TE TIRA ĀRAI URUTĀ
NZ ROYAL COMMISSION
COVID-19 LESSONS LEARNED

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Royal Commission of Inquiry into COVID-19 Lessons Learned

Interview Transcript: Hon. Dr Ayesha Verrall

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Present:	Judy Kavanagh	JK	*Commissioner of the Inquiry*
	Nicolette Levy KC	NL	*Counsel assisting the Inquiry*
	Danielle Kelly	DK	*Counsel assisting the Inquiry*
	Hon. Dr Ayesha Verrall	AV	*Former Associate Minister of Health & Former Associate and Lead Minister for COVID-19 Response*
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	Inquiry Secretariat member	IS1	

NL	[administrative discussion, reference to written questions and answers] So, do you want to give us an introduction to what you said in your answers or are you happy that they speak for themselves?
AV	I'm happy they speak for themselves and happy to talk through them with you today.
NL	Okay, great. Thank you very much. So, I think that the first question.... You say that you set up, I think you say that you set up the SCPHAG initially chaired by Sir Professor David Skegg, is that right?
AV	I did the work to organise it and had an input into the Terms of Reference. If you are asking me did I bring the Cabinet paper that set it up, I am not sure, but that was, I commissioned the advice from them.
NL	All right. And you've said this informed “by” decision, I think you mean “my” decision, but you might mean this informed something by someone else. So I was just checking it on your answer 9C. You said, "I had a network of contacts. This informed"... I think you [talking over]-
AV	Yes, correct.
NL	... that it's my decision. Okay, so that was your decision. All right, so-
DK	Sorry. Just in your B, while we're on 9 and 9B, you said that, "You are accustomed to managing uncertainty of incomplete health information," and I just wondered if you could explain that just a little bit further.

AV	Yeah, I tried to mention that elsewhere in the paper as well. We were not dealing with concrete, well-established medical information during the pandemic and there are a number of ways in which understanding the limitations of the information presented to you was something that I felt was important and that I saw necessary to inject into the process from time to time in awareness of that. So for example, the vaccine would've had trials that reached, were done on a certain scale that is appropriate for clinical trials. But as an infectious diseases doctor and former expert advisor to PHARMAC, I know that it is normal that after the approval clinical trial, larger scale information for more people is collected as part of the routine follow up in a vaccine. So, it is appropriate that use of a vaccine occurs after a certain hurdle in terms of that threshold of evidence is cleared. But over time, more certainty surrounds the vaccine, its benefits and side effects by the nature of the more experience and it's used, the more information that's gained. Another example is when we rely a lot on case numbers, in fact case numbers became the main way in which the media talked about and public understood the progress of the pandemic. Now, the reported case numbers and the true case numbers are different, right, because the true case number takes into account undetected cases and undetected cases are a function of, for example, how widely you're testing. We could talk about modelling, maybe we will later, but those are examples of how understanding standards of evidence, uncertainty and data is a helpful contribution towards the decisions.
NL	Just expanding on that, you've said that you tried to inject an understanding. Now, what you arrived at in October 2020 was a Cabinet that included people who had been involved in the phase one response if you like, in March and April and had had science advice and had acted on that science advice in that period. And yet you must have been an immensely valuable addition to the discussion. Did you get that understanding that you were really adding to the ability of Cabinet to understand the science?
AV	Look, I just want to be humble about the fact that there were a lot of experts that contributed to the response. I was one. I had a unique role in Cabinet and this was a challenge, I wouldn't place myself above the other people who made important contributions in terms of the expertise. So, I don't know if that really addresses your question.

NL	I'm not suggesting, I mean, lawyers do this sort of thing all the time and Cabinet must've done it when the pandemic first began, become instant experts in a tiny little part of something that you've studied for many years. And I suppose I'm curious as to-
LC	I think you are asking Dr. Verrall to comment on the actions of the first Cabinet and A, she wasn't there and B, that's outside your time period.
NL	No, I'm not asking to comment on the actions. I'm just asking you to comment on the extent to which you felt that you were significantly adding to their understanding about uncertainty. Because you've said that was something you injected. So I'm just exploring that.
AV	I sought opportunities to make a contribution and was called on to make a contribution as a Cabinet Minister. I always found my colleagues to be incredibly quick studies, so I never felt the need to... I felt my expertise and that of others was welcomed.
NL	Yeah, yeah. I have no doubt.
LC	And noting that your specific question was how Dr. Verrall's background informed her work and that's what she's answering. It's not a reflection on whether there was, how it fitted with everybody else and how their backgrounds influenced or added to their work, if you see what I mean.
NL	No, I understand that. It was just a follow up, a follow up question. So at your paragraph 16, you talk about the decisions about alert levels being made by two different Cabinets. You obviously only arrived at the second Cabinet, but did you become aware of any significant differences between the... Sorry, where's my question? Why was that context important that there were two different Cabinets?
AV	Because I wasn't in the first one.
NL	Right, right.
AV	And they took important decisions too.
NL	Yeah. Did you become aware of any significant difference in priority between the two governments, the previous one and the one that you were in?
AV	No. No, I did not.
NL	Okay. You've explained at your 19 that all advice, I'm talking about Ministry of Health advice, "All advice was able to be contested in and before Cabinet and I frequently took this opportunity." Can you just give us a couple of examples of when you took the opportunity to contest the Ministry of Health advice? Can you think of any?

