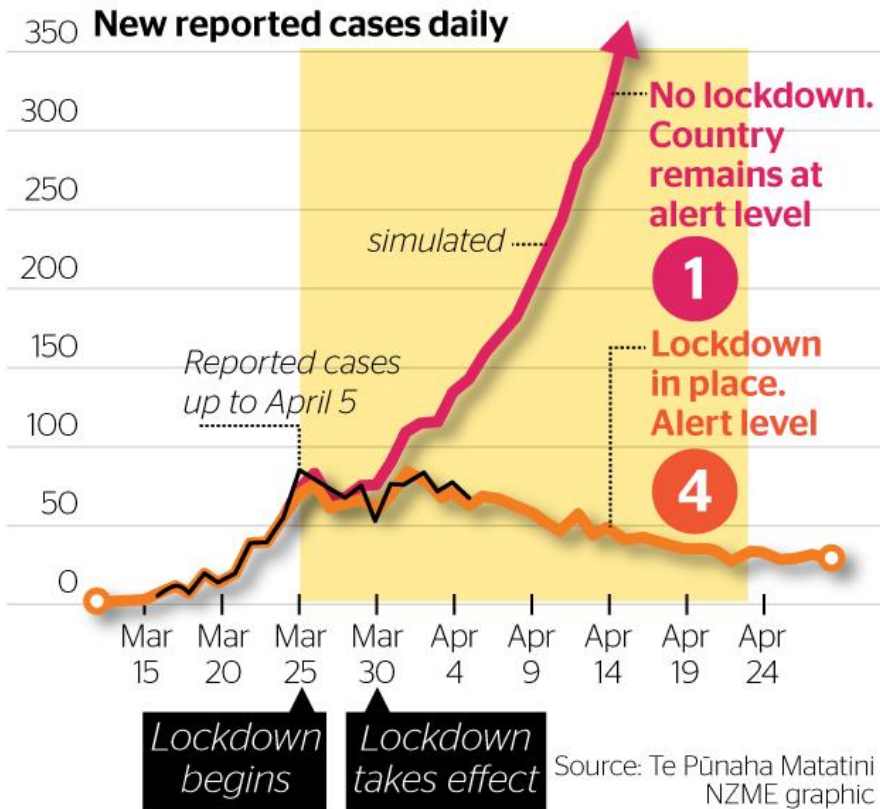
The scale of what we're facing

Healthcare system overwhelmed many times over unless there is decisive action to reduce transmission



Elimination

Worse case scenario?



Specific case scenario report

11 August 2020

- The expected number of exposed individuals at this point is **29 (interquartile range [12, 40])**.

Highlighting inequities

Estimated inequities in COVID-19 infection fatality rates by ethnicity for Aotearoa New Zealand

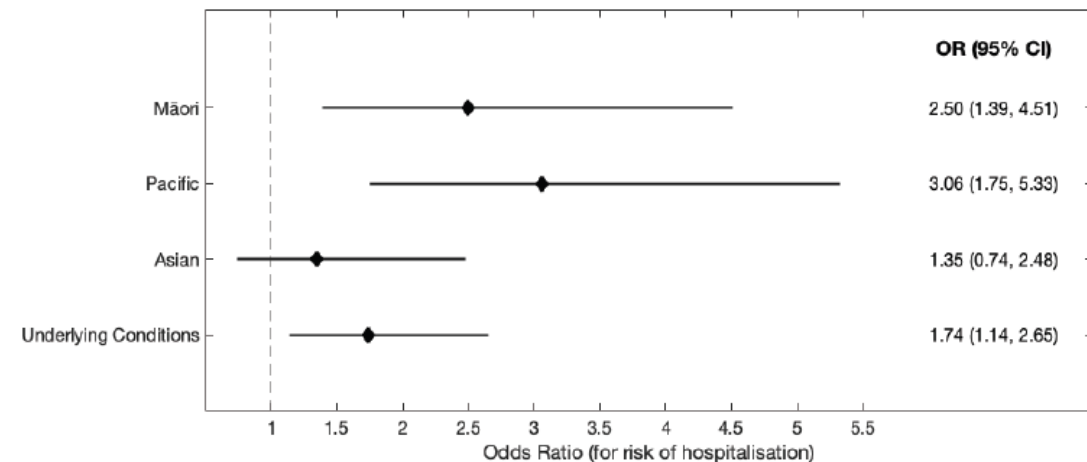
Nicholas Steyn, Rachelle N Binny, Kate Hannah, Shaun C Hendy,
Alex James, Tahu Kukutai, Audrey Lustig, Melissa McLeod,
Michael J Plank, Kannan Ridings, Andrew Sporle

