Leveraging lessons from COVID-19 in Australia to transform pandemic preparedness

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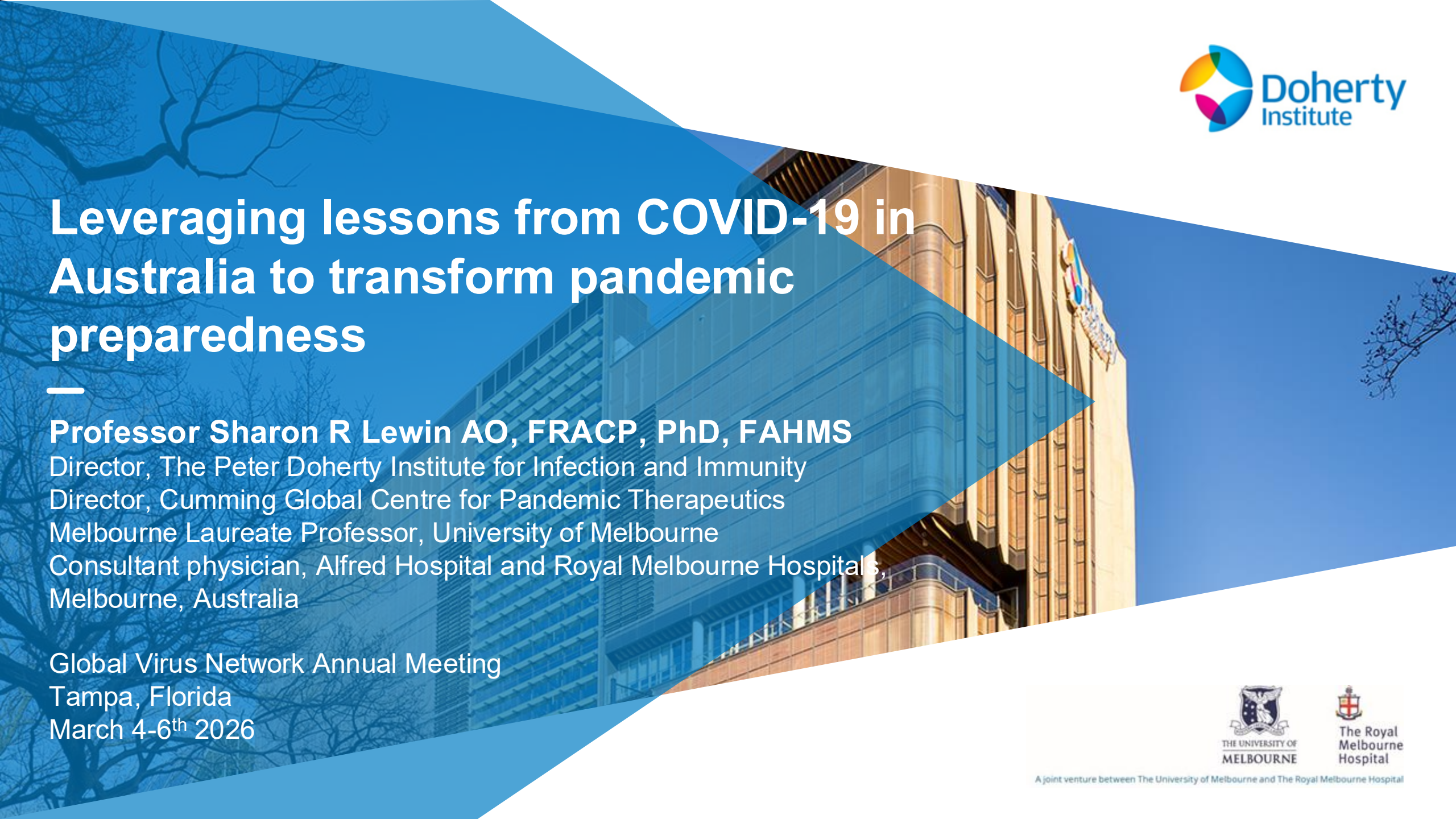
Global Virus Network Annual Meeting
Tampa, Florida
March 4-6th 2026



