Preparing Australia for future pandemics: strengthening trust, social capital and resilience

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The findings of the *COVID-19 Response Inquiry*, an independent report, which was commissioned by the Albanese government into Australia's response to the coronavirus disease 2019 (COVID-19) pandemic, were released on 29 October 2024. The independent panel, which had substantial experience in public health and economic policy, made nine guiding recommendations and 26 actions to improve Australia's preparedness to manage future public health emergencies.[1] Following extensive stakeholder engagement,[2,3] the Inquiry highlighted the loss of trust and eroded confidence in government, and emphasised the importance of rebuilding trust and resilience with populations, communities and settings that were most negatively affected by the COVID-19 pandemic and related measures. Equity was emphasised as a cornerstone for pandemic preparedness, to proactively address populations most at risk and consider existing inequities in health when developing pandemic responses.[1] The Inquiry found that, in Australia, similar to other high and middle-income countries,[4-6] the COVID-19 pandemic disproportionately affected priority populations through morbidity, mortality and the impact of the pandemic response measures.[1] Priority populations were defined as those groups who experienced an inequitable burden of disease and disparities in health and economic outcomes during the COVID-19 pandemic.[1] These differences arise due to inequities in the social determinants of health, including education, employment, socio-economic group, housing stability, access to health care, and experiences of racism.[1] Individuals may also experience intersecting layers of inequity and face disproportionate impacts from pandemic response measures.[1]

In Australia, non-Australian born individuals, those living in areas of higher socio-economic disadvantage, and Aboriginal and Torres Strait Islander peoples died of COVID-19 at higher rates than non-Aboriginal and Torres Strait Islander peoples born in Australia.[7,8] Public health restrictions also affected priority populations disproportionately, specifically culturally and linguistically diverse communities, people with disabilities, people experiencing homelessness, children, and individuals in residential aged care.[1]

In this perspective article we outline the critical knowledge gaps in understanding the roles of trust, social capital and resilience in balancing future pandemic public health restrictions with disease transmission and mortality, and the key role these factors may play in future pandemic preparedness.

Knowledge gaps: the role of trust, social capital and resilience in the COVID-19 pandemic

Trust in government and science, social capital and individual resilience have been shown to affect individuals' and communities' recovery from natural disasters, economic crises, and pandemics.[9] However, modelling of optimal COVID-19 public health restrictions has largely neglected these elements, instead focusing on health and economic benefits such as cost-effectiveness, infection rates and mortality.[10] As governments and policy makers prepare for future pandemics, trust, social capital and resilience should be examined and quantified to determine their roles in mitigating the harms of future pandemics on priority populations as part of equitable recovery and future responses (Box).

Restoring trust in government and science is critical to pandemic preparedness

Trust in government and science have been shown to be important factors in crises, including natural disasters, economic crises and pandemics. The COVID-19 Inquiry found that although trust in government was high during the early phase of the pandemic in Australia, there was a growing loss of trust as the pandemic restrictions remained in place.[1] The Inquiry found that the rationale for population-based behavioural interventions were supported by the available evidence early in the pandemic and communicated clearly to the community. However, later in the COVID-19 pandemic, trust in government declined because of the stringency and duration of restrictions and mandated measures and the lack of transparency and supporting evidence for public health decisions.[1] Trust in science in Australia has been among the highest globally both before and after the COVID-19 pandemic.[11,12] However, trust in science was challenged during the pandemic when jurisdictions took different approaches in similar situations while telling the public they were listening to science. The Inquiry also found that trust in science was eroded by vaccine mandates when community members experienced becoming sick with COVID-19 after receiving the vaccination.[3] Concerningly, in a 2024 community survey conducted for the Inquiry, 21% of the 2126 respondents said they would not get a vaccine offered by the government in a future public health emergency, and a further 17% said they may or may not get vaccinated.[3] The Inquiry found that a range of individual negative experiences undermined trust in government, including being stranded overseas, not being permitted to see dying loved ones, feeling frustration around changing restrictions, and being unable to access supports.[1]

Research has shown that trust may also play a role in the rate of COVID-19 cases and mortality. A large study of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections and deaths in 177 countries (January 2020 – September 2021) found that higher government and interpersonal trust was strongly and significantly associated with fewer infections, but not with the case fatality rate.[9] High government and interpersonal trust and lower government corruption

