Good Ancestors Policy

Phase 3 Consultation Submission – The importance of zoonotic risk

Good Ancestors Policy is an Australian charity dedicated to reducing catastrophic and existential risk and improving the long-term future. We care about today's Australians and we care about future generations. We believe that Australians and our leaders want to take meaningful action to combat the biggest challenges Australia and the world are facing.

Introduction and key issues

The draft Victoria Biosecurity Strategy states that it values human health and is inspired by a "One Health" approach. The draft acknowledges that:

> *At least 75% of the new human infectious diseases that have emerged since the 1970s have originated from animal diseases, otherwise known as zoonotic diseases.*

Despite recognising, valuing and quantifying the significant threat to human health, the draft Strategy does little to address it. While Australia's geographic

isolation allows an insulative approach to biosecurity that holds risks at arm's length, Australia itself has a complex ecosystem and an obligation to plan for and prevent the emergence of novel strains of pathogens within our jurisdiction. This is a gap, and the final Strategy should address it. Indeed, of all the actors in the "One Health" ecosystem, agencies responsible for agriculture and biosecurity may have the single biggest role to play in preventing pandemics. The final Strategy should not avoid that responsibility.

This submission proposes **three key changes** to Victoria's draft Biosecurity Strategy which intend to ensure Agriculture Victoria does its part in the prevention, preparedness and response of zoonotic disease.

1. Acknowledge that **climate change, trade and travel, and changing land use exacerbate zoonotic disease spillover**. This should include empowering researchers to understand these factors in the Victorian context, and what that means for actions within the Strategy.

2. Acknowledge that **Agriculture Victoria has an important role in preventing, preparing for and responding to zoonotic disease** from livestock and wildlife – regardless of whether it is imported or has arisen domestically. This should include implementing policies to reduce zoonotic risk and working to support veterinarians, researchers and the community to rapidly identify and communicate possible zoonotic spillover in Victoria.

3. Acknowledge that **the intersection between human and animal health is critical to positive outcomes and challenging to existing governance structures** - including between health and agriculture and state and federal levels. A key implication of the commitment to partnership ("Strategic Goal #1") is that special effort is required to ensure zoonotic risk does not "fall through the cracks". This is also an opportunity for Victoria to demonstrate to the world what every jurisdiction should be doing to play its part in global zoonotic risk reduction.

Growing risk of zoonotic disease

Research tells us that the likelihood of zoonotic pandemics is greater than we think and on the rise.[1] Delivering an address at the World Health Assembly on 21 May 2023, the Director-General of the World Health Organization, Dr Tedros Adhanom Ghebreyesus warned:[2]

> *The frequency and intensity of health emergencies is growing, with evolving pathogen threats increasing due to population growth, environmental degradation, and many other pressures. Even as the risks increase, the gaps and vulnerabilities in the world's emergency response capabilities were cruelly exposed by the COVID-19 pandemic. COVID-19 will not be our last major health emergency. Disease outbreaks are a fact of life. We must be prepared.*

The draft Strategy is right to highlight that 75% of new human infectious diseases originate from animals. The draft Strategy is also right, in Strategic Goal #1, to establish a vision for Victoria's biosecurity system to manage animals, plants and diseases in a way that protects human health. However, the draft is inadequate in the way that it connects these issues. The document should deliver on its framing and on its values by tracking a focus on zoonotic spillover through all relevant priority actions. The document needs to do more than acknowledge the risk – it needs to embody real action.

Acknowledging zoonotic risk and the importance of human health, but then neglecting it in bulk of the document, damages the coherence of the draft Strategy as a whole. To provide a specific example, Chapter 4 acknowledges that biosecurity risks are intensifying and putting pressure on "the system". This is true, but the draft Strategy is wrong to read "the system" as being limited to "Victorian agriculture".

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[1] Marani, M., Katul, G., Pan, W. & Parolari, A., 2021. Intensity and frequency of extreme novel epidemics. Proceedings of the National Academy of Sciences of the United States of America, 118(35), pp. 1-4.