AV	Yeah, I can, but that's subject to Cabinet confidentiality. But all of these, we understood the seriousness of these issues and the Cabinet meetings were devoted to discussing them and therefore I took the opportunity to make sure that my colleagues understood where I thought the emphasis was right or where my opinion differed.
NL	So those were the robust internal debates that you refer to?
AV	That's right.
NL	Okay.
DK	Now, this is a clarifying question as well, it's probably other people who do already understand, but you talked there also about community voice at the Cabinet table and I think earlier about the community panel. Is that one and the same?
AV	Well at the Cabinet table, there can be advice that reaches us through those more formal mechanisms that officials convene and then that informs papers. So the community panel was one source of those. Then there's also the fact that, well, it's worth remembering, I was a new Member of Parliament then, so I saw my colleagues speak to their knowledge of likely community impacts of decisions and the pandemic itself. And I came to learn how successful politicians over their career build a network of community contacts. They know everyone from the local school to the relevant iwi, to the businesses and their electorate, and all of those contacts are sources of input into decisions.
DK	So, if I can summarise that? Ministers also brought with them community voice to the table. Is that what you're saying?
AV	Yeah. In addition to the more formal mechanisms of bringing that in.
NL	So, in your answer at 27 and you're answering the question about lockdowns and balancing interest in the pandemic. And at 27,-
JK	I actually did want to-
NL	Oh sorry. No, no. We'll do things in order. I'm sorry, I'm not asking as I go along. Please, ask away.
JK	If I may, I am really interested in your discussion about the paper that you wrote with Michael [Baker], paragraph 23.
AV	Yes.

JK	And this is just helping me with the nature of COVID and the nature of influenza and the nature, as you understand, I'm charged, we are charged as Commissioners with making recommendations about a future pandemic. So it's quite clear that these pandemics can be very, very different in the makeup. But of course we don't want to make recommendations for a past pandemic, right? And so we are looking for more general types of lessons. So in the paper that you wrote with Michael, the pandemic plan I think was written for an influenza-
AV	That's correct.
JK	... epidemic with very short transmission rates. Is that right? Whereas COVID, and you've got the WHO advice in here, a longer incubation period that made an elimination strategy, for example, just so viable really rather than suppression. So if you are thinking about the kind of advice that you might want to give to somebody who's faced with another pandemic, and I always think of it as like, in the case of pandemic break glass here, right? Here is the advice you really need to look at. Would the characteristics of the actual virus as they would be known and emerging at the time, be really crucial to the choice of strategy? So there's no one size fits all strategy. Am I correct in-
AV	Emphatically, yes. Yeah, I can elaborate a little if that's helpful.
JK	Yes, could you?
AV	Let's say three observations from China were really critical. The incubation period not being longer than influenza and in contrast to influenza where maybe a third of cases or more are asymptomatically transmitted, that proportion was much lower for COVID. And then the third observation is that at the macro level they also contained and eliminated their outbreak as well. So firstly, we had a real-life observation to base the strategy on, but secondly, that basic epidemiological observation based on looking at cases and contacts and transmission rates yielded information that was so valuable and that because the longer incubation period gives contact traces a chance,-
JK	Of course.
AV	... okay, you've got time. And then the fact that the asymptomatic cases aren't so important, that means that your cases are more likely to be found. Those things favour elimination and also tell you that what I call case-based measures, which perhaps is my own idiosyncratic language, but the measures to find cases through

	testing and a health system and then to trace their contacts, those are much more likely to be effective in that situation. So, I wouldn't throw out the influenza plan and I haven't set myself the task of writing the new plan, but I think identifying some of the key strategic decisions and their components in order to surface decisions like is elimination even possible for this? Would be how I would see those as crucial strategic decisions at the beginning leading to a plan.
JK	Thank you. That's very helpful. I have one follow up question if that's all right? And that is that things change as well, don't they? So you end up with maybe a shorter, is it possible that you end up with a shorter incubation period with a different variant?
AV	Yeah.
JK	Right, so those three things that you were saying you should be looking at, you would have to be continually monitoring those all the way through?
AV	Correct. And in fact, the incubation period did shorten throughout as different variants that were better adapted to humans came. At the beginning it wasn't as effective a pathogen as it was two years later. And I wouldn't just put the limit on those three observations. There would be a variety of things, but it is worth remembering that access to... It was hard for the World Health Organization to enter China to get those observations. And it's, I believe it's important that we see the value and that information being internationally... As an international community, we valued that information and we set up systems for it to be shared.
JK	Okay. So it might lead to a recommendation, for example, about the international cooperation being stronger than perhaps it was at the time?
AV	Indeed, without global information sharing, New Zealand will struggle in a future pandemic. Remember that all the tests are based on sequencing. The PCR test that was developed was based on the sequences obtained from China. The vaccine was also based on that sequencing. So, those global institutions about information sharing were not perfect going into the pandemic because … I've forgotten the details. But essentially there was a political back and forth about whether that team could visit China initially in the pandemic. And sadly since the pandemic, consensus around the World Health Organization's role in brokering those things has only got harder to reach. So yeah, it's very important.
DK	You said you limited it to the three components and this might not be something you can comment on, but I wondered with your expertise, are there other types of components

