Submission to the Victorian COVID-19 inquiry

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I am an animal disease manager running my own consultancy business and have extensive (25 years) experience in controlling infectious diseases at the human-animal interface. My work in this area includes a major role in designing and implementing successful systems for preventing H5N1 avian influenza in Hong Kong SAR from 1997 onwards. I have extensive experience in emergency responses to animal disease outbreaks. I advise several international clients on emerging diseases and pandemic preparedness/ response. I also work as a consultant on control of transboundary diseases for the United Nations Food and Agriculture Organisation.

I have been extremely frustrated by the events of the past 6 months. There have been multiple wasted opportunities and fundamental flaws in the control policy that have resulted in the increase in cases in July 2020. All of these were predictable and forecast correctly, based on an assessment of the measures introduced.

It is too late to overturn the damage that has been done and we will probably be relying on suppression until such time as a vaccine becomes available. It did not have to be this way. However, now that the virus is well established in the community, we will need to deploy different methods to those used so far.

I ask that the following four areas should be considered by the enquiry:

i) The role of the national policy of suppression and premature reopening in the failures in the quarantine and case tracing systems.
ii) Measures that should have been taken before arrival and on arrival of those returning to Australia, rather than just focussing on post-arrival quarantine measures. The risk of transmission to the community could have been reduced considerably if appropriate pre-arrival and arrival quarantine measures had been adopted along with better post-arrival measures.
iii) That greater use of expertise outside of the human health system should have been and should now be used for this and any future pandemic diseases
iv) The role now, and in the future, of high frequency testing for those working in high risk workplaces including aged care, health care, prisons, meat processing establishments and quarantine centres. Eventually these should be deployed more widely in the community.

Each of these is discussed in more detail below.

i) Suppression vs elimination

The seeds of failure for the tracing and quarantine systems were sown when Australia opted for a suppression policy, rather than an elimination policy, in late March. The former is about risk reduction whereas the latter requires much greater attention to detail and introduction of systems capable of rapid detection, tracing, and isolation of all new cases. Because tracing and quarantine systems were not resourced appropriately it was not possible to detect and respond rapidly to all new cases or to prevent transfer of virus from sites used for post-arrival quarantine to the community.

Was elimination feasible? In February 2020 I was advising my international clients that there was little hope of containing COVID-19 until a vaccine was developed. At that time, I expected the virus to follow a pattern like that observed with the 2009 influenza pandemic. However, by mid-March it was apparent that, not only could this disease be contained, it was possible to eliminate the virus from places where import of new cases could be prevented. This is particularly valuable for island nations like Australia. This conclusion was reached after examining available evidence regarding this disease, including the way it behaves and the effects of control measures in mainland China, Hong Kong SAR, Taiwan, and Singapore (among others). Eminent epidemiologists in New Zealand came to the same conclusion and were able to convince their government of the benefits and potential for success of elimination. They embarked on this path on March 25. New Zealand demonstrated it was possible by achieving elimination of local transmission by early June, although their gains were almost derailed by errors in managing quarantine of returning residents. Taiwan with a similar population to Australia, was also successful.

I wrote the following to The Age on March 16 and sent similar information to veterinary colleagues in the Department of Agriculture, Water and the Environment in Canberra.

We have the opportunity right now to have a 3 to 4 week "total shutdown" similar to that in Chinese cities other than Wuhan that has the capacity to end the outbreak in Australia. Tie this in with the Easter holidays (much as China used the Lunar New year holiday) and we could not only prevent the rise in cases but eliminate transmission of the virus. Look at what happened in Guangdong and other Chinese provinces. A short, sharp shock coupled with a ban on inward travel and both Australia and New Zealand could be virus-free or at least at the point where all remaining cases are identified and traced and contained, as is occurring currently in Singapore and Hong Kong. This will prevent the exponential wave of cases and we will not get 50,000 to 150,000 deaths. Why is this not even being considered when there is evidence from elsewhere that this approach works? It should be. I did not expect the measures employed in China to work. They did. Get Bruce Aylward from WHO, the leader of the WHO investigation team to China, to help you design it - he has already seen first-hand the successes in China and has pointed out that there is not a large number of "hidden" silent cases. This is also backed up by current data from Singapore. Do this and we could get our lives and much of our local business back to normal within a month. The alternative is a long drawn out epidemic and untold damage to the economy. Some will argue we will get reinfected as soon as the measures cease. This does not have to happen if you maintain tight control of borders as is happening in China at present.