Definitions, evidence, knowledge gaps and strategic solutions on trust, social capital, and resilience during public health emergencies

	Trust	Social capital	Resilience
Definition	• Trust in science: the confidence placed in scientific experts' information, including scientific methods, findings, and the institutions that conduct and promote scientific research. • Trust in government: the level of confidence people have in their government, including whether they believe government is acting in their best interest, is competent and honest.	• Social capital is a contextual and multidimensional concept that describes networks of relationships which influence the experiences of individuals as well as the collective actions and outcomes of communities. Social capital includes social connectedness and the capacity to mobilise social resources.	• Resilience refers to the capacity of individuals, communities or societies to adapt, recover and thrive in the face of adversity or change. It involves the ability to recover (or "bounce back") from challenges or hardships by leveraging resources, social supports and individual coping mechanisms. • It also encompasses "bouncing forward", seeing disasters and pandemics as an opportunity for growth and "building back better" rather than as a simple return to the status quo prior to the event. The concept of bouncing forward also refers to the establishment of new approaches when the previous status quo has been irrevocably changed by the hazard event.
Current evidence (related to the COVID-19 pandemic)	• Trust in government is associated with fewer COVID-19 cases, lower COVID-19 mortality, and higher community adoption of public health restrictions. • Trust in science is associated with higher adherence to social distancing recommendations. However, trust in science follows a social inequality gradient, with the lowest socio-economic group likely to experience lower trust in science and lower adherence to public health measures compared with the highest socio-economic group.	• The relationship between social capital and the number of COVID-19 cases was complex, with different forms of social capital associated with fewer COVID-19 cases and mortality (eg, social capital related to civic and institutional bodies) and other forms associated with higher COVID-19 mortality (eg, social trust, the belief in the honesty, integrity and reliability of others).	• Resilience is an established area of disaster and public health emergency research. Personal resilience was shown to be positively associated with organisational and social support, as well as reduced burnout, anxiety and depression among frontline workers during the COVID-19 pandemic.
Knowledge gaps	• Measurements of trust in government and trust in science are often based on observational data collected through convenience sampling and lacking a robust measure established with methodological rigor. As a result, the complex dimensions of trust may remain unclear, and comparisons across different populations and time periods may be unreliable. • Identifying specific policies in Australia that either undermined or built trust in government during the COVID-19 pandemic is crucial to the management of future public health emergencies.	• Robust and reliable measures of the different domains of social capital should be established during interpandemic periods to understand social connection and community cohesion. • Measures to foster and strengthen social capital related to civic and institutional bodies should be prioritised during interpandemic periods. Further studies should be undertaken to explore the impact of social trust during health emergencies, particularly among priority populations.	• Further research is needed on the factors contributing to personal resilience during pandemics as well as studies that explore which individuals and groups (ie, frontline workers, health care workers etc) may benefit from targeted support to enable recovery from a public health crisis. • The notion of bouncing forward should be explored in the context of COVID-19 pandemic recovery to understand how systemic adaptations to pandemic stressors have reduced health inequities (eg, telehealth).
Strategic solutions	• Modelling during future public health emergencies should include established and robust measures of social capital, resilience and trust to understand the impact of future public health restrictions and mandates. • The future Australian Centre for Disease Control should incorporate social scientists alongside natural (empirical) scientists and epidemiologists to more effectively address the behavioural and social challenges in managing future public health emergencies.	• Civic and institutional connections should be built and fostered during interpandemic periods with priority population communities and community leaders. • The roles of state and federal civic and institutional bodies related to public health emergencies should be clear to the public to foster trust and faith in these institutions during future emergencies.	• Resilience-building should prioritise structural and systems-level solutions, rather than focusing on individuals, to better address future public health emergencies. This approach ensures sustainable, long term improvements that strengthen overall community capacity and response.