	that you would look out for in assessing whether elimination would be a viable thing in the hypothetical of a new pandemic? Is there anything else that-
AV	Things that come to mind off the top of my head include the availability of a test and the, we've talked about diseases where the reservoir is only in humans, but you think about diseases where the pathogen is present in the environment or animals, then that's much harder to control.
JK	Now I get the reference you had here about the environment and animals. I didn't get that before. Thank you. I'm sorry. Do carry on.
NL	So that's, we can't lock down the rats. Is that sort of-
AV	Or avian influenza is another really concerning example.
JK	We've always had bovine tuberculosis as well. Is that a transmittable disease?
AV	Yes, it is. And the milk is a foodborne disease, but also through sneezes.
JK	Okay, thank you. Sorry, Back to you, Nicolette.
NL	Thank you. I think I was referring to your answer at your paragraph 27 about our question replicating errors that underpin the influenza-based pandemic plan. Can you expand on that maybe?
AV	The principle of balancing... The question asked about how lockdowns might achieve a public health aim, but they have economic and social costs. That framing of the question is appropriate for countries with a mitigation strategy. And I'm sure you've studied the similar reviews and inquiries that have happened in other countries. And that will be how they will have framed their tasking. Because they had no option...
AV	... of elimination, potentially because of their borders, or the fact that the option only emerged to them after they had widespread transmission. Countries on a mitigation strategy could vary their lockdowns to be stringent or less stringent or stop them, and they would find that if they reduce those controls, over time, the virus would come back. There'd be more cases and more demands on their health system. And in some cases those were overwhelming. If they pushed the restrictions, made them stricter, then health system might manage, recover a little bit, but that will be that the society wasn't open. I don't think anyone would say they could open society and the economy would be normal, because of course it wasn't. Even in the most open countries, there was still economic costs of that. But I see that that's a valid way of thinking about that in a country on a mitigation strategy. But of course, in an elimination strategy, the opportunity is for

	the virus to be eliminated, and the economy is more open than the alternative, and society's able to function much more normally. So, in contrast to those countries who had no choice but to use a mitigation strategy, in the case of New Zealand, the public health controls achieved economic and social outcomes, and they were aligned, as opposed to at odds.
NL	That's really helpful. I think just to follow up on your response, was that an error that was made in the influenza-based pandemic plan that they didn't distinguish between mitigation and elimination?
AV	In the plan that New Zealand had entering into the pandemic?
NL	Yeah.
AV	My assessment is it only imagined influenza as a pathogen, and it didn't have an elimination option on it.
NL	Right. Yeah, yeah, yeah.
AV	So that's part of what we're trying to draw attention to through that article. I think the article came after numerous public statements, and actually, after the lockdown had occurred, the first lockdown.
NL	All right. Do you have anything else?
IS1	So, the error in the flu plan was not having elimination as an option?
AV	Because it was only focused on influenza and...
IS1	Oh, right.
AV	Yeah, sorry, I hadn't mentioned this, because elimination would not work for flu.
IS1	Yes, because it’s airborne.
AV	Well because flu is droplet-borne, but it is because of the asymptomatic transmission and the shorter incubation period.
IS1	So it was a pandemic plan rather than a flu plan?
AV	Correct. Yeah.
NL	Yeah, obviously influenza-based. Okay. All right, so I think that covers the next couple of questions, doesn't it?
IS1	Yeah.

NL	Yeah. So you've talked, at your paragraph 29, about the highly-vaccinated population being the exit plan. How would you describe the importance of achieving that goal to the government's plan, and what were the options if it couldn't be achieved?
AV	Well, the vaccine was, at the time that we wrote the article, recognised as the only exit plan. Most infectious diseases experts opined that that would be five years away, at the time, if I recall correctly. And yet, Operation Light Speed delivered a vaccine in record time. So as things emerged, we discovered that that was an option available much earlier than perhaps many of us dared to hope, really. Your question was what was the alternative?
NL	Mm.
AV	Well, the alternative is all the other options that were being pursued in the world, really. But the fact is, you lose the opportunity to do elimination if you don't do it from the beginning, or near the beginning like we did. Whereas if, let's explore that hypothetical, where elimination wasn't as feasible or didn't work in the way that was initially hypothesised, and the alternative is to open up more, as other countries did. But it was always evident that – A - we were having better health, social and economic outcomes than those countries that had pursued the other strategy. Until of course the Delta outbreak and then we're two months away, also, from the vaccine campaign finishing.
IS1	Realistically, could we have used those more restrictive measures for five years? Was Cabinet discussing that at the time and sort of forecasting and planning for that?
AV	Just remember that the availability of the vaccine was the critical thing in making us see the pathway to a reopened country is the appropriate way out. No, I don't think anyone thought five years was, but I also, I cannot recall being part of a conversation where that was felt to be likely. And even before the vaccine got its... There was knowledge of the progress of a vaccine much earlier than the vaccine was in its final study. First its approval study or it's rollout, right?. So I think the awareness that it wasn't going to be that scenario of a long wait, was the majority of time I was in government.
NL	Yeah. You might not know the answer to this, but will the vaccine for the next pandemic be available in a year?
AV	What's been done with the technology that was used to make the mRNA vaccine, has accelerated the whole process. Because you get the sequence and you have a, I don't want to oversimplify other people's very hard work, but there is a pathway there. And it's also, we say the vaccine, but there were multiple vaccines using different technology platforms as well. So I mean in terms of the science being surprising on the upside, that vaccine is really area of brightness.