Doherty Institute

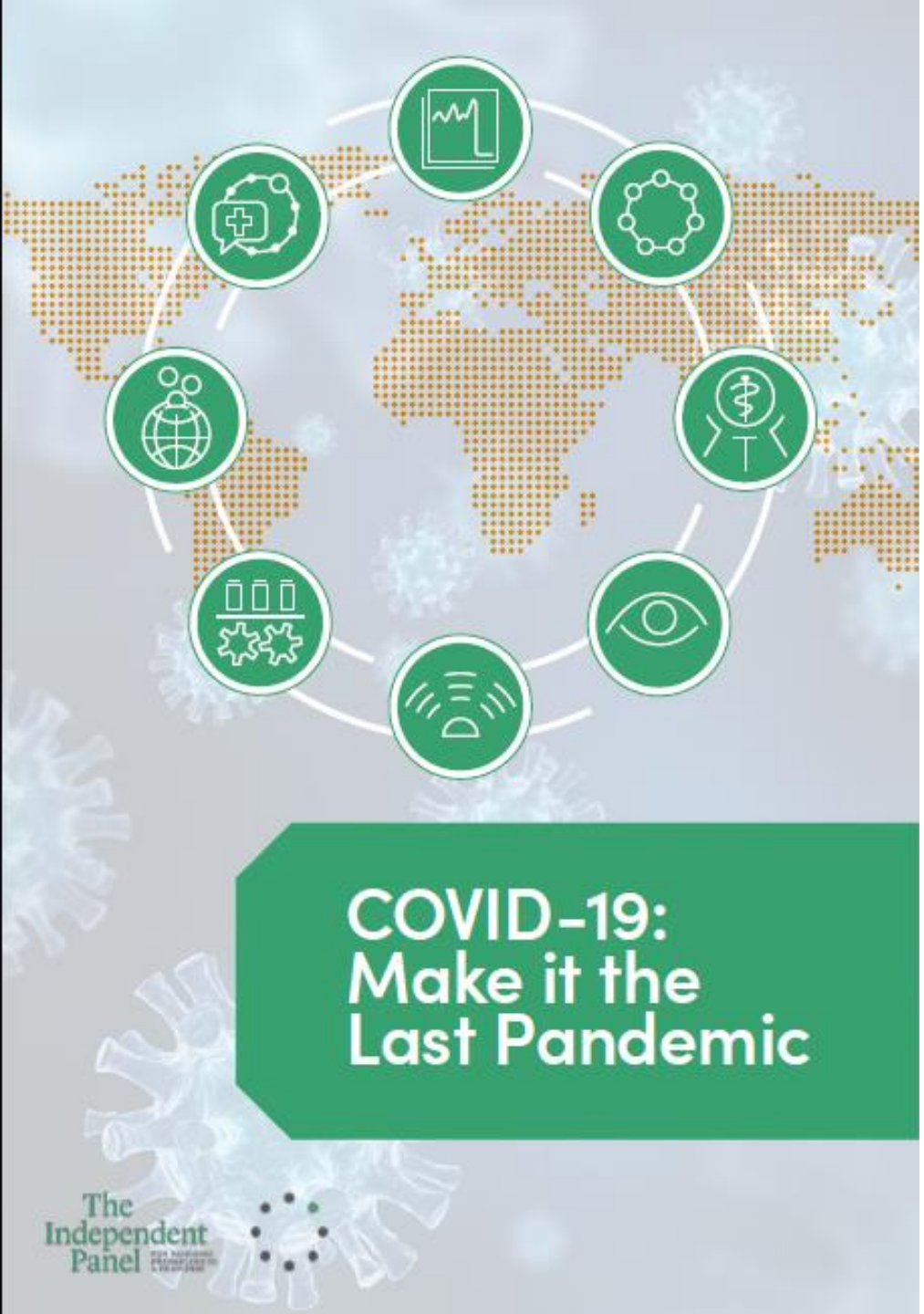
THE UNIVERSITY OF MELBOURNE

The Royal Melbourne Hospital

A joint venture between The University of Melbourne and The Royal Melbourne Hospital

