

# **How to prepare for the next pandemic**

**Submission to the federal government's COVID Response Inquiry**

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## Summary

We welcome the opportunity to contribute to the federal government's COVID Response Inquiry.

There are many important public health measures needed to prepare for the next pandemic, such as developing an advanced surveillance system, and preparing emergency management capabilities and the tools needed to support decisions about public health restrictions. However, this submission focuses on something that is just as important, but which is more likely to be overlooked: improving prevention and primary care systems to make Australia fairer and more resilient.

While Australia's overall health outcomes during the COVID pandemic were better than those in many other countries, there were still huge disparities. Disadvantaged Australians fell behind at every stage: they had lower vaccination rates, fewer antiviral treatments, and higher risk of death.

Sadly, this didn't come as a surprise. These health gaps existed before the pandemic and remain today: poorer Australians, people living in regional and remote areas, and Indigenous Australians are more likely to smoke and have a poor diet, suffer from chronic illness, miss out on healthcare, and die younger.

The federal government must urgently push to close these health gaps before the next pandemic. Otherwise, Australia's chronic disease burden will continue to grow, with some communities much sicker than others. That will mean more sickness and death from a future pandemic, and greater risk of the health system being overwhelmed.

If we wait for the next pandemic, it will be too late to ensure fair outcomes. Australia must build a strong and equitable health system now, and have systems ready to go when the next crisis comes.

There is no silver bullet, but our submission outlines three ways the government should strengthen the health system to minimise the burden in any future pandemic on the most disadvantaged.

First, chronic diseases need to be reduced, so people can better withstand the health impacts of a novel pathogen. This will require governments investing more in prevention programs, particularly in disadvantaged communities. The new Australian Centre for Disease Control (ACDC) should factor inequalities into its work and decisions.

Second, the primary care system needs to better manage chronic conditions. Reforms are underway, but more are needed. The funding model should be adjusted to patient need, and federal and state governments should co-commission services in rural areas to ensure patients can get the care they need.

Third, Australia's vaccination system needs to be strengthened to ensure that everyone can get rapid access to vaccines that reduce the risks of infection and illness before being infected, and any treatments that reduce those risks after being infected.

Our recommendations draw on the analysis and recommendations of three recent Grattan Institute's reports (attached to this submission):

- *The Australian Centre for Disease Control (ACDC): Highway to health* (2022)
- *A new Medicare: Strengthening general practice* (2022)
- *A fair shot: How to close the vaccination gap* (2023)

## Recommendations

### Forge a national funding agreement on prevention

- The federal government should boost investment in prevention through a new national funding agreement.
- The new Australian Centre for Disease Control (ACDC) should have improving equity as a core goal.

### Reform primary care funding

- The federal government should ensure the new funding model for primary care is adjusted to patient need, taking account of demographics and socio-economic factors.
- The federal government – through Primary Health Networks – should work with the states to co-commission services in areas where there are few primary care services.

### Create a new national vaccination agreement

- The federal and state governments should commit to a vaccine equity strategy, as part of a new vaccination agreement.
- The federal government should set targets to boost vaccination coverage and equity.
- The new national vaccination system should include three tiers of measures – universal, targeted, and tailored – to ensure equal access to vaccinations across communities.

### Build new information systems

- Primary Health Networks should monitor antiviral uptake in their catchments and across clinics.
- Primary Health Networks should work with state governments to improve supply of antivirals in harder-to-reach communities.

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## 1 The pandemic highlighted Australia's big health gaps

Disadvantaged Australians fell further behind other Australians at every stage of the COVID-19 pandemic. They had lower vaccination rates, fewer antiviral treatments, and higher death rates.

Health gaps existed before the pandemic and remain today: poorer Australians, people living in regional and remote areas, and Indigenous Australians are more likely to smoke and have a poor diet, suffer from chronic illness, miss out on healthcare, and die younger (see Figure 1.1).

The federal government must urgently push to close these gaps before the next pandemic. Otherwise, Australia's chronic disease burden will continue to grow, with some communities much sicker than others. That will mean more sickness and death from a future pandemic, and greater risk of the health system being overwhelmed.

### 1.1 Australia's health gaps are big and likely to get bigger

Disadvantaged Australians have more health risk factors, are sicker, and find it harder to get the healthcare they need. As some health risk factors increase, and chronic conditions become more common, health gaps are likely to get wider.