[2] World Health Organization, 2023. WHO Director-General's opening remarks at the WHA side event on Health Emergency Workforce and the Need for a Global Health Emergency Corps – 21 May 2023. [Online] Available at: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-wha-side-event-onhealth-emergency-workforce-and-the-need-for-a-global-health-emergency-corps---21- may-2023 [Accessed May 2023].

Anthropogenic **land use** change is a known driver of disease spillover from animals to humans.[3] A salient example of this is urbanisation causing both nutritional stress and the fragmentation of flying fox habitat, this can be attributed to the spillover of Hendra virus into horses and then humans in Queensland.[4]

Climate change will exacerbate the spillover risks from anthropogenic land use. At least 10,000 virus species have the ability to infect humans but, at present, the vast majority are circulating silently in wild mammals. Changes in climate and land use will lead to opportunities for viral sharing among previously geographically isolated species of wildlife. By 2070, it is expected that there will be 300,000 novel animal pair encounters globally. In other words, climate change will double the opportunities in which one of the 10,000 viruses in wildlife could leap between species.[5]

A side effect of **travel and trade** is the spread of disease. There are concerns that anthropogenic activities such as the movement of live animals through legal and illegal trade may propagate spillover risks at each point. Coronaviruses carried by pangolins confiscated from the illegal wildlife trade in Vietnam have been found to originate in Yunnan and Guangxi, China. These are the provinces in which bats have been found to carry SARS-related coronavirus most similar to SARS-CoV-2.[6]

This leads to three observations:

1. There are things that can be done to manage zoonotic risk across many priority actions in the draft Strategy. Indeed, of all actors in the "One Health" ecosystem, agencies responsible for agriculture and biosecurity have the single biggest role to play in preventing pandemics. In this context, it is alarming how little attention the priority actions give to zoonotic risk. Some

[3] Raina K Plowright and others, 'Land Use-Induced Spillover: A Call to Action to Safeguard Environmental, Animal, and Human Health' (2021) 5 The Lancet Planetary Health e237.
[4] Raina K Plowright and others, 'Urban Habituation, Ecological Connectivity and Epidemic Dampening: The Emergence of Hendra Virus from Flying Foxes (Pteropus Spp.)' (2011) 278 Proceedings of the Royal Society B: Biological Sciences 3703.
[5] Colin J Carlson and others, 'Climate Change Increases Cross-Species Viral Transmission Risk' (2022) 607 Nature 555.
[6] Yusuf Amuda Tajudeen and others, 'The Need to Prioritize Prevention of Viral Spillover in the Anthropopandemicene: A Message to Global Health Researchers and Policymakers' (2022) 13 Challenges 35.

specific proposals are detailed below, including managing interactions between livestock and wildlife, appropriate use of PPE, enhanced surveillance for emerging diseases, robust planning that takes account of the possibility of novel diseases emerging in Victoria, and a research agenda that prioritises ways of understanding and addressing zoonotic risk. **The draft Strategy should consider each priority action as an opportunity to deliver on its assessment of zoonotic risk and its commitment to human health.**

2. After priority actions are uplifted to better address zoonotic risk, **the Strategy should assess the residual risk and communicate that risk clearly to relevant stakeholders**. Specifically, if drivers like changing land use increase the risk of zoonotic disease beyond what priority actions in Strategy can effectively mitigate, the Strategy should include communicating the details of that residual risk to land use planners, emergency managers and others in the "One Health" ecosystem.

3. Taking ownership of zoonotic risk in Victoria is an opportunity for local and global leadership. **We want to live in a world where each jurisdiction takes its responsibilities seriously - collectively ensuring global risk is managed.** What do Victoria and Victorians wish Hubei Province had done to prevent, prepare for and control COVID-19? Victoria should be ready to do those things.

Agriculture Victoria has an important role in preventing and responding to zoonotic disease

Actions can be taken throughout the draft Strategy to reduce zoonotic risk. Agencies responsible for agriculture and biosecurity have the single biggest role to play in preventing pandemics, and each priority action is an opportunity to consider zoonotic risk reduction. Below are a select number of specific actions that should be happening already, can begin now, or could be enhanced over the life of the Strategy.