COVID-19 = coronavirus disease 2019. ◆

were associated with higher COVID-19 vaccine coverage in both high and middle-income countries. The study estimated that if the modelled associations were causal — for example, if government and interpersonal trust in all countries was increased to that of Denmark (75th percentile) — global infections may have been reduced by 53.2% due to government and interpersonal trust.[9] Other studies have found that trust in national government was inversely related to COVID-19 cases and deaths.[13] Increasing trust in government was also associated with adoption of public health measures (eg, handwashing, avoiding crowded spaces, self-quarantine) and pro-social behaviours (willingness to help others with COVID-19 and make personal sacrifices to prevent transmission) that may reduce COVID-19 mortality.[14]

Trust in science has been associated with higher adherence to social distancing recommendations. Trust in science also predicts an individuals' likelihood of adhering to prescribed government recommended measures (eg, social distancing, self-isolation, handwashing) and discretionary COVID-19 behaviours (eg, donating to COVID-19 causes).[15,16] Of note, a lack of trust in government and science has been shown to follow a social inequality gradient,[17] with the poorest 10% significantly more likely to distrust government and science than the wealthiest 10%.[18] The COVID-19 Inquiry emphasised that a loss of trust in government was associated with the level and enforcement of restrictions during the pandemic, highlighting examples such as the lockdowns in public housing towers in Melbourne as eroding trust in police and other authorities among lower socio-economic and culturally and linguistically diverse communities.[1]

Explore the role of social capital in future health crises

Social capital is a contextual and multidimensional concept that includes social connectedness and capacity to mobilise social resources.[19] Social capital and social infrastructure — the social ties that enable community trust, mutual support and collective action — have been shown to act as "shock absorbers" in recovery from natural disasters.[20] The role of social capital was not directly assessed by the Inquiry. However, social cohesion, a byproduct of social capital, was emphasised as an essential component of the social fabric to protect against the economic shocks of the COVID-19 pandemic. The Inquiry also recognised that, during the pandemic, social cohesion was at risk of harm from racism and discrimination in the community, disinformation and misinformation.[1]

Research examining the role of social capital during the COVID-19 pandemic has found that higher levels of social capital (related to civic and institutional bodies) is associated with lower COVID-19 positivity rates in the United States, after adjusting for health system and individual factors such as social vulnerability, health care and governance capacity and partisanship.[21] In another study of over 2700 US counties, higher social capital — trust (in family and communities) and social factors (helping behaviours and collective efficacy) — were associated with fewer COVID-19 cases and deaths and reduced transmission.[22] Counties above the 75th percentile of social capital distribution had 18% fewer COVID-19 cases and 5.7% fewer deaths than counties below the 75th percentile. Similar inverse relationships between social capital and COVID-19 mortality have been reported in Europe, where a one standard deviation increase in social capital led to 14–34% fewer COVID-19 cases and 6–35% fewer excess deaths.[23]

However, a global study of the relationships between social capital and COVID-19 mortality in 37 countries in October 2020 found mixed effects.[24] This study found that community attachment and social trust (belief in others' honesty, integrity and reliability) were associated with more COVID-19 deaths, whereas increased family bonds and security were associated with fewer COVID-19 deaths. A large data linkage study of 84 countries early in the pandemic found a similar mixed effect of social capital on COVID-19 deaths, reporting that mortality was positively associated with social trust and negatively associated with social capital from civic engagement and confidence in state institutions.[25] The existing literature on the role of social capital during the COVID-19 pandemic demonstrates complex and sometimes conflicting associations, which needs to be quantified further with research.

Build resilience in interpandemic periods

Resilience refers to individual capacities, the resources and social supports available to individuals, and the circumstances in which they live, work and study.[26] Resilience encompasses "bouncing back" from disturbances, negative life events and illness, adaptability, and "bouncing forward" from a disaster.[27] It buffers the negative effects of traumatic events such as natural disasters and protects against post-traumatic stress disorder, and as such, is key to pandemic recovery and future pandemic preparedness.[28] However, data on the impact of resilience during COVID-19 are scarce, and most studies assess its effect on personal wellbeing and psychological health rather than mortality. Studies have shown that self-reported resilience during the pandemic mediates the relationship between hope, psychological health and subjective wellbeing, which improved psychological health substantially.[29] Among nurses, more personal resilience, organisational support and social support was associated with less COVID-19-related anxiety.[30] Large studies in Israel and the US associated individual resilience and wellbeing with lower COVID-19 distress.[31,32] Building organisational and professional support, particularly for health care workers, may be another key component of pandemic preparedness in mitigating burnout, anxiety and depression among frontline workers.[33]

The importance of individual circumstances and experiences during the COVID-19 pandemic has been highlighted in a recent Australian Human Rights Commission report.[34] The report's key findings emphasise the impact of the pandemic on groups that cannot easily be categorised using demographic data, such as the challenges of homeschooling for both parents and school-aged children, individuals

experiencing domestic and family violence, those without financial supports to buffer loss of income and people unable to work from home. These findings reiterate the contextual nature of resilience and the importance of improving resilience factors for individuals and communities during interpandemic periods.