NL	So there's been exponential learnings that will hopefully be used to good effect if there's another pandemic?
AV	That's right. Yeah.
DK	Okay. Sorry, it's just a point of clarification. I think you said at the beginning that at the time of your paper, it was recognised that hypothetical vaccine would be the only way out. Was that recognised by who? Do you mean you recognised it in your paper, or that was a scientific-
AV	I believe it's in the paper.
DK	Yes.
AV	And yes, it would be what scientists were talking about. There was already a priority to vaccine development from very early on. And not just that, I don't believe vaccines were the only option. Remember an antiviral was also thought of as an option early on, and it was subsequently developed, wasn't it? But I think clearly a vaccine is much more cost-effective than a treatment that needs to be taken multiple times.
IS1	Sort of ties into the next question we were going to ask. There seems to be a couple of different concepts. One is the sort of availability of a vaccine, and then there was the target of population vaccination and how that influenced decision making. So we had a vaccine approved by February, 2021, and then we had this target step-down from the restrictive measures. And you've said at paragraph 30 I think, that by the end of August, 2021, the R value was less than one. And our understanding, admittedly, as many of us lay people was that that meant that the outbreak was self-limiting, and that an R value less than one prior to 2021 would've resulted in a step-down in the alert levels. But then by the end of 2021, we had this idea that we know we also needed a certain number of people vaccinated by that time. And we just wanted to understand more about whether that was an intentional new factor that was introduced then, and how that influenced it.
AV	Yeah, the R value is a reading taken every day, based on the observations you have. And the R naught is a function of the virus, independent of where you're currently at. So to say that the R value at the end of August was less than one, is telling you that with all the controls currently in place, the outbreak is coming under control. Of course, if you reduced either the lockdown or your use of contact tracing and testing, the R value would spring back up. So the R naught is the function of the virus, and the R value is contextual.
NL	And very fragile?
AV	Well, very prone to change.

NL	So are the importance of those other factors such as the lockdown measures, why the R value indication wasn't enough to signal a move in Auckland in late August or early September, and move down the alert levels?
AV	Of course we did move down the alert level to alert level 3.
NL	In October? Yeah, in early October.
AV	And the R value in the context of elimination, the approach is to find and isolate all the cases and contacts. An R value could be less than one, and you could still have several hundred or thousands of cases. And unless all the cases that you knew about and didn't know about were appropriately managed, which is a big bet in any outbreak, including this one, particularly this one as it turned out, then you wouldn't be confident of elimination.
IS1	So is that why vaccination then was the target, it was introduced around that point?
AV	The vaccination was-
IS1	To the decisions around lockdowns specifically, so reaching the 90% target. So you have your R value as... I guess some of the advice you're getting and then the vaccination rate is the target. And what I'm hearing you say, is that, at that point, the R value was only one of other considerations.
AV	The R value is not particularly helpful for removing restrictions. And I would follow much more, in that sort of situation, the case numbers would be a key thing in a large-ish outbreak, how much testing you had done of the community impacted. If you've done less testing, you're less confident about the presence of undetected cases and possible transmission. To avoid confusion, that is different from the modelled R values that were in some of the decision papers that was informing a decision about vaccination. I can see this as a lot of different uses of the same parameter there, but the R value and the Cabinet papers about what the vaccination target should be, that's modelled. It wasn't in relation to the present outbreak, if I recall correctly. And essentially it was giving a guide on how outbreaks might be different at different vaccination thresholds.
IS1	Thank you.
JK	That's quite complex.
IS1	That's my takeaway from that. Thank you.
NL	So I don't think this next question is any less complex. I'm going to ask you a question which is drawing on your answers in three or four different paragraphs. So-

AV	Okay.
NL	... I'll try to-
AV	Makers out.
NL	Well, I'm try to do it without reading from them, but beginning at paragraph 21, you make the point several times that the best economic and social outcomes were achieved by effective public health control. And as these considerations were interdependent, it wasn't a trade trade-off issue. But at 28 you note that the relationship between public health controls and health, economic and social outcomes, changed as elimination ceased to be feasible in mid to late 2021. And then at 32 you refer to a period where public health benefits did not outweigh the costs as they had earlier in the pandemic. And then again at 42 you talk about the complexity of weighing costs and benefits. So does this suggest that there was, in fact, once elimination has been left behind, a balancing or trading-off exercise between public health benefits and other considerations, and that the balance changed as the pandemic went on?
AV	Your description was not correct in terms of the third item with respect to at paragraph 32. I say that the public health benefits do not emphatically outweigh the costs as they had earlier in the past. It is my view that they did. But that was a much more overwhelming benefit at the beginning. But it is correct to say that early in the pandemic, public health controls, when the elimination strategy was in place, was the way to achieve overwhelmingly better social and economic outcomes, without dismissing that that was in the context of border controls. So that was a necessary limitation in order to achieve those outcomes later. Later, the interests do line up differently. On one, in the beginning, they're actually interdependent on each other. During that two-month period they are more closely balanced. But again, different from the rest of the world. We knew in two months' time the vaccine would be much more prevalently used.
NL	We would be approaching the 90%?
AV	Yeah, that's right. And therefore, unlike other jurisdictions where they were having to say, "We're in this balancing act of health versus the economy and reopening schools and other considerations, and we might be here for five years," but then it became two years, but then maybe 18 months. That was their trade-off for... The decision our Cabinet has, was how to get through two months from here to there at that point, right? At that point in November.