Veterinarians and producers working with livestock are the front line of zoonotic spillover in the same way that healthcare providers are the front line of infectious disease. As the "eyes on the ground", their awareness of zoonotic risks, and the actions they take, are an essential element of risk management.

Prevention is always better than a cure, and the earliest moments of intervention typically pay the largest dividends by reducing the need for costly relief and recovery initiatives.

For immediate action

"Strategic Goal #2" (prevention), and "Priority Action 4", (driving behaviour change to manage key biosecurity risks), are essential actions that should be applied to zoonotic risk reduction.

To begin implementation of "Priority Action 4" in the context of zoonotic risk, Victoria should conduct a survey of knowledge and behaviours related to zoonotic disease. To illustrate the concern, in an assessment of Irish farmers' knowledge of the risk of spread of infection from animals to humans, more than half thought it was impossible to get an infection from sick poultry and over 90% thought it was impossible to get an infection from a seemingly healthy animal.[7] If Victorian farmers have a similar knowledge level about zoonotic risk, it may be that health behaviours relating to PPE use, hand washing and techniques to prevent the spread of disease among flocks or herds are also lacking.

Conducting such a survey would allow Agriculture Victoria to efficiently invest its resources in behaviour change and target community engagement where it is most impactful. COVID-19 may have created an opportunity to effectively explain how certain behaviours are important to keep individuals and their families safe, but are also important to their community and ultimately the world.

[7] MM Mahon and others, 'An Assessment of Irish Farmers' Knowledge of the Risk of Spread of Infection from Animals to Humans and Their Transmission Prevention Practices' (2017) 145 Epidemiology & Infection 2424.

Start now

Agriculture Victoria should investigate best practices for the separation of livestock from wildlife to prevent the species-species contact required for spillover. Studies have found that when free-range turkeys were prevented from interacting with wild birds, influenza virus incidences dropped, suggesting wild-animal interactions are a significant source of infections.[8]

Policies should seek to reduce paths for virus transmission from wild animals into livestock, and from livestock into wild animals. Simple and cost-effective interventions – like appropriate fencing, vaccination and/or zoning – may significantly reduce the chance that viruses in wild animals could transmit into livestock and subsequently to humans.[9] Equally, poorly considered ventilation systems in intensive farming may be expelling material, including pathogens, into the environment, increasing transmission from livestock to wild and domestic animals.[10]

Both of these paths could be mitigated using cost effective practices that are available today, and both could reduce zoonotic risk.

Enhance over the life of the Strategy

In "Priority Action 20", the draft Strategy commits to investing in science and tools to better manage biosecurity risks. Zoonotic risk reduction should be specifically factored into this action. Agriculture Victoria should investigate supporting producers to access rapid portable diagnostic tests for zoonotic diseases over the next decade. This could look like using rapid antigen tests[11] or LAMP tests like those developed for Phylloxera by Agriculture Victoria[12] to initially test sick animals. A positive diagnosis could inform producers to preliminarily isolate their animals

[8] 'Emerging Human Infectious Diseases and the Links to Global Food Production | Nature Sustainability' <https://www.nature.com/articles/s41893-019-0293-3> accessed 14 March 2023.
[9] Christian Gortazar and others, 'The Wild Side of Disease Control at the Wildlife-Livestock-Human Interface: A Review' (2015) 1 Frontiers in Veterinary Science <https://www.frontiersin.org/articles/10.3389/fvets.2014.00027> accessed 16 August 2023.
[10] Bryony A Jones and others, 'Zoonosis Emergence Linked to Agricultural Intensification and Environmental Change' (2013) 110 Proceedings of the National Academy of Sciences 8399.
[11] Leo Loth and others, 'Evaluation of Two Avian Influenza Type A Rapid Antigen Tests under Indonesian Field Conditions' (2008) 20 Journal of Veterinary Diagnostic Investigation 642.
[12] Precincts and Regions Department of Jobs, 'New Portable Genetic Test for Phylloxera - Agriculture' (*Agriculture Victoria*, 22 June 2020) <https://agriculture.vic.gov.au/about/media-centre/media-releases/new-portable-genetic-test-for-phylloxera> accessed 16 August 2023.

days earlier than it would take for a veterinarian and lab results to come through. This could make a difference in preventing spread to neighbouring animals or farms and monitoring if there is spillover into human workers. If rapid tests for common diseases all yield false results, this may indicate a novel pathogen or unknown strains and warrant the genome sequencing resources of Agriculture Victoria Research.