Unfortunately, the national policy was set as suppression and we did not maintain tight control of borders. Some less populated states and territories achieved elimination, but it was always going to be much harder for the more populous eastern states to achieve this unless first-class testing, tracing, isolation, and quarantine systems were in place.

Elimination requires much greater attention to detail than suppression. It requires a statement of intent and it requires full buy-in from the community. It might still be possible to achieve but will be hampered still by capacity issues and will require a much more responsive system for case detection and isolation to bring current case numbers down. Any gains from elimination of community transmission will be lost if quarantine systems are poorly designed and implemented.

It was evident that when level 3 measures were relaxed community transmission had not been eliminated. This set the scene for the spike in cases in Victoria in July.

ii) The need to consider pre-entry, entry and post entry measures when assessing quarantine systems

The risk of virus gaining entry to the community is best managed using a combination of pre-entry, arrival, and post-entry measures. Other places have implemented better systems than Australia. We need to re-examine what other nations/places are doing or have done and adapt these to Australia.

Pre-entry measures

We should not have allowed entry of people from places where case numbers were growing rapidly or data on case numbers was unreliable. I recognise there were many Australian citizens stranded abroad and the need to put in place systems to get them home. However, before doing so, we needed better systems of pre-travel quarantine and testing. By April 2020, we should not have been accepting passengers from South Asia or the Americas where cases were accelerating unless they had a high probability of being free from infection, through pre-departure isolation and testing. Also, the number of new arrivals should have been limited to match the supply of appropriate quarantine facilities and capacity to manage them effectively.

Among the measures that could have been introduced are pre-movement testing, including test (PCR) and isolation 48 hours before boarding and even a rapid antigen test just prior to check in. Anyone found to be positive should not be allowed to board.

Measures on arrival

All passengers on arrival should have been tested for virus and held in a suitable facility pending test results. Systems for doing so have been introduced in various places in Asia including Taiwan, Hong Kong SAR, and mainland China. A negative test does not rule out the possibility that a person was incubating the virus. A positive test would have allowed separation of known infected people. As will be discussed under point iv) below, systems could be introduced that provide results within 30 minutes that will detect those shedding large amounts of virus. All arriving passengers should be tested using one of these rapid tests as well as the gold standard RT-PCR. Those who test positive on the rapid test would be isolated immediately, others would be allowed to move to quarantine centres after a negative test by PCR or equivalent.

Post-entry measures

Had I been shown information on the way quarantine hotels were to be managed I would have advised an immediate rethink of policy. If going to the trouble of eliminating/containing a virus then you must have systems in place to prevent its re-entry into the community. Occasional cases will still arrive in Australia even if pre-entry and entry quarantine testing is negative. Appropriate systems are needed to stop these from seeding virus into the community. Hotels should only have been used if appropriately managed with fail-safe systems in place to prevent transfer of virus to the community.

Why, for example, was there a change away from tightly controlled quarantine for those from the Diamond Princess to the less desirable system of hotel quarantine?

iii) The need to tap expertise from outside of governments health systems

There is a large pool of expertise in disease control and elimination, both in the human and animal health sectors; much of this is not located in existing government departments or Universities. The veterinary profession, with multiple successes in eliminating viruses, was not employed well in assisting in the control of this disease.

I am aware of various offers of support that were made to government that were not acted on, including one that I proposed in an email to the Premier on March 20

I am writing this as someone who has spent the past 25 years successfully controlling and eliminating severe emerging infectious diseases at the human-animal interface in Australia and Asia.