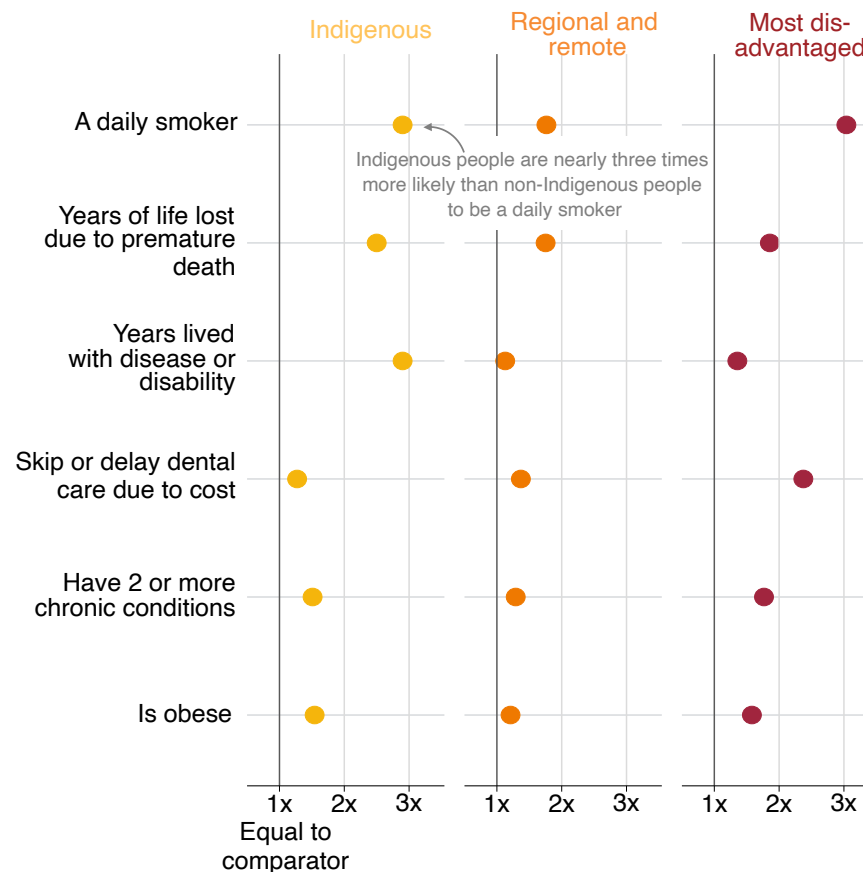
#### Disadvantaged people have more health risks

Australia has been successful in reducing some health risks, such as smoking, and to a lesser degree, high alcohol consumption.<sup>1</sup> But other risk factors are either growing, or remain stubbornly high.

Rates of obesity have tripled, from less than 10 per cent of adults in 1980 to more than 30 per cent today. More than two thirds of

1. Breadon et al (2023, p. 13).

**Figure 1.1: Disadvantaged groups often have multiple health challenges**  
Rate ratio of disease risk factors, health access, and health outcomes



Notes: The most disadvantaged statistics are derived from comparing the lowest socioeconomic fifth to the highest.

Source: Grattan analysis of ABS (2022a), AIHW (2020), AIHW (2023a), AIHW (2023b), AIHW (2023c), ABS (2022b), AIHW (2023d), ABS (2022c), ABS (2020), AIHW (2021a), AIHW (2021b) and AIHW (2022a).

Australians are overweight or obese, and this figure has risen consistently over the past decade.<sup>2</sup>

Most Australians have some health risks, but they are greater for disadvantaged groups, who often lack the resources to change or avoid an unhealthy environment. For example, more disadvantaged Australians have fewer healthy options that they can afford, and are likely to be exposed to more advertising for unhealthy options.<sup>3</sup>

People living in outer regional and remote areas are more likely than people in cities to drink sugar-sweetened drinks daily.<sup>4</sup> Aboriginal people are exposed to more health risks than other Australians. And compared to the most advantaged fifth of Australians, the most disadvantaged fifth are more than three times as likely to be daily smokers (see Figure 1.1 on the previous page).

### Chronic conditions are becoming more common

Today, almost half of Australians live with a chronic disease<sup>5</sup> – long-term diseases such as cancer, cardio-vascular diseases, and diabetes – and they are becoming more common as our population ages and some risk factors, such as obesity, increase.<sup>6</sup> The prevalence of chronic disease has increased by 38 per cent over the past three decades.<sup>7</sup>

Nearly 40 per cent of the burden of chronic disease is caused by modifiable risk factors, such as smoking, obesity, poor nutrition, or social isolation.<sup>8</sup> Because disadvantaged people are more likely to face these risks, they are more likely to have chronic disease.

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2. AIHW (2022b).

3. Baker (2014).

4. ABS (2018a).

5. AIHW (2022c).

6. Treasury (2010, p. 8); Magliano et al (2009); Marquina et al (2022); and Savira et al (2021).

7. OWID (n.d.).

8. AIHW (2021c).

Indigenous Australians, poorer Australians, those with less education, and those living in rural parts of the country are far more likely to be diagnosed with multiple common chronic diseases.<sup>9</sup> The most disadvantaged fifth of Australians are nearly twice as likely to have two or more chronic diseases as the least disadvantaged fifth of Australians (see Figure 1.1 on the preceding page). And chronic diseases account for about 80 per cent of the life expectancy gap between Indigenous and non-Indigenous Australians.<sup>10</sup>

### Many disadvantaged Australians miss out on needed care

Many Australians – particularly those living in regional and remote areas and people on lower incomes – find it hard to get the healthcare they need. They wait a long time to get an appointment or can't afford care or prescribed medicines when they do.<sup>11</sup>

While rates of bulk-billing for GP services are high overall, particularly for patients with concession cards, disadvantaged Australians still face barriers to care.<sup>12</sup> For example, compared to those in the wealthiest areas, older Australians in the poorest areas are almost three times as likely to not to see a GP at least once a year.<sup>13</sup> When disadvantaged Australians do visit the GP, they are about 35 per cent more likely to report waiting too long for appointments.<sup>14</sup>

Poorer Australians also struggle to afford prescribed medicines, dental care, and specialist care. For example, compared to the most advantaged fifth of Australians, the most disadvantaged fifth are about

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9. Grattan analysis of ABS (2018b) and AIHW (n.d.).