JK	So that is really a very short period of time, but I imagine incredibly high pressure to have to... You talked about all the factors that you kind of looked at. Is that almost on a daily basis during that two-month period? Am I right to assume that you were closely looking at all of those factors, in particular the vaccination rate?
AV	Yeah, that's correct. We participated in calls every day about those elements that changed every day. So case numbers, the state of the testing and contact tracing. During that period of the Delta outbreak, the availability of supports for people as well. And then that was how ministers got regular SITREPs on the progress of what was an emergency situation. And then the cabinet is less frequent, and tries to lift the considerations up from there as much as we can, to make what in those days counted as longer-term decisions.
JK	Yeah. Can I just ask about the vaccination range? We're getting these daily updates, were they quite granular, based on ethnicity and age groups and parts of the country?
AV	There's a daily reporting format, which would be high-level numbers. I am sorry, I can't describe that in more detail, but at points we would get more detailed breakdowns. So I do recall that, for example, at one point I requested a breakdown of different Asian ethnicities to understand what language media we should use, for example, to communicate about the vaccine. So that information, more granular information was available should you need it, but you didn't get it every day.
NL	And I guess the vaccine rate, it was going to go up, but it wasn't going to go up in a week from 70 to 90 was it?
AV	Correct.
NL	You would have an understanding of the rate at which it would-
AV	Yeah.
NL	Be expected to travel that you'd hoped for. And you might be a little bit more or a little bit less.
AV	Yeah. And then there would be special, for example, the Vaxathon, an event where we made a special focus of trying to mobilise community. And different measures were being deployed. Particularly, for example, outreach to Māori and Pacific communities, that you knew had to be done a particular way or many different ways, but by its nature, would just take longer as well.
LC	But just to round back to your question, Judy, so in the data that you were getting, you were getting it by area district health board, or you had a sense in those cabinet papers and those briefings of which parts of the country were lower or slower to take up vaccine?

AV	Yes. I'm sure I had an awareness of that at the time. I cannot remember which piece of paper it was on.
LC	In the cabinet papers you've got, you'll see those are there. It is quite granular, and it does provide that ethnicity background, which is to Dr. Verrall's point. That's why they were able to be discussing particular responses for Māori because they knew Māori vaccination uptake was lower.
AV	Mm-hmm.
NL	And would you agree that publication of that sort of detail was not much more limited than the 90% aim? You didn't release publicly where the problem patches were, as it were?
AV	Some days I'd go to the Herald to get that. But the Herald had it broken down by DHB.
LC	I'd urge you to look at the media coverage over that whole point because it's covered in great detail and an equally interesting part, community voices like for instance the John Tamihere's marae that were running the vaccination programme. They were talking in the media frequently during this period and giving details of exactly how many people were coming through their vaccination sites. So there was a lot of public information that was in the public domain.
NL	Were the DHBs broken down by ethnicity?
LC	You'd have to ask them.
NL	No, that were being published in The Herald?
LC	Go and have a look at the media coverage. I'd urge you to. I mean I can't remember and we haven't looked at it, but...
NL	No, that's all right.
LC	There was a lot of media coverage every day and these were all points of public interest that people wanted to know about so the media covered it.
NL	Should we understand from your comments that once elimination is not available anymore, the view that the best economic response is a strong health response comes under some pressure?
AV	It's more finely balanced.
NL	Now at your 32, I think we've looked at this. You say that there was a short period of time, October, November '21, where restrictions achieve public health benefits, but these do not emphatically outweigh the costs as they had earlier. You've said the decisions that

	were taken do not reflect a lack of priority for economic and social benefits of reopening, but uncertainty in the advice received at the time. What do you mean by uncertainty in that answer?
AV	I think the question we're being asked is why didn't we reopen, lift restrictions more quickly? As is clear from the cabinet papers, it was not clear from the evidence we had that that would be safe or manageable in terms of the health system and in two months, we anticipated we would be in a very different position, as we were.
NL	You had some uncertainty, but you could see that there was a period where there would be greater certainty?
AV	Yes, and the cabinet papers over these issues use, for example, modelling to specify a target and that is uncertain. The cabinet paper sets it out, doesn't it? It doesn't say everything will be rainbows after you hit 90%. It says that outbreaks will be smaller and less frequent.
NL	Were there any steps that you remember being taken in an attempt to improve certainty or was that just how it had to be?
AV	Can you explain what that could be?
NL	No, I'm asking if there's... I suppose there's a hindsight aspect to the question as well. Looking back now at that advice that you got that was uncertain, was there a way that more certainty could have been provided? Maybe not, I don't know. That's the question.
AV	Not significantly. I am sure many of my former colleagues are writing a lot of papers about the pros and cons of different models and that we should make sure in New Zealand we have infectious diseases modellers who are up to date on best practice with respect to that, but fundamentally models are not crystal balls. They are only as good as their assumptions and there will always be uncertainty around them.
NL	Is it fair to say that your 33, 34, 35, 36, 37, 38 are really a list of everything that you could possibly hope for advice on at those times?
AV	Can you help me understand how that question is connected? Are you saying it's connected to the last question?
NL	I had the question as to how could the advice have been improved, both thinking about it at the time and with hindsight.
AV	I see.
NL	I'm wondering whether you answer that for us in your lists.