Outline

- The importance of an early response: the Australian experience
- What Australia didn’t do so well
- Pandemic preparedness in Australia today
- Meeting the challenge for better pandemic therapeutics

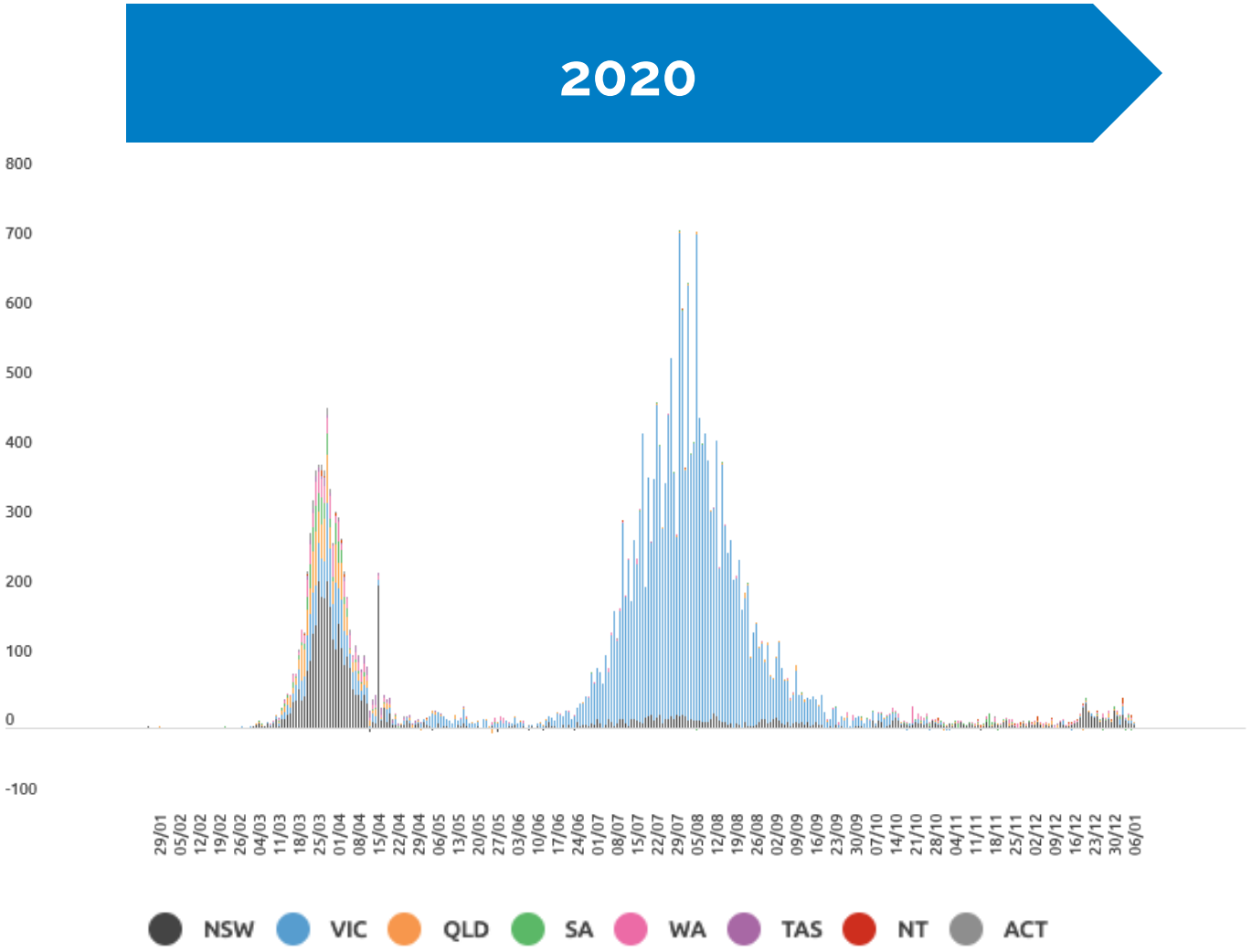


"It is glaringly obvious to the Panel that February 2020 was a lost month"

"Successful countries were proactive, unsuccessful ones denied and delayed"