10. AIHW (2011).

11. ABS (2022e).

12. Breadon et al (2022).

13. About 0.8 per cent of people 65 or older living in the least disadvantaged decile of areas did not see the GP over the course of a year, compared to 2.3 per cent in the most disadvantaged decile: Grattan analysis of AIHW (2021d).

14. ABS (2022e).

twice as likely to delay or skip taking prescribed medication because of cost.<sup>15</sup>

Skipping needed care and/or medication is not only bad for those individuals' health, but also bad for taxpayers and the economy. It makes people sicker, widens health gaps, and puts further strain on the health system down the track.<sup>16</sup>

### Gaps in health outcomes

The rising rates of health risk factors, increasing prevalence of chronic disease, and poor access to needed care for some, all compound to widen gaps in Australians' health outcomes.

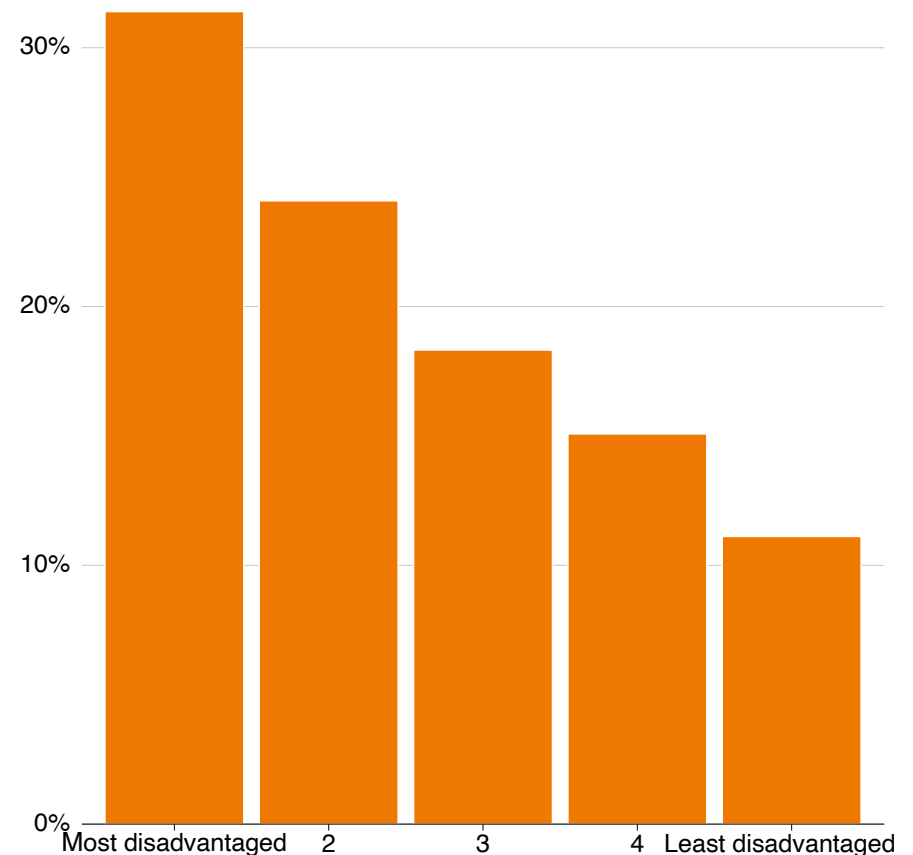
Men and women who live in poorer areas can expect to die six years and four years earlier than those who live in wealthy areas.<sup>17</sup> Indigenous Australians, and Australians with little formal education, can expect to die about eight years younger than their fellow citizens. People who live in rural areas will die about two to three years earlier, on average, than people who live in cities.<sup>18</sup>

And because chronic diseases contribute a lot to these gaps, disadvantaged people will spend more years living in ill health than other Australians, even though they die earlier.<sup>19</sup>

## 1.2 Australia's health gaps were highlighted during the COVID pandemic

COVID further exposed the gaps in Australians' health. Australians with chronic diseases and disadvantaged backgrounds were more likely to

**Figure 1.2: Disadvantaged people were more likely to die from COVID**  
Proportion of deaths due to COVID, by socio-economic group



Note: Data is up until September 2023.

Source: Grattan analysis of ABS (2022d).