AV	Yes, yes, please do all these things. This is my reflection on what a comprehensive surveillance system would look like that will be useful for the measles outbreak we're overdue for and the next pandemic. None of them remove judgement and advice and the need for modelling and that will always be difficult. The other thing in there is international epidemiology and awareness of what's happening in other countries is as useful as modelling really.
DK	I just had a matter I'm wondering if you can articulate for me. In 31, going back to 31, you talk about that after a certain point stringent lockdown conditions necessary for elimination aren't feasible, and I just wanted to know your articulation of what makes it not feasible after a certain point or why they can't be sustained. I guess it might be obvious, but I'd just like to hear.
AV	Lockdowns have impacts on people and there is no textbook on best practice around this, but do remember that lockdowns for elimination are more stringent than lockdowns when they're being used for mitigation. This is a general statement, right? The idea that if a European country was, I mean we know some of them had a level of lockdown for 18 months so it was clearly very different from what could be from whether level four could be sustained for long.
NL	Judy, what's your question?
JK	First is a comment I've written, most helpful, down on the side here when I was reading this. I just had a more general question for you as a medical professional about vaccination and vaccination rates. I thought that 90% vaccination rate was very high and that for some other diseases that we have vaccines for it's not as high as that. I'm assuming it's really quite difficult to get those last people in. I'm just wondering whether you had any reflections on just how difficult that 90% target would be if, for example, again thinking about a future pandemic, 90% just seems an extraordinarily high amount of effort, particularly for the last people.
AV	The vaccine rollout for the pandemic was different from routine vaccination use with which I was familiar as a medical practitioner. At times, we have been close to 95 for particular childhood vaccinations, but they happen at a certain age and point in time and are a fraction of the population. The task for vaccination for the pandemic was a very different one. Yes, it is a very high number in terms of… we knew it was a challenging mobilisation for the country and the government that had to run the system and the providers, but we also knew everyone was experiencing the pandemic. It is a very different task from no one's experiencing measles right now and we're sometimes struggling to make the case

	why it matters. I can see that perspective, but I also see that the demand for the vaccine that we felt as a government was very, very high.
JK	Your advice to me if I was making recommendations in a future pandemic is that you can achieve very high vaccination rates where you have this threat of a very serious disease. The question I wanted to ask you is that the way in which it's rolled out therefore becomes very, very important to achieving that rate. The rollout is crucial to that, the way it's done?
AV	Certainly how people are offered the vaccine influences their decisions. Over the course of the vaccination rollout, we had lots of different modalities just in this region. It was still a district health board at the time, had a specific focus for Pasifika and Māori. That campaign was called "Trusted Spaces, Familiar Faces" which is a very different approach from what many others are comfortable with, which is the more "just get this done, I'm happy to drive up and show you my arm and keep moving." In this region, they also had a specific way of reaching neurodiverse people. They booked a low stimulus environment so that people who were neurodiverse or their kids could come. I agree that how the offer is made is really important for uptake of the vaccine.
JK	Just one more question, my understanding is that we couldn't think about herd immunity with respect to this vaccine and we had waning immunity among people who'd got vaccinated first. Once you got past the border workers and the healthcare workers, it was the elderly and they were needing boosters. Was there ever a point where choices had to be made between getting those last few people into a vaccination programme or actually going back and giving a booster vaccine to the elderly or was there just heaps of vaccines around at that time and heaps of vaccinators?
AV	The literature on waning, that comes after this issue of the target.
JK	Ah okay. Waning in reality or the knowledge of waning?
AV	I'm aware of this being canvassed in the part one report, but it is not the information that was available at the time in 2021.
JK	Thank you.
NL	Can I just ask a question? I'm sorry, this is going back a little bit to the idea of stringent lockdowns necessary for elimination not being feasible after a certain point. Would it be in the plan for a future pandemic that there was a limit on how long you would pursue elimination and if you were unsuccessful, you moved to plan B or does it depend?
AV	It would depend, and perhaps the better way to phrase that would be, what is the acceptable time for a stringent lockdown? Because of course, we had the elimination

	strategy for 18 months and most of the time there was no… 18 months more. Most of the time it was lockdown.
NL	That's right. No, you're right, yeah.
AV	Look, there was no best practice available. Hundreds of countries have done different things so there may-
NL	Nobody's got to that point.
AV	Yeah. There may well be material internationally to allow something to be synthesized and of course, Oxford had that stringency index that allowed a comparison of those things, but I haven't seen that brought together in a single recommendation since then.
NL	Changing subject again, I'm sorry. You said at your 49 that lockdowns were never used to encourage vaccines.
DK	Sorry, I was just going to, before we jump, because that's a couple of questions away [inaudible 1:06:20] …talked about answers but I just had a couple more. This is now back at 5B, which is what information do we need to provide? As Judy said, I think it's a really helpful list there. I wondered if you've got at 34I, I think, measurements of knowledge, attitude, and behaviours and also measures of economic and social activity. Just taking the last one first, you've referred to some traffic movements by Google that were available during this pandemic and I just wondered if you had a comment about whether there was sufficient measures of that available at this one or whether it would be better to have more or what other kinds might be useful to you in decision-making.
AV	In this particular issue of let's say social understanding, the supports people need, I've made a point elsewhere about mental health or actually psychological stress. I am not going to hold myself out as an expert on the economic side, but clearly financial hardship comes to mind. I might leave it there because you'll have more expert advisors on the economic monitoring side.
DK	I guess is it fair to say that it would've been useful for you to have more of those measures than you did? Is that what I hear you saying?
AV	We had plenty of input from that and Treasury modelling as well, yes.
DK	Just on the measures of attitude and behaviours with respect to the virus and recommended actions, I just wondered if you could expand on that a little.
AV	The mainstay of the response is people's behaviours. So wearing a mask or whether they're socially distancing or not is an area where you should have some tracking. Let me