The intersection between human and animal health

Australia has a history of using a narrow definition of "biosecurity", often only evoking preventative measures targeting pests. This can be at odds with global usage that is more inclined to take a holistic approach, including a focus on human health, microbial resistance, pandemic diseases and risks like bioterrorism and laboratory biosafety.[13]

The draft Strategy continues the important work of gradually expanding Australia's historically narrow conception of biosecurity, including by referencing a "One Health" approach and the need to undertake joint planning, training and exercising with a wider network of organisations (see "Strategic Goal #3" and "Priority Actions 11-12").

The Strategy could improve further by explicitly acknowledging the tensions involved in the different conceptions of biosecurity and the different responsibilities and priorities that emerge at the intersection of human and animal health. Specifically, the human-animal intersection is:

- critical to positive outcomes for all participants in a "One Health" ecosystem, and
- challenges existing governance structures and divisions of responsibility - including between health and agriculture and state and federal levels.

As observed above, agencies responsible for agriculture may be best placed to reduce the risk of zoonotic disease. This means they have a particularly important function, not only in taking specific actions to reduce the risk, but also in

[13] Gregory D Koblentz, 'Biosecurity Reconsidered: Calibrating Biological Threats and Responses' (2010) 34 International Security 96.

cooperating with their peers in other jurisdictions to similarly reduce risk nationally and globally.

Actively coordinate with peers in "One Health" system

The priority actions of "Strategic Goal #1" (Partnerships) should explicitly reference a "One Health" approach suffusing actions across the rest of the Strategy. "One Health" inspired strategies, like the National Antimicrobial Resistance Strategy and the NSW Biosecurity and Food Safety Strategy 2022-2030, have been accurately identified by the draft Strategy as doing this well.

The Strategy should aim to normalise individual participants' understanding of their role in a state, national and global health ecosystem. For instance, Victorians that work with livestock should be provided information about zoonoses and empowered to protect themselves and the broader community. Victorian veterinarians may have an important role to play in distributing this knowledge and practice at a local level.

Similarly, experts in agriculture should maintain a dialogue with experts more focused on human health, including the proposed Commonwealth CDC. There will be many instances where working together effectively requires more clarity and specificity about who is doing (and is not doing) what and with what resources. These include planning for emergency response, coordinating action across borders and different land tenure types, and determining how to allocate investment in actions that protect multiple values.

Where spheres of responsibility overlap, it is appropriate that each agency understands the overlap and holds their partners to account for discharging their obligations as part of a coherent national approach. Ultimately, it is better to understand and exercise an overlap than allow a gap to develop.

Biosecurity is inside-out, not just outside-in

Australians' conceptions of emergency management often involves Australian authorities observing risks offshore and thinking about how to prevent them from getting here. This can be particularly the case with health in general and biosecurity in particular. Australians expect that other jurisdictions are working to

reduce risk, detect infectious diseases, contain outbreaks, and share information to empower our response.

Victoria and Australia should show national and global leadership by modelling the behaviour that we are right to expect of others. Victoria is physically larger than Hubei Province, where COVID-19 was first detected, and rightly boasts about its biodiversity (including bat population), untouched wilderness and significant agricultural sector. A novel pathogen could emerge in Victoria, and Victoria should have a clear and well-exercised plan for that possibility, including:

- Reducing the chance of novel disease emerging,
- Rapidly detecting and investigating any emerging risks,
- Containing outbreaks before they spread, including tracing where necessary, and
- Clearly communicating with the community and globe and empowering the responses of others.

Once Victoria has such a plan, it can use that expertise to cooperate with neighbouring jurisdictions and the Commonwealth to ensure others have equally mature and well-exercised plans. In turn, this creates a footing for national, regional and global expectations that each jurisdiction is doing its part to prevent pandemics. Overall, an essential way to keep Victoria and Victorians safe from outside threats is to show others that we are working hard to keep them safe from threats that might emerge within our control.