Her Excellency Ellen Johnson Sirleaf
and
The Right Honourable Helen Clark
12th May 2021

An early rapid response resulted in elimination….twice



Australia

- Rapid, early and decisive response
- Public health prioritised
- Border closures – externally and internally
- High rates of testing
- Policy informed by modelling
- COVID-19 payments

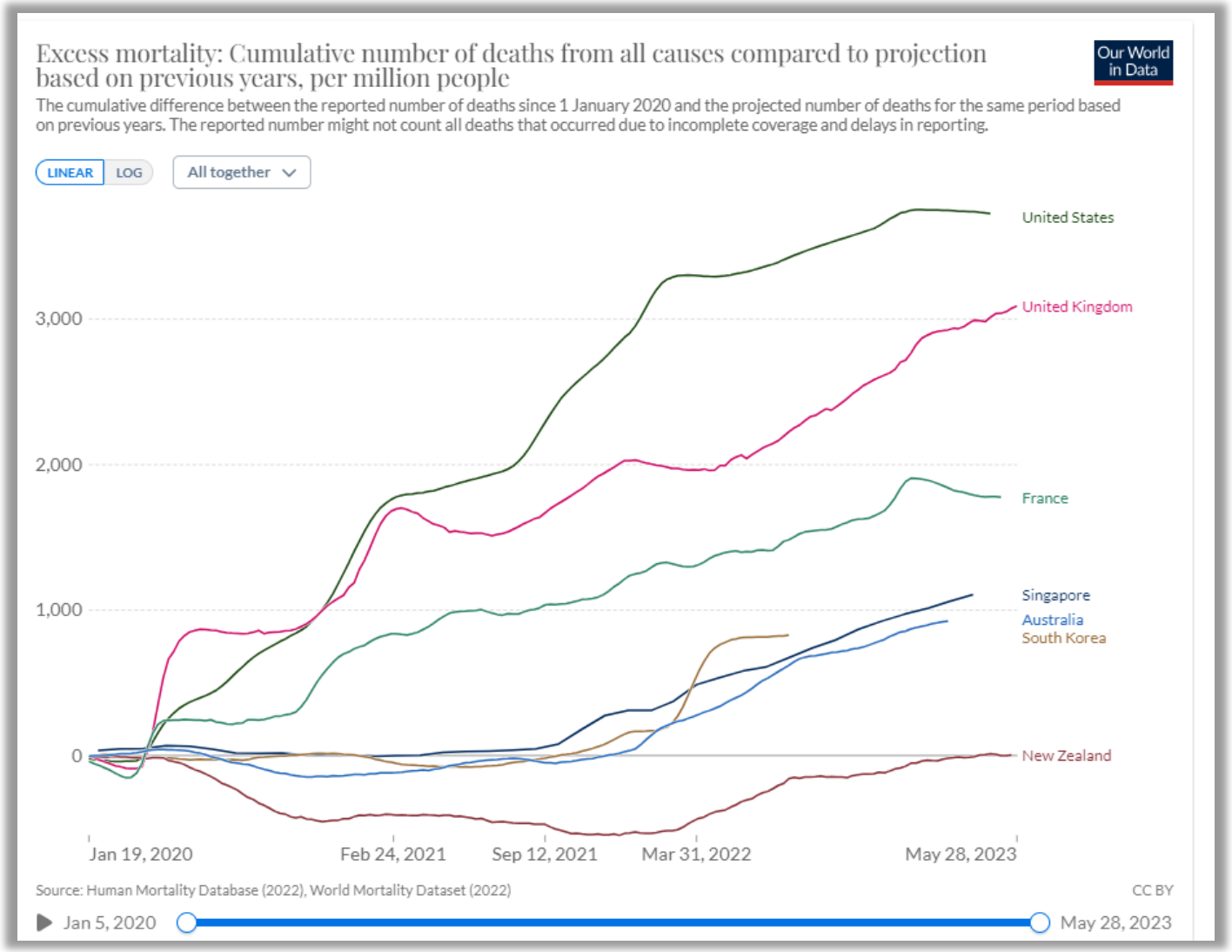
Victoria

- Long and strict lockdown
- Mandated universal masks
- Overnight curfew
- Some but not sufficient social supports
- Genomic sequencing for epidemiology
- Opened up slowly: zero cases for >28 days
- Initial social cohesion frayed over time