I am watching the response to COVID-19 wondering why the government has so far rejected the option of eliminating the virus from Australia and New Zealand and then keeping it out through sustained travel bans. "Flattening the curve" will result in sustained economic damage for over 6 months but my assessment is that Australia could eliminate the virus in a 6 week period or less based on a short sharp lock down, to break transmission chains, followed by a short period of intense case finding to mop up remaining cases. We would then be free to resume normal services and even restore traffic between Australia and New Zealand. We could bring forward the Easter break to achieve this.

There would be many details to work through, but these are the sorts of issues we confront all the time in the animal health world. I am more than happy to expand on this with you and your CMO or those in Canberra at any time by phone, skype or email. The longer we wait to do this the greater the likelihood of failure.

I did not receive a reply from the Premier's office other than an acknowledgement of the email. I can understand why this happened given the national policy was set as suppression (wrongly). I had nothing to gain from this offer other than to share experiences that might have been of value (given I was prepared to offer *pro bono* support to ensure appropriate policies were adopted and implemented).

Methods need to be found to allow comment on policies prior to implementation, to point out potential pitfalls and dangers and suggestions on how these can be improved. Many of us have been following this outbreak as closely as those in government and formed a different view on the appropriate measures to take. Some of us, not involved in day-to-day operations, have the luxury of time to think and do the necessary research. There was considerable knowledge of events outside of Victoria/Australia that could have been tapped. For example, meat processing plants were recognised as being important sites of virus transmission between workers before the first case associated with Cedar Meats. Yet this information was not acted on until too late. If a case occurred in someone who worked in a meat processing facility this should have resulted in a "red flag" even if interviews indicated he had not been at work recently.

One of the key aspects of any disease control programme is to identify vulnerabilities and many of these became apparent during March and April as more experiences were gained both in Australia and overseas. We know that seasonal effects for some diseases relate to increases in certain behaviours, including religious and other festivals (e.g. lunar new year). We know that there are many people in the community who cannot afford to miss out on work given their lack of savings and lack of sick leave and who work at multiple sites. We needed to be able to target this population. The best way to do this is at workplaces where there is a high proportion of these workers, using regular tests for virus detection.

iv) Use of frequent routine testing for those in high risk workplaces (aged care, meat works, quarantine centres, prisons, and health care settings)

No one should be allowed to enter a high-risk workplace in Victoria unless they have been tested negative within the previous 48 hours. This is feasible if systems are introduced to provide test

results on saliva samples within 8 hours of sample collection. This means someone who supplies a sample at the end of a shift would be able to restart work prior to the next shift. Testing can be done on samples of saliva avoiding the need to collect invasive deep nasal swabs. Pooling of samples when testing would cut down the total number of tests performed. Residents of aged care facilities should also be tested every 48 hours to ensure they are not infected.

We need to be applying these tests broadly, especially in high risk environments such as health care, aged care, quarantine and isolation centres, prisons, and meat processing/packing plants. No one should be allowed to enter these sites without being tested negative in the past 48 hours.

Rapid turnaround of tests allows better case tracing and isolation and will assist in reducing community spread of the virus.

We should be aiming to expand this testing to other community settings such as schools and building sites. Capacity to do more testing is available in, for example, university laboratories. There is an under-utilised pool of science undergraduates and graduates who could be deployed to do this work.

We also need to make greater use of rapid antigen testing. At present, none of these tests is registered for use in Australia by the Therapeutic Goods Administration. We need them now. They are not as sensitive as the gold standard tests used currently in laboratories, but they are sufficiently sensitive to detect those who pose the greatest threat to vulnerable populations and provide results in real time. These would be ideal as part of the screening process for arrivals and as triage tool in hospitals for all new patients prior to admission.

We may have to live with this virus for another 12 months or even longer before an effective vaccine is available. Widespread use of testing will allow us to open up with less fear of relapses and the need for additional lockdowns.

If you require additional information on any of these or related issues, please feel free to contact me during the enquiry.