medRxiv
THE PREPRINT SERVER FOR HEALTH SCIENCES

Posted April 24, 2020.

Māori and Pacific people in New Zealand have a higher risk of hospitalisation for COVID-19

Nicholas Steyn, Rachelle N Binny, Kate Hannah,
Shaun C Hendy, Alex James, Audrey Lustig, Kannan Ridings,
Michael J Plank, Andrew Sporle



Strategy and policy decision support

Exit from elimination going to be bumpy!

- Unlikely to reach herd immunity through vaccination alone
- Combination of other PH and border measures needed

Comparing outcomes under different policy options

- Change to Alert Level or Traffic Light settings
- Changes to isolation policy
- Different border restrictions



Life at Red

- Workplaces are open – where appropriate staff may work from home
- Everyone can go to school – public health measures will be in place
- Wear a face covering whenever you leave the house
- Keep scanning QR codes and record keeping everywhere you go.
- Make sure you have your My Vaccine Pass ready to be checked – most places will have restrictions in place
- Keep physically distanced where possible
- If you have cold or flu symptoms isolate immediately and call Healthline for advice about a test
- Get vaccinated if you haven't already – being fully vaccinated opens up new freedoms under the COVID-19 Protection Framework

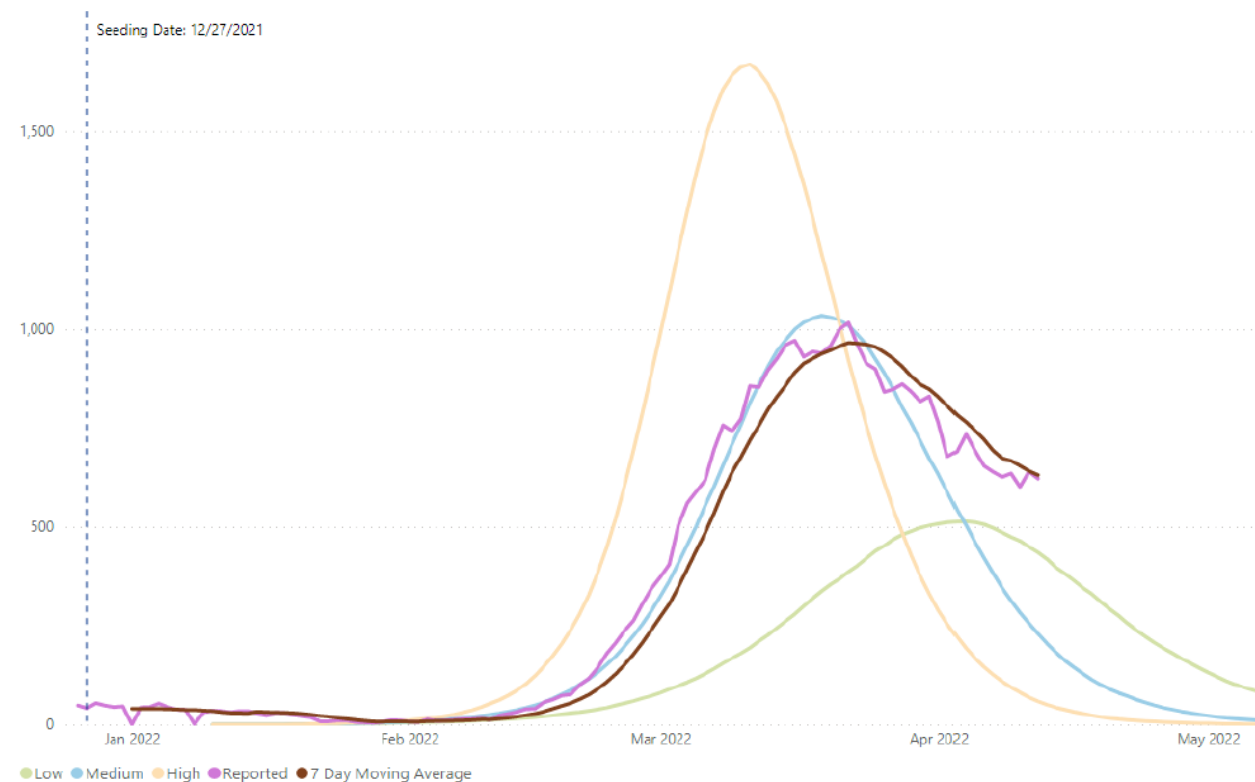
Te Kāwanatanga o Aotearoa
New Zealand Government