www.covid19data.com.au

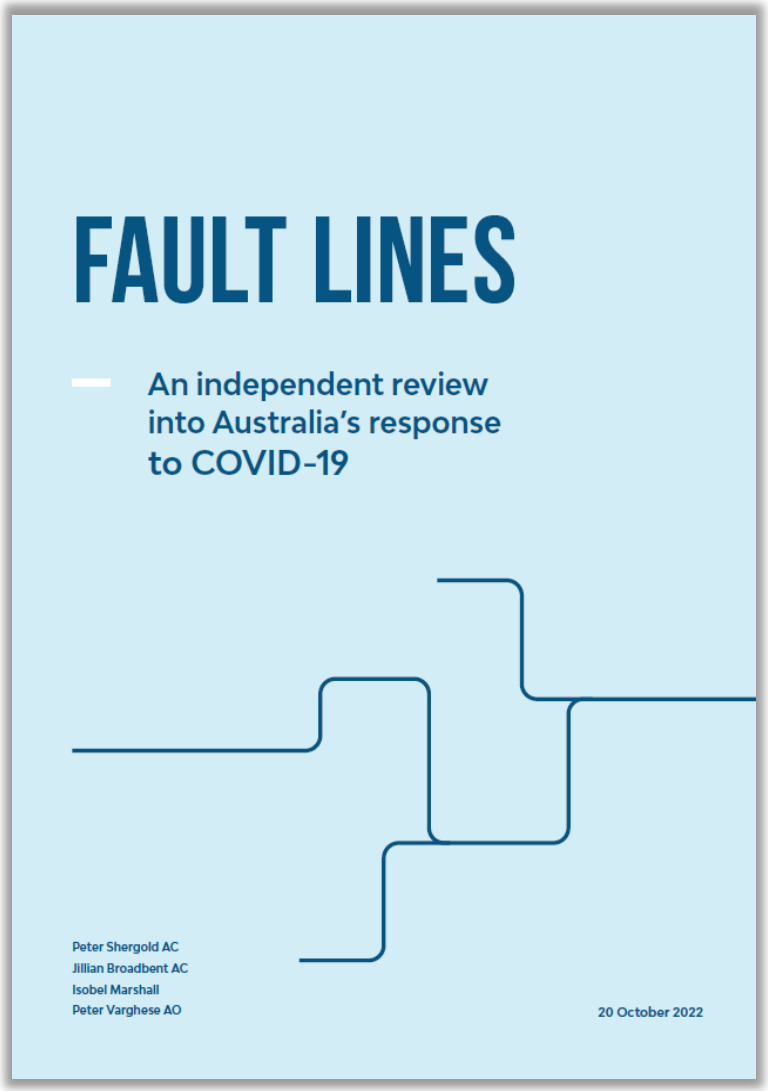
Giles ML, Clin Infect Dis 2021

Did that early response matter?



What Australia didn’t do so well

Independent reviews identified key systems to improve



Independent review: October 2022

Government led review: October 2024

What was missing in the research response?

- National **data systems and data sharing arrangements**, including pre-agreements for sharing for research purposes
- **Evidence synthesis** didn't address all needs (often not shared and much duplication)
- **Research co-ordination** – particularly in modelling (differences in Commonwealth and State needs) and clinical research to reduce fragmentation and duplication
- **Dedicated ethics processes** for national health emergencies to better enable real-time crisis-related research
- **Cohorts** of first cases and clinical trial platforms with pre-approved data and ethics protocols
- **Mechanisms for responsive risk communication**, engaging with behavioural science
- **Specific plans for First Nations research**, including Indigenous Data Sovereignty