15. ABS (2023b).

16. Duckett et al (2022, p. 8).

17. Breadon (2023).

18. Ibid.

19. Breadon and Fox (2023).

be at risk of severe illness from COVID, and more likely to miss out on COVID vaccination and treatment.

### COVID infections and deaths

People with chronic conditions were more likely to have severe illness from COVID, more complications, and a greater risk of death. For example, while about 50 per cent of Australians have one or more chronic conditions, pre-existing chronic conditions were recorded on the death certificates of about 80 per cent of Australians who died from COVID by September 2023.<sup>20</sup>

Disadvantaged Australians were also more likely to be infected, hospitalised, and die from COVID (see Figure 1.2 on the previous page).<sup>21</sup> While the disparity in death rates has varied over time, it peaked in 2021, when people in the most disadvantaged fifth of the population were six times more likely to die than the most advantaged fifth.<sup>22</sup>

Australians who were born overseas – particularly those with Middle Eastern and South-eastern European origins – also had higher death rates and lower vaccination rates (see Figure 1.3).

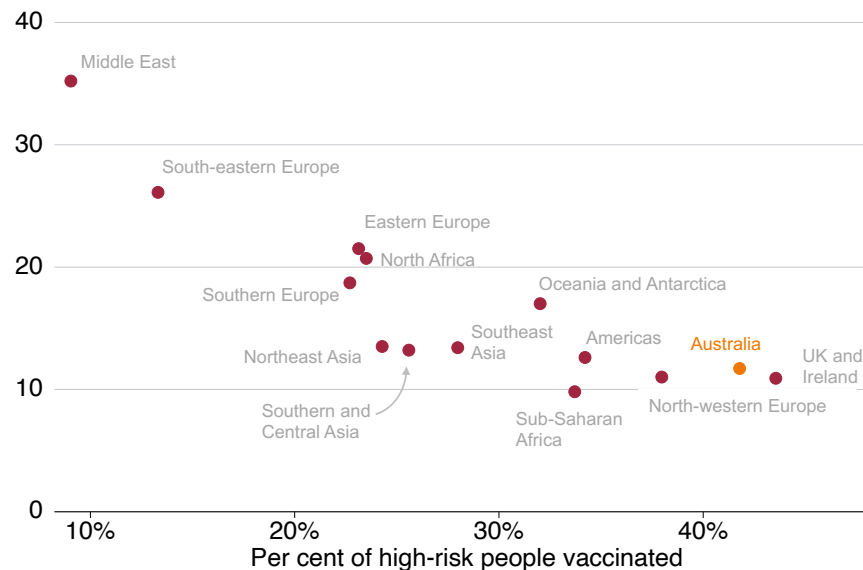
The disparities in infection rates will probably have long-lasting effects, with some people suffering from the consequences of the pandemic, such as long COVID, for years to come.<sup>23</sup>

### Disadvantaged Australians have lower rates of COVID vaccination

COVID vaccinations, when they became available, slashed the risk of illness, hospitalisation, and death during the height of the pandemic,

**Figure 1.3: Australians who were born overseas usually have higher COVID death rates and lower COVID vaccination rates than people born in Australia**

COVID death rates per 100,000 people (age-adjusted), by place of birth



Notes: Death rates include all certified COVID deaths registered by 31 July 2023. For further information on region of birth classifications see Appendix A in Bredon and Burford (2023). Data may vary slightly from results reported elsewhere due to data permutations and data-matching methods.

Source: Grattan analysis of ABS MADIP (2023) and ABS (2023a).

20. ABS (2023c).

21. Haigh et al (2023, p. 20); and Berchet et al (2022).

22. ABS (2023c).

23. Haigh et al (2023, p. 20).



and continue to provide valuable protection. Each COVID shot initially provides about 70-to-85 per cent protection against hospitalisation and death, even for high-risk people aged 65 and older.<sup>24</sup> And there is emerging evidence that vaccinations reduce the risk of long COVID.<sup>25</sup>

Despite these clear benefits, disadvantaged Australians – who are typically at higher risk of severe illness and death from COVID – were less likely to get vaccinated.

Even when COVID vaccination coverage was highest, disadvantaged Australians were far more likely to miss out. Analysis of first-dose vaccination rates by mid-January 2022 showed that Indigenous Australians, people who spoke a language other than English at home, unemployed people, those less educated, and poorer Australians were significantly less likely to be vaccinated.<sup>26</sup>

Uneven vaccination rates persist.<sup>27</sup> Going into winter 2023, high-risk people who aren't proficient in English were nearly 60 per cent less likely to have had a recent vaccination against COVID, compared to the average high-risk person (see Figure 1.4). Those living in very remote areas were about 35 per cent less likely to have had a recent COVID vaccine as those in inner-regional areas.<sup>28</sup>

Recent vaccination for the poorest people was nearly 40 per cent lower than for the richest people. And people with multiple disadvantages were even less likely to be vaccinated (see Figure 1.5 on the following page).