Unite against COVID-19

Situational awareness and planning

Integrating multiple data streams with epidemiological models in real time to provide scenarios for situational awareness and planning

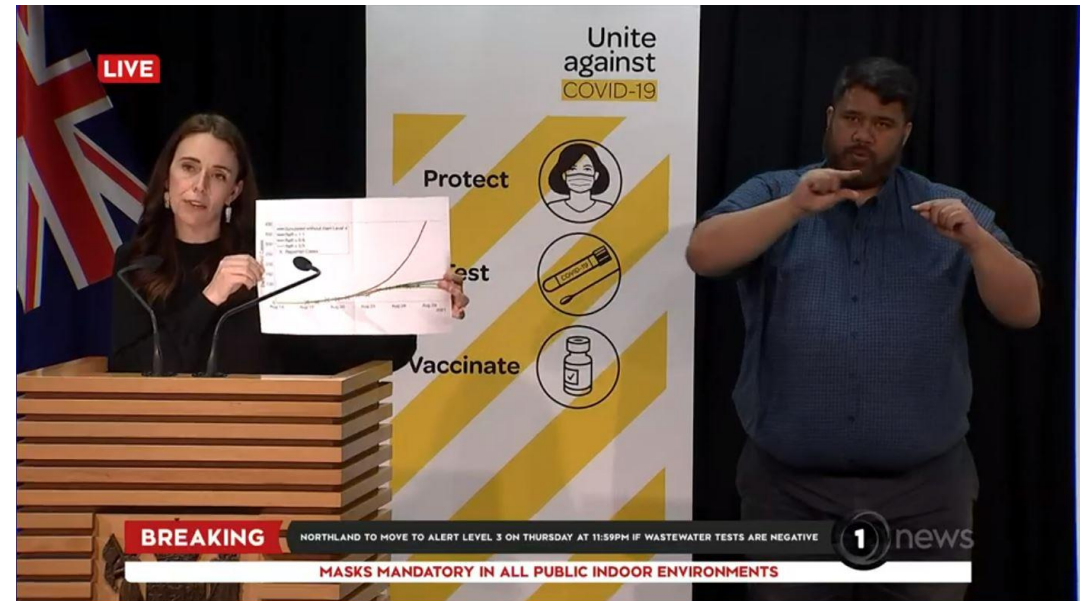
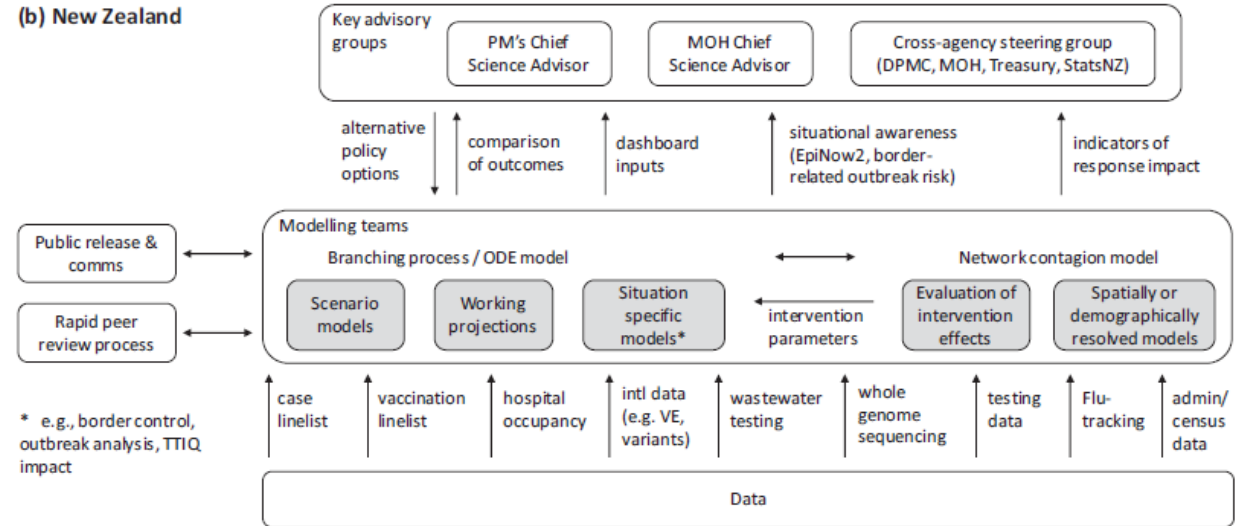
Modelled Hospital Beds vs Reported Hospital Beds