Conclusion

The Australian COVID-19 Inquiry report has found that the government can no longer rely on people willingly adhering to public health restrictions similar to those implemented during the COVID-19 pandemic in a future public health emergency.[1] The Inquiry found that aspects of the pandemic response diminished trust and eroded public confidence.[1] National planning for future pandemics must be centred on a rebuilding of trust, social cohesion and the social contract between government and the people, to be adequately prepared for public health emergencies. As the future Australian Centre for Disease Control is being established to prepare and respond to future public health emergencies, we believe that social scientists should be embedded within the organisation to examine and quantify factors such as trust, social capital and resilience. The integration of social sciences with natural (empirical) sciences and epidemiology is essential to better understand the roles these factors have in mitigating the negative effects of future pandemics and related measures on priority populations.

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1 Australian Government Department of the Prime Minister and Cabinet. COVID-19 Response Inquiry final report. Canberra: Commonwealth of Australia, 2024. https://www.pmc.gov.au/news/covid-19-response-inquiry-final-report (viewed Mar 2025).

2 Australian Government Department of the Prime Minister and Cabinet. Commonwealth Government COVID-19 Response Inquiry [website]. Canberra: Commonwealth of Australia, 2024. https://www.pmc.gov.au/domestic-policy/commonwealth-government-covid-19-response-inquiry (viewed Feb 2025).

3 Australian Government Department of the Prime Minister and Cabinet. COVID-19 Response Inquiry Community Input Survey: final report. Canberra: Commonwealth of Australia, 2024. https://www.pmc.gov.au/resources/community-input-survey-report (viewed Feb 2025).

4 Bentley-Edwards KL, Adisa O, Ruff KE, et al. Race, racism, and covid-19 in the US: lessons not learnt. *BMJ* 2024; 384: e076106.

5 McGowan VJ, Bambra C. COVID-19 mortality and deprivation: pandemic, syndemic, and endemic health inequalities. *Lancet Public Health* 2022; 7: e966-e975.

6 Mishra V, Seyedzenouzi G, Almohtadi A, et al. Health inequalities during COVID-19 and their effects on morbidity and mortality. *J Healthc Leadersh* 2021; 13: 19-26.

7 Australian Bureau of Statistics. COVID-19 mortality in Australia, deaths registered to 31 January 2022. Canberra: ABS, 2022. https://www.abs.gov.au/articles/covid-19-mortality-australia-deaths-registered-31-january-2022 (viewed Mar 2025).

8 Australian Bureau of Statistics. COVID-19 mortality in Australia: deaths registered until 31 January 2024. Canberra: ABS, 2024. https://www.abs.gov.au/articles/covid-19-mortality-australia-deaths-registered-until-31-january-2024 (viewed Mar 2025).

9 COVID-19 National Preparedness Collaborators. Pandemic preparedness and COVID-19: an exploratory analysis of infection and fatality rates, and contextual factors associated with preparedness in 177 countries, from Jan 1, 2020, to Sept 30, 2021. *Lancet* 2022; 399: 1489-1512.

10 Blakely T, Thompson J, Bablani L, et al. Association of simulated COVID-19 policy responses for social restrictions and lockdowns with health-adjusted life-years and costs in Victoria, Australia. *JAMA Health Forum* 2021; 2: e211749.

11 Cologna V, Mede NG, Berger S, et al. Trust in scientists and their role in society across 68 countries. *Nat Hum Behav* 2025; https://doi.org/10.1038/s41562-024-02090-5 [Epub ahead of print].

12 Wellcome Trust. Wellcome Global Monitor: COVID-19, 2020. https://wellcome.org/reports/wellcome-global-monitor-covid-19/2020 (viewed Mar 2025).

13 Stivas D, Cole A. The importance of trust and transparency in managing the COVID-19 pandemic. Evidence from sixteen EU member states. *Journal of Contemporary European Studies* 2023; https://doi.org/10.1080/14782804.2023.2193733.