	give another example that'll make it more clear, a different pandemic. There's regular work on HIV control in New Zealand where sexual behaviours are surveyed. Were it not for that information, health officials would not know how to give advice about what behaviours are risky and so on. We can always assume that everyone is following the health advice, but in my experience those people aren't the ones I've worked with in infectious diseases clinic. Actual knowledge of people's behaviour is very important.
DK	Things like surveys and tracking of behaviour?
AV	Surveys of course with people's consent to participate in them, not tracking their behaviour in other ways.
DK	Right, thank you.
NL	We've got the same line highlighted there, Danielle. You've talked about, at 43, not being able to identify a point where the impacts were disproportionate. You've said instead "It is clear our diverse society has different views on the restrictions, which is unsurprising with health and social problems and economic opportunities that are inadequately distributed". Were there two or more than two views within the people that wanted the restrictions to remain, to protect, particularly Māori and Pasifika, and people that wanted their reward for being vaccinated and to get out and do things? Were there those two views or were there more?
AV	In a society like ours, of course more is the answer, but those were two very dominant views. I mean prevalent, let's say that.
NL	Was there another one equally prevalent?
AV	A lot of people were very trusting and would say, "We've got this far following the evidence, we should continue to do that." Even though they weren't personally part of the impacted communities, there was solidarity for the impacted communities.
NL	So you're saying that the support for the protection of the most vulnerable came from all parts of the country, not just from that vulnerable?
AV	Correct, and vice versa.
JK	I just had a comment to make here about your statement 42 and 43, it's the most cogent and clear statement-
AV	Thank you.
JK	That we have seen I think on the issue of complexity and of balance and of acknowledging the diversity of views.

AV	Sounds like someone who went through a very quick education in how New Zealand government works, doesn't it?
JK	That statement I think is something that I would like to, with your permission of course, in some future to be able to quote.
LC	That would be excellent. That paragraph and others in this written statement, and I think they are somewhat at odds with some of your questions, Nicolette, but the overwhelming point that Dr. Verrall makes is about the complexity and nuance. If you're looking for a simple formula, what to do next time, that doesn't exist. There's things you can put in place, which has been spelt out, but the point is that another government is going to have equally complex, difficult decisions to make that won't please everybody and can't please everyone. But equally, in the questions about who supports and who doesn't support, there's nothing about this that's binary or you are either here or you are there.
IS1	At some point though, and I'm sure you're familiar with this as a doctor, I mean you talk about the public's desire for certainty through this time and the need of the government to deliver on that. So you're faced with if a pandemic is, as you say, full of uncertainty both on the scientific front, but also in the weighing of the different priorities, how do you balance the public's need for certainty with the inherent uncertainty that you're faced with?
AV	That is a very good question and a very tough one. Transparency must be part of the answer, which… well actually probably we should take a step back. The biggest issue is trust, therefore trust in all sorts of things, not just the government as we frequently talk about, but in science and other elements of the response that was all part of the community. I think you have to be aware of the need for certainty, but the bigger risk is by leaning into, by addressing that, potentially creating a problem with respect to trust. So that is the tension that there is because of course, people would welcome a very simplistic answer at times and maybe giving it… leaning into that creates a risk that on the other side that is more harmful. That's why it's a hard question.
NL	Because we all want to understand everything, but the reality is that we can't. Is that too simplistic?
AV	Well, I think we all want to see, if I do X, Y, Z, I can get out of this hard situation that I am in and my business is in and my school or community is in. So that's very understandable and it's very challenging.
NL	All right, I've just got a couple more questions. You've said at your 49 that lockdowns would not and should not be the reason for imposing lockdowns. On the 2nd of November

	2021, you signed orders that put Upper Northland into alert level three and there was a review of that by cabinet a week later, which said that one of the objectives of the shift to alert level three was to increase testing and vaccination rates in Northland. However, while there's been a reassuring increase in testing, the rate of increase in vaccination has not been as high, noting the risk of onward transmission is low, it would not be proportionate or justifiable to keep Northland at alert level three only to increase vaccination rates. Is that-
LC	Have you got a copy of that to give us?
IS1	Yeah, it's provided in the list, it's the cabinet briefing in November 2021.
NL	Just to comment on your 49 where you said that lockdowns were never used to encourage vaccines. Do you have any comment on what happened on the 2nd of November when it does appear that one of the objectives of the shift to alert level three, so a shift down, was to increase testing and vaccination rates. Is there any relationship between those two?
AV	What's meant in paragraph 47 of this. Hang on, I'll just take a little bit longer.
NL	49, sorry.
AV	Yes, my question, 49. 47 on this.
NL	Yeah, 47 on the paper. I'm sorry.
AV	This is November and every movement is a movement down, including the one in this paper. 47 means that the shift to alert level three-
NL	I think possibly the way the question's phrased is a little bit unfair because in fact it was a movement down rather than the adding of something, wasn't it?
DK	I don't think so. I think in Northland it was a movement up there.
NL	Oh, it was a shift up.
DK	[inaudible 1:19:35]
AV	But the-
LC	No, it is down, isn't it?
IS1	It is down, yeah.
LC	Because paragraph 1 2 sets out what the paper's seeking to do and it's to move level three Northland to level two. So then it was moving it down.