24. Liu et al (2023).

25. Byambasuren et al (2023), Tran et al (2023) and Vanichkachorn et al (2023).

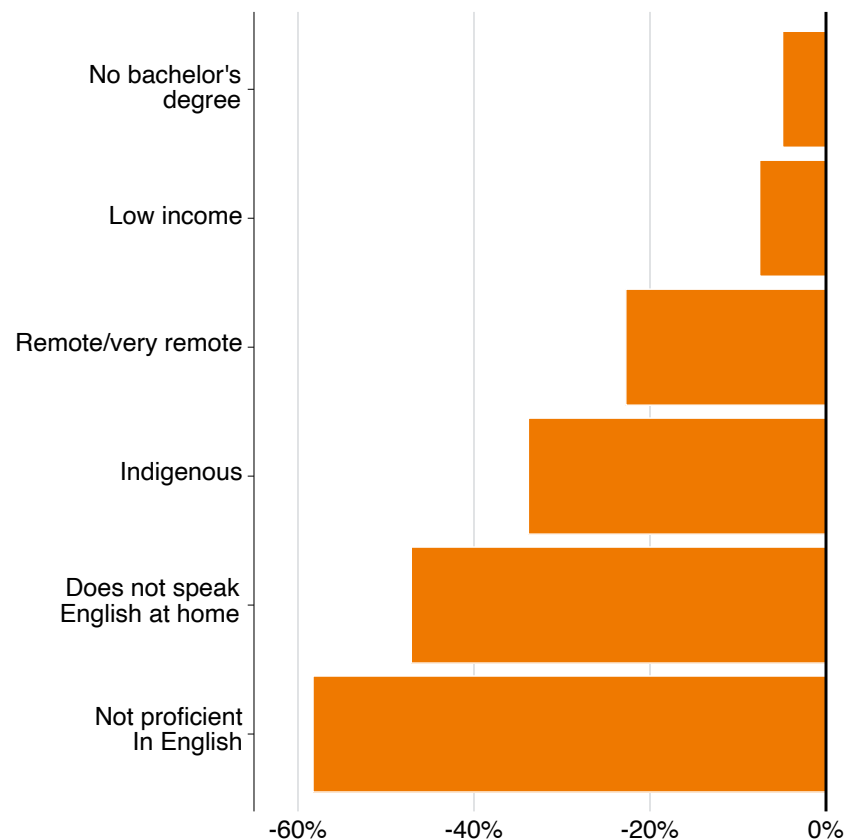
26. Biddle et al (2022).

27. Breadon and Burford (2023, p. 11).

28. Vaccination rates are about 40 per cent in inner-regional areas, and about 26 per cent in very remote areas: Grattan analysis of ABS MADIP (2023).

**Figure 1.4: High-risk adults in disadvantaged groups have lower COVID vaccination rates**

Difference in COVID vaccination rates compared to average, 2023



*Notes: People are considered 'vaccinated' if they received a COVID vaccine in the six months before June 2023. High-risk people include people aged 65 and older and people with two or more self-reported medical conditions that are high-risk for COVID. For further information on group definitions see Breadon and Burford (2023, Appendix). Data may vary slightly from results reported elsewhere due to data permutations and data-matching methods.*

*Source: Grattan analysis of ABS MADIP (2023).*

Low COVID vaccination rates for high-risk adults have big consequences. They make Australia sicker overall, and entrench unfair gaps in health outcomes between different communities.

### COVID antiviral treatment

COVID antivirals reduce the severity of illness, minimising the risk of hospitalisation and death.<sup>29</sup>

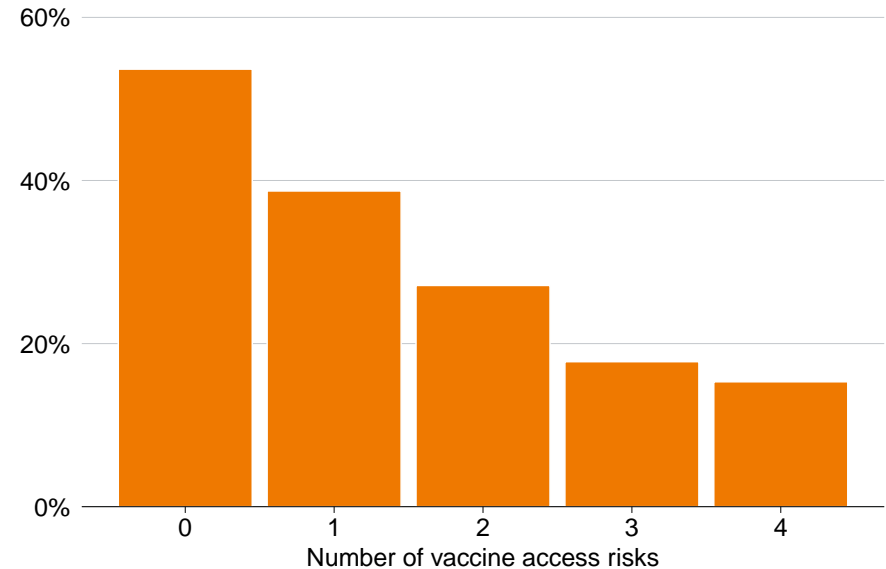
Antivirals, such as Paxlovid and Lagevrio, are recommended for people at higher risk of severe illness from COVID. This includes, for example, people older than 70, people older than 50 with additional risk factors, and Indigenous people older than 30.<sup>30</sup>

Yet Grattan analysis shows that those most at risk of severe illness from COVID are less likely to get needed COVID antivirals (see Figure 1.6 on the next page).