Australian Centre for Disease Control: Jan 1st 2026

Australian Centre for Disease Control

Australian Centre for Disease Control Act 2025

No. 61, 2025

Diagnostics

Integrated multisource surveillance

Epidemiological forecasting and scenario modelling

Understanding effectiveness of interventions

Behavioural and social sciences

Pandemic preparedness in Australia today

Strengthening mRNA capabilities in Australia

Large scale manufacturing

moderna

BIONTECH

CSL

Innovation and pipeline

mRNAVIC — $150m

NSW-RRTN
NSW RNA RESEARCH & TRAINING NETWORK — $144m

BASE — $6.6m

Human infection challenge capability

Mission: To accelerate the development of novel medicines and vaccines through innovative early phase and human challenge clinical trials

Model: An independent not for profit company with sole share holder University of Melbourne focused on phase 1 clinical trials launched in March 2024

Funding: Philanthropy, Victorian government and University of Melbourne (total $8 million)

Priority areas: Human infection challenge models, initially for malaria, Group A strep, influenza and gonorrhea. First flu trial completed in 2025 (H3N2)

Australian Institute for **Infectious Disease**

Foundation Partners

THE UNIVERSITY OF MELBOURNE

Doherty Institute

Burnet

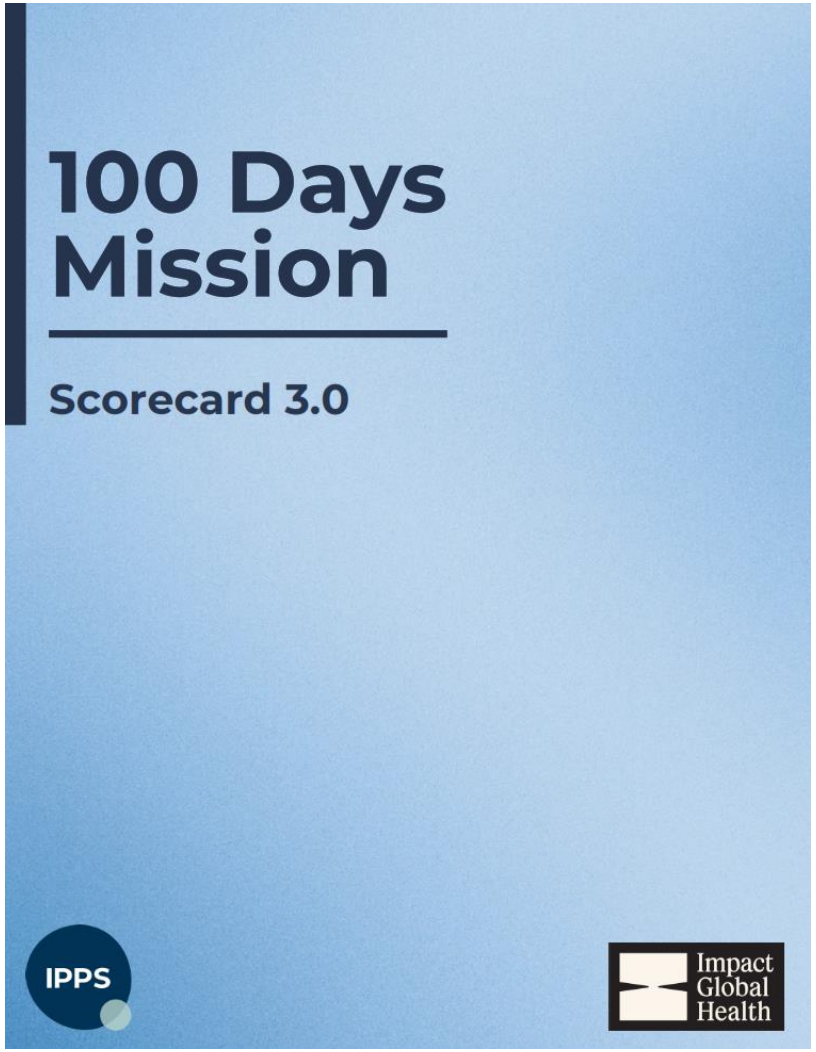
Major Supporting Partner

VICTORIA State Government

- To **address the main gaps** in the COVID-19 response
  - Critical infrastructure including high containment
  - Collaboration and co-ordination
  - Industry partnerships
- Investment of **$400 million by the government of Victoria**, $200 million from the partners and $50 million from philanthropy
- Capabilities will include expanded **high containment**, **biobanking** and **clinical trials**