14 Han Q, Zheng B, Cristea M, et al. Trust in government regarding COVID-19 and its associations with preventive health behaviour and prosocial behaviour during the pandemic: a cross-sectional and longitudinal study. *Psychol Med* 2023; 53: 149-159.

15 Sulik J, Deroy O, Dezecache G, et al. Facing the pandemic with trust in science. *Humanit Soc Sci Commun* 2021; 8: 301.

16 Pagliaro S, Sacchi S, Pacilli MG, et al. Trust predicts COVID-19 prescribed and discretionary behavioral intentions in 23 countries. *PLoS One* 2021; 16: e0248334.

17 Alsan M, Wanamaker M. Tuskegee and the health of black men. *Q J Econ* 2018; 133: 407-455.

18 Bajos N, Spire A, Silberzan L, et al. When lack of trust in the government and in scientists reinforces social inequalities in vaccination against COVID-19. *Front Public Health* 2022; 10: 908152.

19 Edwards RW. Measuring social capital: an Australian framework and indicators [1378.0]. Canberra: Australian Bureau of Statistics, 2004. https://www.ausstats.abs.gov.au/ausstats/free.nsf/0/13C0688F6B98DD45CA256E360077D526/$File/13780_2004.pdf (viewed Mar 2025).

20 Kawachi I, Aida J, Hikichi H, Kondo K. Disaster resilience in aging populations: lessons from the 2011 Great East Japan earthquake and tsunami. *J R Soc N Z* 2020; 50: 263-278.

21 Fraser T, Page-Tan C, Aldrich DP. Social capital's impact on COVID-19 outcomes at local levels. *Sci Rep* 2022; 12: 6566.

22 Makridis CA, Wu C. How social capital helps communities weather the COVID-19 pandemic. *PLoS One* 2021; 16: e0245135. Erratum in: *PLoS One* 2021; 16: e0258021.

23 Bartscher AK, Seitz S, Siegloch S, et al. Social capital and the spread of COVID-19: insights from European countries. *J Health Econ* 2021; 80: 102531.

24 Imbulana Arachchi J, Managi S. The role of social capital in COVID-19 deaths. *BMC Public Health* 2021; 21: 434.

25 Elgar FJ, Stefaniak A, Wohl MJA. The trouble with trust: time-series analysis of social capital, income inequality, and COVID-19 deaths in 84 countries. *Soc Sci Med* 2020; 263: 113365.

26 Manyena B, Machingura F, O'Keefe P. Disaster Resilience Integrated Framework for Transformation (DRIFT): a new approach to theorising and operationalising resilience. *World Development* 2019; 123: 104587.

27 Disaster resilience: a bounce back or bounce forward ability? *Local Environment* 2011; 16: 417-424.

28 Lowe SR, Sampson L, Gruebner O, Galea S. Psychological resilience after Hurricane Sandy: the influence of individual- and community-level factors on mental health after a large-scale natural disaster. *PLoS One* 2015; 10: e0125761.

29 Yıldırım M, Arslan G. Exploring the associations between resilience, dispositional hope, preventive behaviours, subjective well-being, and psychological health among adults during early stage of COVID-19. *Curr Psychol* 2022; 41: 5712-5722.

30 Labrague LJ, De Los Santos JAA. COVID-19 anxiety among front-line nurses: Predictive role of organisational support,

personal resilience and social support. *J Nurs Manag* 2020; 28: 1653-1661.

31 Kimhi S, Marciano H, Eshel Y, Adini B. Resilience and demographic characteristics predicting distress during the COVID-19 crisis. *Soc Sci Med* 2020; 265: 113389.

32 Barzilay R, Moore TM, Greenberg DM, et al. Resilience, COVID-19-related stress, anxiety and depression during the pandemic in a large population enriched for healthcare providers. *Transl Psychiatry* 2020; 10: 291.

33 Baskin RG, Bartlett R. Healthcare worker resilience during the COVID-19 pandemic: an integrative review. *J Nurs Manag* 2021 29: 2329-2342.

34 Australian Human Rights Commission. "Collateral damage": what the untold stories from the COVID-19 pandemic expose about human rights in Australia. Sydney: Australian Human Rights Commission, 2025. https://humanrights.gov.au/our-work/rights-and-freedoms/publications/collateral-damage-report-australias-covid-19-pandemic (viewed Apr 2025). ■