For example, high-risk people in the lowest socio-economic decile are 60 per cent less likely than high-risk people in the highest socio-economic decile to get antiviral treatment (see Figure 1.6 on the following page). High-risk people living in remote areas are 80 per cent less likely to get antiviral treatment than people living in major cities, and Indigenous Australians are 45 per cent less likely to get treatment than non-Indigenous Australians.

**Figure 1.5: The more disadvantages a person has, the less likely they are to be vaccinated against COVID**

Vaccination rates for COVID, 2023



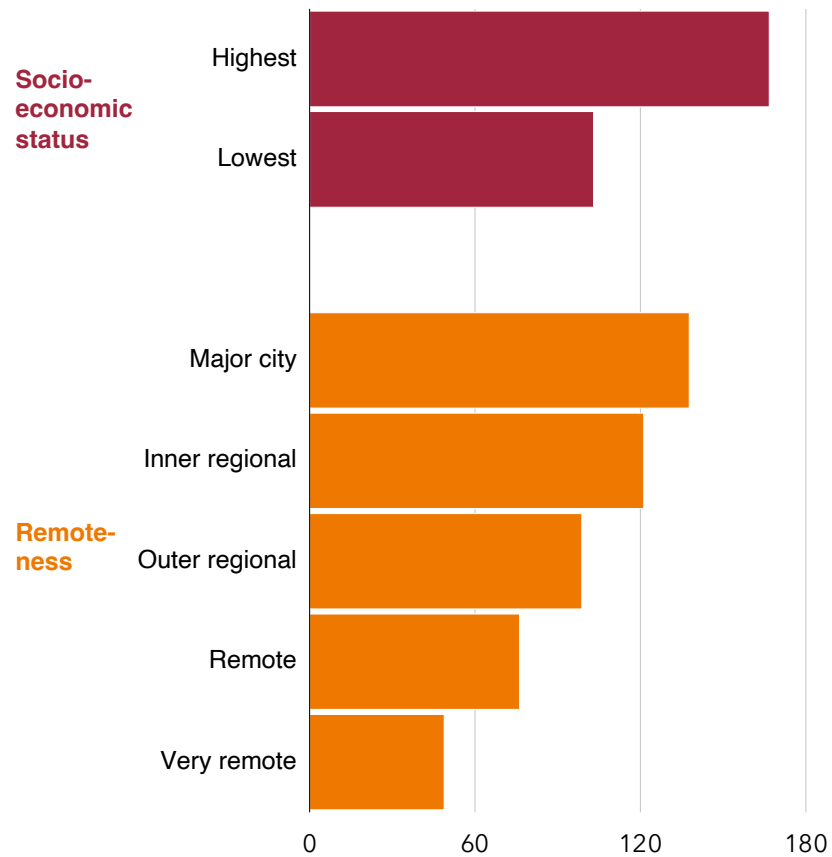
*Notes: Vaccine access risks include speaking a language other than English at home, not being proficient in English, being an Aboriginal or Torres Strait Islander, having a low income, and not having a bachelor's degree. There are 4,041,980 high-risk adults included in this sample: 524,960 with no access risk factors; 1,925,100 with one access risk factor; 1,193,940 with two; 297,510 with three; and 100,470 with four or more. Results vary slightly from results reported elsewhere due to data permutations and data-matching methods.*

*Source: Grattan analysis of ABS MADIP (2023).*

29. Bernal et al (2022); and Pfizer (2021).

30. Department of Health and Aged Care (2023a). People aged 18 and older may also be eligible if they are severely immuno-compromised or have previously been in hospital with COVID.

**Figure 1.6: People from low socio-economic backgrounds and people who live in regional and remote areas have low take-up of antivirals**  
COVID antiviral dispensing rate per 1,000 people aged 65 years and over



Notes: COVID antivirals include Paxlovid and Lagevrio. Dispensing rates up to June 2023. Socio-economic groups include the highest and lowest deciles.

Source: Grattan analysis of ABS MADIP (2023).

## 2 Building a fairer and more resilient health system for the next pandemic

Australia should be doing much more to close health gaps. This will not only improve the lives of many Australians, but make Australia more resilient to future pandemics, and stop future pandemics making inequities worse.

Minimising health gaps should be a core part of health system design, including in monitoring, funding, and system management, with additional programs to support those most in need.