Sources: TAS, based on COVID-19 Modelling Aotearoa Branching Process Model 27 February 2022, and DHB reports to TAS of daily hospital occupancy (all COVID-19 positive people admitted as inpatients) as of 13:00 13 April 2022.

Comms and media

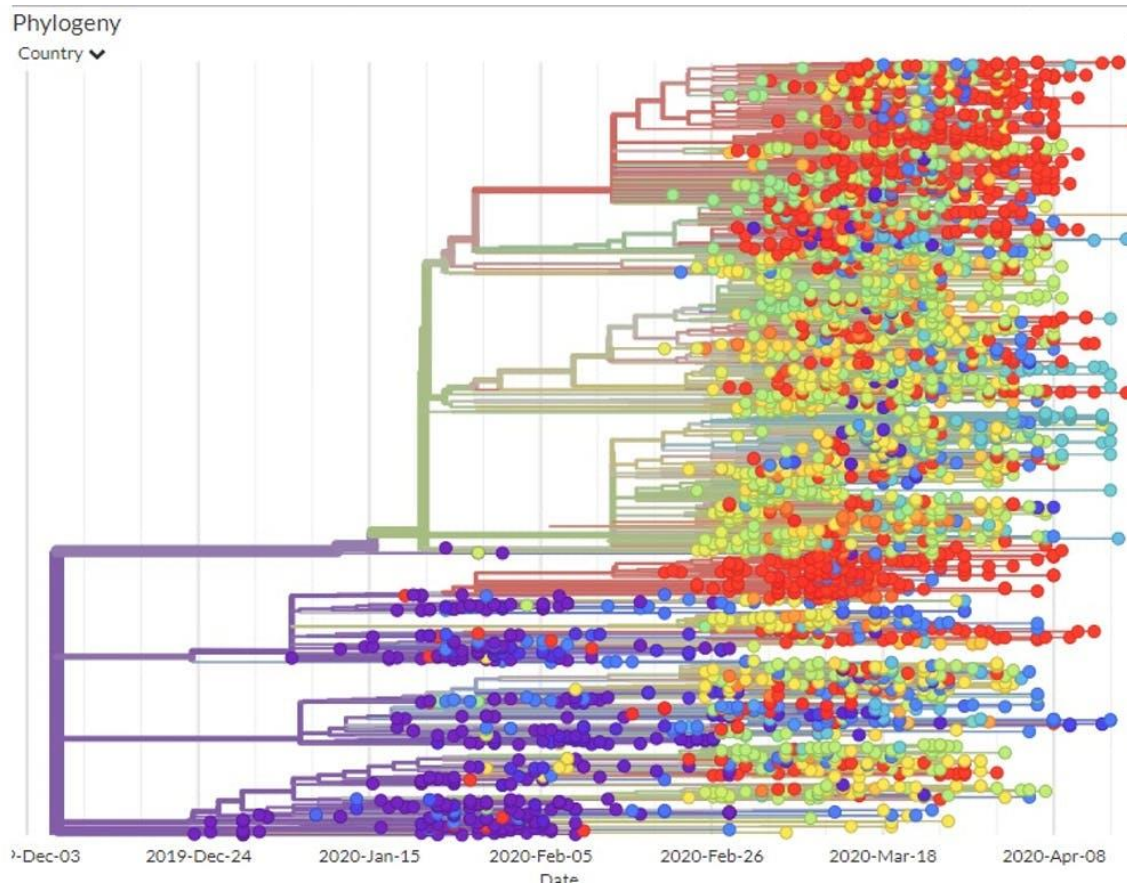
- Commissioning via regular two-way dialogue with govt steering group
- Results released publicly (>80 public reports & journal articles) and supporting media
- Stressful working to tight deadlines under intense media scrutiny...
...but important for transparency and public buy-in (not the case in other countries)
- Walking a tightrope to communicate results of our work without undermining or appearing to dictate PH response
- More challenging over time as trade offs became more nuanced