DK	And that was this... This paper, sorry, is moving it down from three because it says you can't sustain it at level three just for this reason. But I think-
IS1	But they didn't go to four, did they?
DK	Yeah, exactly. I think the question is directed at that, saying that the previous move up to three, one of the objectives was, was -
AV	There's not a... The latter half of the paragraph is the answer there, isn't it? It says, "Noting the risk of onwards transmission is low it would not be proportionate or justifiable to keep Northland at alert level three only to increase vaccination rates."
JK	S 1, that's consistent with the answer in 40 and 49, as far as I can tell, yes.
AV	Yes.
DK	I guess one question, one way it could be phrased, is was it an additional objective if it was never the sole objective, if that's what you're saying? Was it sometimes an additional objective to encourage vaccination as it appears from that paragraph?
AV	It is harder to conduct vaccination at high alert levels, so no.
DK	Right. Thank you.
IS1	I think that this paragraph seemed at odds with a lot of the other things we've been reading through the briefings by suggesting that it was a factor and that's why, I guess, we wanted to understand that a little bit more.
AV	Right, thank you.
IS1	But, just can I clarify, what I'm hearing you say is that it wasn't a factor in the decision?
AV	No. Correct.
NL	So moving on to your paragraph 59, which is people craved certainty, there would've been no tolerance for us not stating a target, a vaccination target. Where was that? Where was your intel on that coming from?
AV	Well, multiple sources and including infectious diseases professionals. I spoke to the conduit for public voice, including the media. I did Zooms with stakeholders in my senior's portfolio over this period as well. That was an important source of public information for me personally.
NL	Okay. So looking to the future and thinking about what you say at 63, which there are two benefits of mandates to justify vaccine requirements, vaccine reduces transmission and protects the vaccinated person from illness. Looking to the future and with the benefit of what you've learned, in what circumstances do you think vaccination mandates should be

	used going forward? And we're particularly thinking of your, perhaps I'm sure, unique in cabinet, qualification about ethics, vaccine ethics.
AV	Well, I don't hold myself out as a medical ethicist. Let's start with the ethics perspective. People gave informed consent to the use of the vaccine. That is the fundamental of medical ethics in New Zealand and around the western world. With respect to the mandates, I've reiterated the findings of Phase One of the Royal Commission as they seemed reasonable to me. If I were to think about another pandemic, there's just so many different scenarios that could play out that it's hard to... It seems very hypothetical to try and make a firm rule that isn't there in paragraph 54 already.
DK	All right. Can I just come back to the wording of our question 14, which was looking for advice or modelling and advice specifically about scenarios including the use of vaccine pass and employer mandates. And I'm just wondering if you can recall any specific advice about how that was in the context of a highly vaccinated population.
AV	The tone of the advice was, additional vaccinations are helpful. The overall modelling was the modelling for the 90% target. It would be incredibly complex to put that into the specific things about mandates for particular occupations into the model that was developed by University of Auckland's Te Pūnaha Matatini. Maybe someone somewhere in the world has found a way now, but about mandates it was at a higher level and leveraging off the general modelling that had been done earlier.
DK	That's helpful, especially on the vaccination rates. I guess I'm also wondering if you can recall, this is a long time ago I know, but whether there was particular modelling or policy advice about the use of a vaccination requirement in particular settings and how much that would stop transmission.
AV	Different data sources fed into that. So descriptions of outbreaks and super-spreader events overseas and some of the experience we had had in New Zealand, tells you about the types of settings where vaccine passes may be useful or mandates. The contact, the relationship between the contact tracing capacity and the size of a venue - the bigger the venue you permit, the more contact tracing resources required to follow up on the super-spreader event. That was how data fed into those particular elements.
	[redacted]
DK	All right. I just wondered if you could talk a little bit more about your paragraph 71. This is about creating an enabling environment in order to help maintain productivity and giving those groups a mandate to focus on productivity in their guidance. I just wondered if you could expand on that paragraph.

AV	Yeah. My practice in New Zealand has not been infection control, but my specialist colleagues' at Wellington Hospital was. And when I trained in Singapore, my supervisor's was. They will talk routinely about the sorts of decisions they make to allow people to continue to get healthcare. They're hospital infection control practitioners. So the purpose is never for hospital infection control to... It always has to balance the people receiving care and the stopping of transmission within the hospital environment. In my view, there were times when these, probably later in the piece, issues around the time taken to change PPE, the practicalities of doing that make it hard to be as efficient in your hospital work as you were. Infection control leadership need a mandate to address those issues. They are often not very visible in a hospital leadership. They are easily forgotten and under-resourced the rest of the time. Having formal clinical governance structures that recognises their role in terms of patient and staff safety, but also in terms of supporting productivity I think will be a helpful thing. At times they can review guidelines and say, "This isn't working." The supplier of PPE has provided this gown that everyone sweats in and the face shields come down and they can no longer see the surgical field. Those sorts of practicalities, that you'll never imagine in advance, are the sort of things they need to be empowered to go out and fix.
DK	Okay. Not having thought this through enough, but just for a sense, I'm wondering if there's a lesson in that for also restrictions in lockdown settings. Restrictions introduced to other settings to prevent infection outbreaks and whether having a focus on productivity or someone with a mandate of focusing on productivity as well would be a useful thing to add into making those granular decisions about what alert level settings look like or whatever the future equivalent of that is.
AV	Yes, perhaps the framing is productivity isn't quite the most politic way of putting it across, but of course, and that's why the alert level settings with the application of them was frequently changed. For example, I know that the primary sector gave extensive feedback via MPI to how their meat works and so on have to be able to run because once the animals come, you can't change what you're doing without either loss of the product or animal welfare problems. So they get changed on a pragmatic... But you have to have people empowered to make pragmatic decisions who are still informed of the science about the disease transmission risk. But that was done. And I'm sure many businesses will tell you they didn't finish, that their practice by the end of the pandemic would've been more evolved than at the beginning.
	[Redacted]
NL	Thank you very much for coming.

AV	Thank you.
End of interview	