### 2.1 The new Australian Centre for Disease Control should drive prevention policy and apply an equity lens

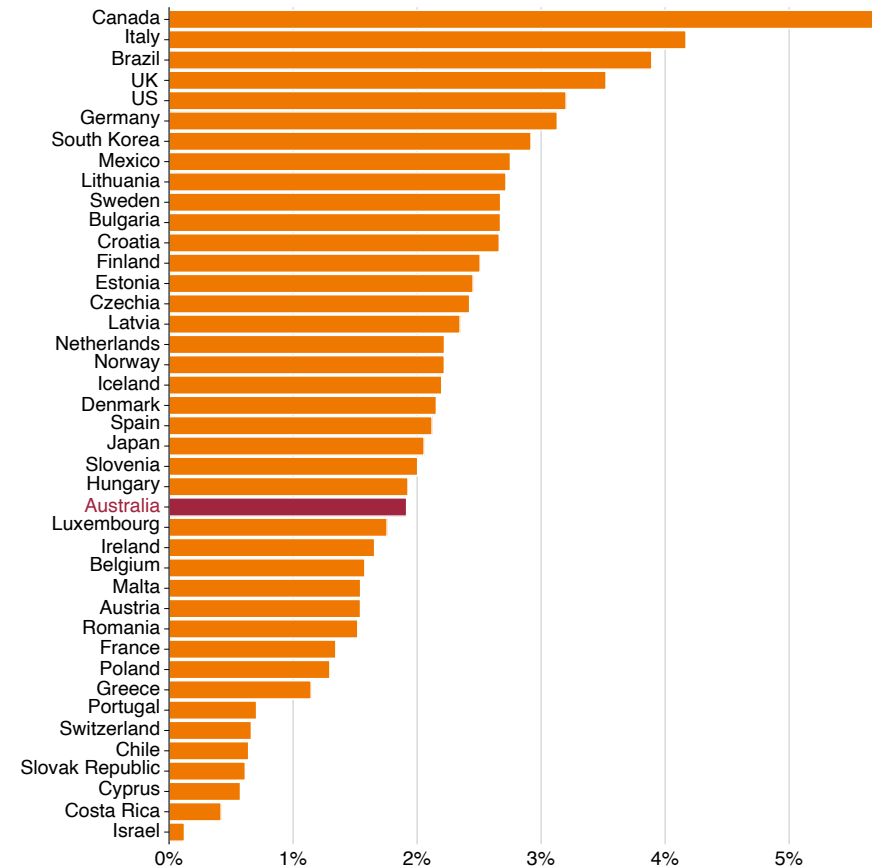
A key way to build resilience to a health crisis is to have a healthy community. More than 80 per cent of a person’s health is caused by factors outside of health care, and most health risk factors are preventable. There is ample evidence that commonsense prevention policies can make health outcomes fairer.

Yet, as a share of health spending, Australia invests far less in preventing illness than most other wealthy countries, and just a fraction of what Canada and the UK spend (see Figure 2.1).<sup>31</sup> The federal government should boost investment in prevention through a new national funding agreement.

The new Australian Centre for Disease Control (ACDC) – which has a goal of working ‘to prevent and control non-communicable (chronic) and communicable (infectious) diseases’<sup>32</sup> – will play a key role in driving investment in prevention programs. It should provide advice on focus areas for funding, and report on progress against targets.

**Figure 2.1: Australia spends less of its health budget on prevention than many other OECD countries**

Government spending on preventative care as a percentage of total health spending, OECD countries, 2019



Source: OECD (2022).

31. Breadon (2023).

32. Department of Health and Aged Care (2023b).

But to ensure success, prevention must have an equity lens. The ACDC should have closing health gaps as a core part of its responsibilities over the long-term. Prioritising investment in disadvantaged communities, where health risk factors are greater, will be a key part of this.

A focus on health gaps would also better equip the ACDC to coordinate equitable responses in any future pandemics. A key finding from the 2022 independent review into government responses to the COVID pandemic was that policies ‘were too often designed and implemented without proper regard for the inequalities in our society and the vulnerabilities of key communities’.<sup>33</sup>

## 2.2 Reforms to primary care are key to prevent and treat chronic conditions

Investing in primary care, such as GPs, is the best way to manage chronic disease and keep pressure off the rest of the health system. While some important federal government reforms have begun,<sup>34</sup> more work is needed to ensure disadvantaged Australians aren’t left behind.

The federal government must ensure that GPs are resourced properly to better treat and manage complex diseases, particularly in disadvantaged communities. A new funding model is being introduced,<sup>35</sup> but it must be expanded to all patients over time, with adjustments for patient need, including health, demographic, and socio-economic factors.

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33. Paul Ramsay Foundation (2022).

34. Department of Health and Aged Care (2023c).

35. The federal government has announced that it will introduce a blended funding model for some patients, as part of reforms called ‘My Medicare’. But the blended funding model seems to apply only to people in residential aged care and people who attend hospital frequently: DHAC (2023).

Even after those changes, some patients in rural areas won’t be able to get primary care. The federal government – through Primary Health Networks – will need to work with the states to co-commission services in these areas, including by partnering with local hospitals. Co-commissioning will require setting out what services are needed, paying for those services, measuring the results, and making sure those results keep improving.<sup>36</sup>

These reforms would make it easier for Australians, particularly disadvantaged Australians, to avoid and manage chronic health conditions, making them less vulnerable in a future pandemic.