Follow the science....

Ian Town
Chief Science Advisor
Manatū Hauora

The triumphs



WHAT ARE RNA VACCINES AND HOW DO THEY WORK?

WHAT ARE RNA VACCINES?

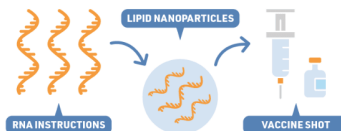
SARS-CoV-2

Viral RNA
The virus's genetic material. Contains instructions for making proteins.

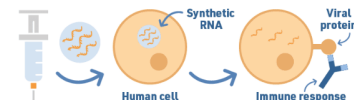


Spike protein
Protein which helps the virus penetrate cells and initiates an infection.

The genetic code of the SARS-CoV-2 virus is made up of RNA. Scientists isolated the part of this genetic code that contains the instructions for making the virus's spike protein.



Synthetic RNA which codes for the virus spike protein is packed in lipid nanoparticles (very small fat droplets). This stops our bodies' enzymes breaking it down and helps our cells take it in.



Once the synthetic RNA is inside one of our cells, the cell follows the RNA instructions to produce the virus spike protein. Its production then triggers an immune response in our bodies.



RNA VACCINES: BENEFITS AND CHALLENGES



VACCINE PRODUCTION

RNA is easy to make in a lab, so RNA vaccines can be developed quicker than other vaccines.



SAFETY OF THE VACCINES

RNA can't cause infection and is broken down by normal processes in our cells. An RNA vaccine hasn't been licensed for use in humans before but they've been under development for several years for other viruses, including influenza, HIV, and Zika.



STORAGE AND TRANSPORT

Some RNA vaccines must be stored at low temperatures to remain stable, which makes storage and transport more challenging.

RNA VACCINES FOR COVID-19

Several proposed vaccines for COVID-19 are RNA vaccines. They can be based on two different types of RNA.

mRNA vaccines

Moderna
Pfizer & BioNTech
CureVac

saRNA vaccine

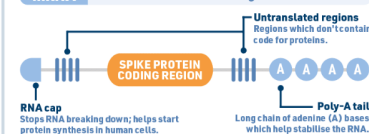
Imperial College
Arcturus

mRNA AND saRNA: WHAT'S THE DIFFERENCE?

The structures of mRNA and saRNA are similar but have a key difference, as the diagrams below show.

mRNA

mRNA stands for messenger ribonucleic acid



saRNA

saRNA stands for self-amplifying ribonucleic acid



As saRNA produces more copies of itself once it's in a cell, it can be given in smaller doses than mRNA vaccines. This makes the cost per dose lower and means higher numbers of doses can be produced from the same volume of vaccine.