Meeting the challenge for better pandemic therapeutics

Scorecard 3.0 – January 2026



- **Limited progress has been made**, with the ecosystem remaining reactive and reliant on US funding.
- **R&D funding has declined** across most pathogens and product types (platform technologies remain resilient, but US Government funding dominated).
- **Therapeutics represent a critical gap** – there is declining funding and a contracting pipeline requiring immediate action.
- **Pipeline stagnation is evident**, and most candidates are arrested at phase 1 with progression limited to early-stage transitions.

The Cumming Global Centre for Pandemic Therapeutics (CGCPT)

- Funded by $250 million donation from Canadian philanthropist **Geoff Cumming,** $75 million from the **Victorian Government** and $25 million from the **University of Bonn**
- The CGCPT is a **mission-driven, globally connected research centre** based at the Doherty Institute.
- The centre focuses on developing **new platform technologies** to develop therapeutics at speed for pathogens of pandemic potential

Our impact to date

150+
researchers working to advance the science behind pandemic therapeutics

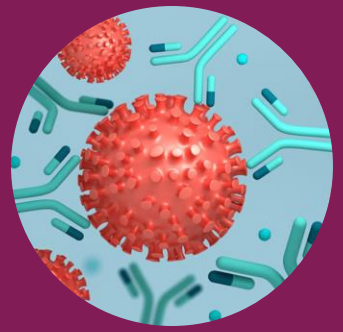
35
projects funded

$75m+
invested in therapeutic research to date

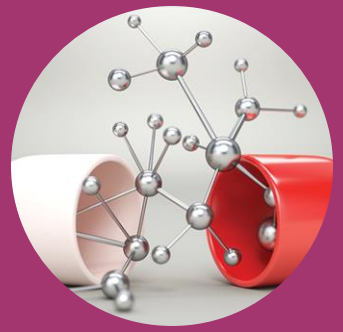
30+
collaborations with institutions worldwide

10
collaborating countries

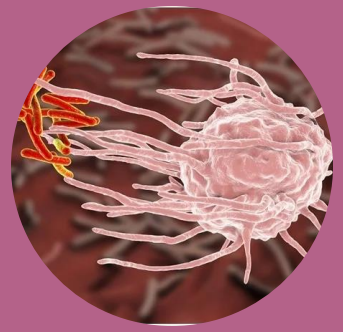
CGCPT Therapeutic Platforms and Pathogens



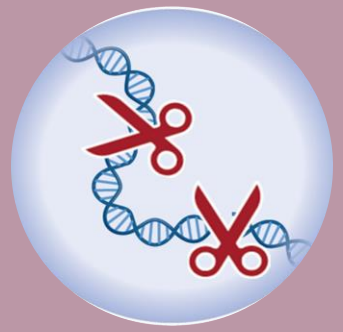
Antibodies and nanobodies



Small molecules (panviral)



Host targets (innate immune activators)



Nucleic acid targeting

Virology, bacteriology and immunology: target discovery

Pathogens:

- Influenza
- Coronaviruses
- Paramyxoviruses (BSL4)
- Arboviruses of high interest to Australia i.e. MVE, JE
- AMR

Enabling capabilities:

- Organoids
- Humanised mouse models
- BSL4
- CryoEM
- mRNA and LNP delivery modalities

CUMMING GLOBAL CENTRE FOR PANDEMIC THERAPEUTICS

Summary and implications

- Australia's response to COVID-19 was **far from perfect** but the early response saved many lives. The response was characterised by **rapid decisive action** by government, strong engagement with **scientific experts** and some but not enough **national co-ordination** in research

- Two independent reviews have identified **multiple areas for improvement** including better real time management of data. Resulted in establishing the **Australian Centre for Disease Control.** Research strategy still to come.

- A significant investment has been made across the country in **mRNA** large scale **manufacturing and innovation** to grow the pipeline of mRNA products

- Despite significant investment in Australia's preparedness, **more needs to be done across the region** to ensure capability, collaboration and integration