The
challenges

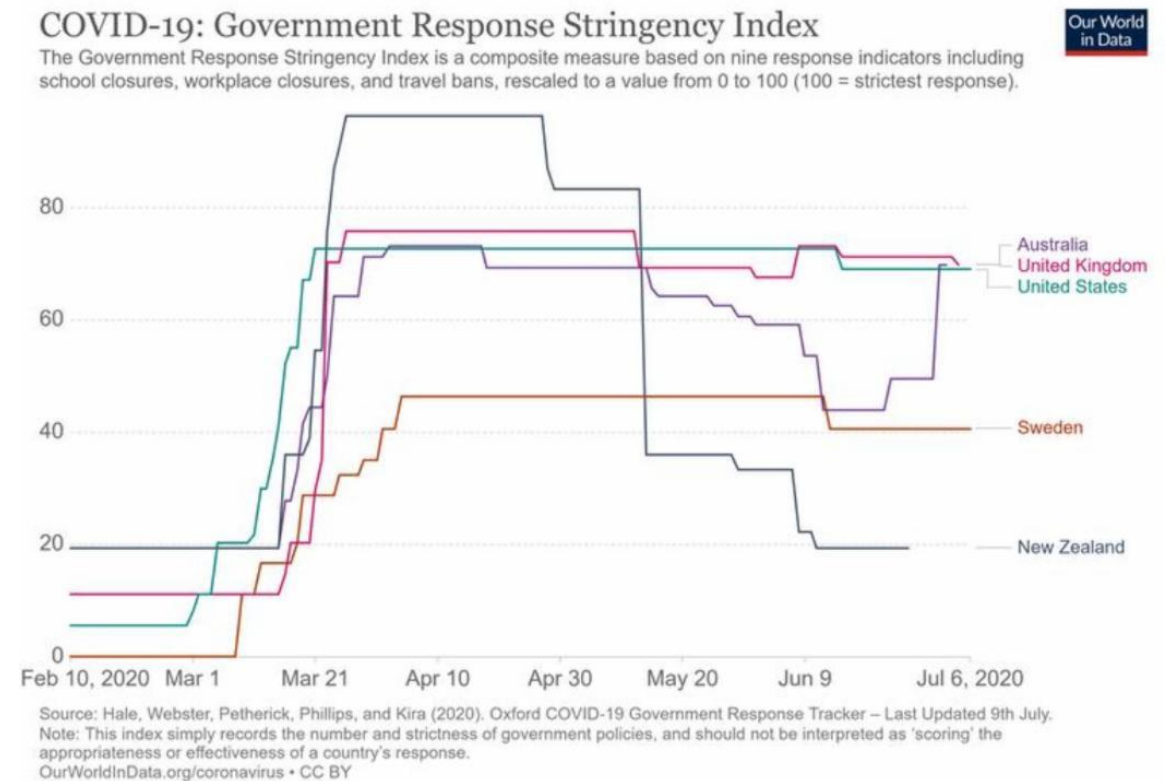


Science into policy

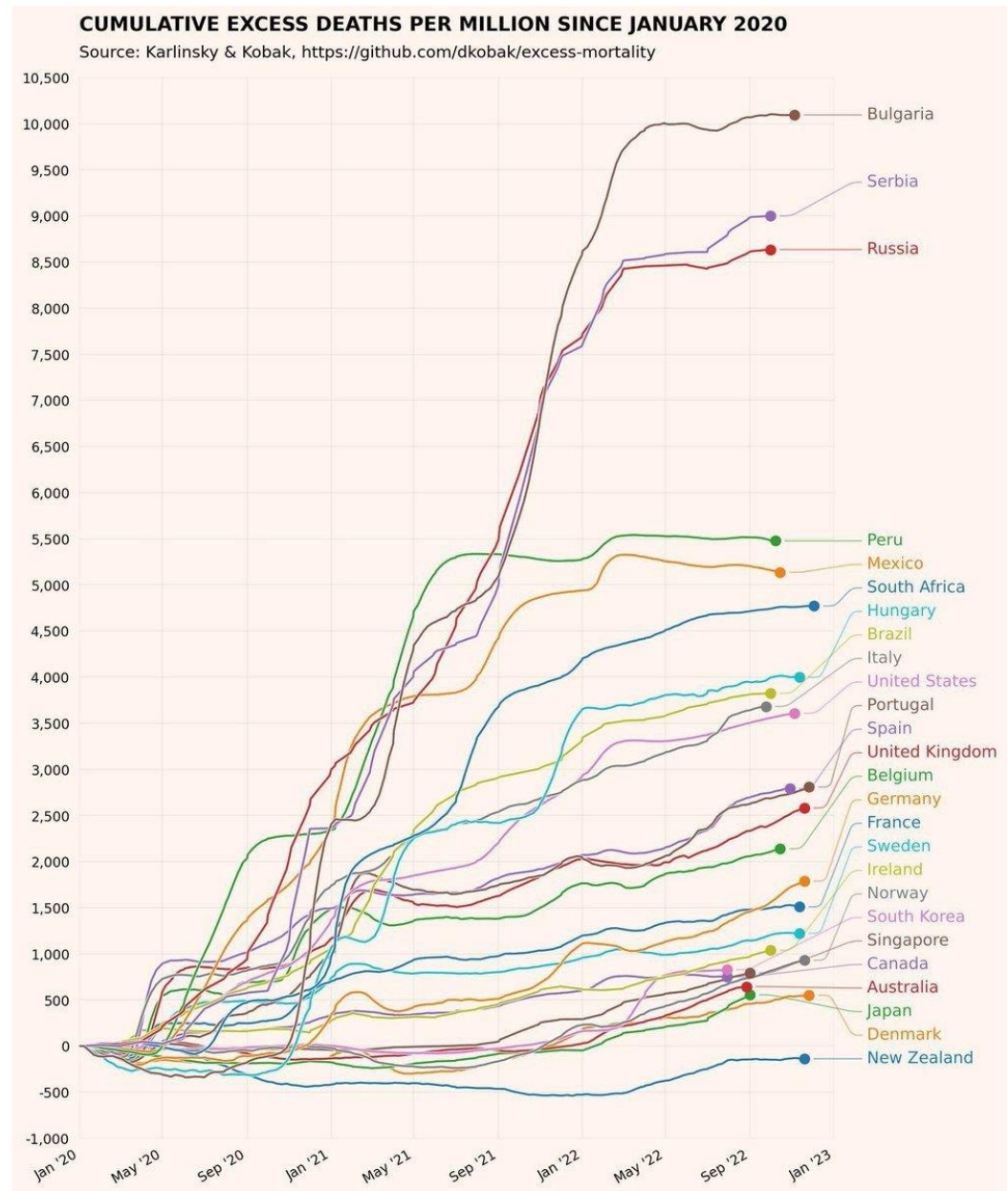
- The uncertainty and fear = precaution
- Keeping pace with the pandemic and the avalanche of science – much not peer reviewed
- Ensuring our advice (from the D-G) was as informed to the greatest extent possible by the science
- Taking people with us:
 - Colleagues across all of government
 - The public
- Communication is key
- The role of academics was deeply appreciated

What worked well

- ✓ “Go hard, go early”
- ✓ Principled but adaptive
- ✓ Centrality of equity + Treaty
- ✓ Policy-communications collaboration
- ✓ Centrally led, locally adapted for specific communities



The result



The Royal Commission of Enquiry

- Members: Professor Tony Blakely, John Whitehead, Hon Hekia Parata; <https://www.covid19lessons.royalcommission.nz>
- Purpose: *To strengthen Aotearoa New Zealand's preparedness for, and response to, potential future pandemics*
- Work to date: Received 300 page narrative from Ministry and interviews with all key leaders and agencies.
- Next phase: Draft report in November, and final report in June 2024
- Pandemic planning: The Commission will provide advice/guidance about the approach to pandemic planning. This is already underway within the Public Health Agency

Session 4

Speed dating and Networking



We would really like your feedback, please

*Complete the Mentimeter poll
Come and talk to us, or
Fill in the suggestions box outside*



We would really like your feedback, please

What would be the best next step to connect research and policy communities?

- 1st Networking meetings
- 2nd Theme based discussions
- 3rd Co-operative projects
- 4th Nothing else is needed
- 5th Helps connect the right researchers and policy people on activities
- 6th Secondments of academics in to departments and vice versa



Who would you recommend as participants for the next workshop, to attract a diverse research and policy community?

Ngā mihi nui