## 2.3 Australia needs a vaccine equity strategy

The federal and state governments should commit to a vaccine equity strategy, as part of a new national vaccination agreement.<sup>37</sup>

If Australia builds a fairer vaccination program now, it would not only help improve access to COVID vaccinations in the short- and medium-term, but enable governments to effectively ramp up systems when a new pandemic emerges.

### Targets to boost coverage and equity

Australia lacks targets for adult vaccinations. The federal government should set vaccination targets for COVID to mobilise effort and clarify the roles and responsibilities of federal and state governments. The targets should be ambitious, but also achievable and cost-effective.

The federal government should also set targets for continual increases in COVID vaccination rates for Indigenous people,<sup>38</sup> and for geographic

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36. See more detail on this in Grattan’s primary care report: Breadon et al (2022).

37. See further in our vaccine equity report: Breadon and Burford (2023).

38. Given disparate starting points, these targets could be at regional level, for example Statistical Area Level 4 in the ABS Statistical Classification of Geography.

areas with the lowest levels of adult vaccination.<sup>39</sup> These targets would help ensure more equal access to vaccination across Australia, and are similar to ones that have worked for child vaccination.

Setting adult vaccination targets would ensure that effective reporting infrastructure is in place for the next pandemic, enabling governments to more quickly understand and respond to disparities in vaccination rates.

### A tiered approach to ensuring equitable access to vaccines

There are lots of reasons for low vaccine uptake, but many are not about individual choice, and most can be overcome. That means there is no excuse for the vast vaccination gaps in Australia (see Section 1.2 on page 8).

For some people, barriers to vaccination are easily overcome, while others face complex challenges and require intensive support. There is evidence that vaccination can be increased for people with low and high barriers alike, but different solutions are needed.<sup>40</sup>

A new national vaccination system should include three tiers of measures – universal, targeted, and tailored – to ensure that all Australians, including disadvantaged Australians, have the best chance of getting needed vaccinations (see Figure 2.2).<sup>41</sup>

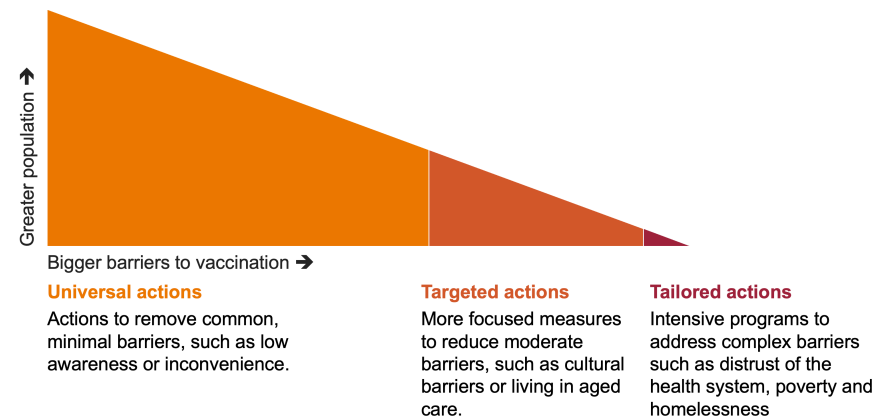
- 1. Universal measures** should include, for example, public health campaigns and vaccination surges. The ACDC – working with the federal and state governments – should play a key role in

39. Statistical Area Level 3 in the ABS Statistical Classification of Geography, as is currently used for child vaccination equity targets.

40. The WHO uses the term ‘Population health management’: identifying communities with similar characteristics and needs so providers can move from one-size-fits-all to targeted and tailored interventions: WHO (2023).

41. See, for example: WHO (2023) and Marmot (2010).

**Figure 2.2: A new national vaccination system should include universal, targeted, and tailored approaches**



Source: Grattan Institute.

supporting intensive, evidence-based, and well-coordinated communication campaigns.

- 2. Targeted measures** should include, for example, informing and educating patients, providing vaccines in settings patients can get to, and doing this in a culturally appropriate way. Primary Health Networks should lead this, working with service providers, including GPs.
- 3. Tailored measures** should include, for example, training and supporting ‘Community Champions’ to promote vaccination and counter misinformation, and working with communities to provide vaccinations in community settings, or in people’s homes. The ACDC should provide states with evidence on the types of initiatives that work well in low-vaccination communities, and states should then adapt the programs to the needs of local communities, working with local organisations, including Primary Health Networks.

Getting a new national vaccination system in place now will put Australia in a strong position for the next pandemic.

Reaching out and co-designing services in harder-to-reach communities is hard to do, and much harder in the midst of a crisis when fear and misinformation are at their peak. But if robust systems are in place come the next pandemic, it will be much easier to ensure all Australians get the best chance of receiving available vaccinations.

#### **2.4 Boosting access to COVID antivirals**

Reforms to primary care, as proposed in Section 2.2 on page 13, will help ensure people get COVID treatments more quickly.

A new needs-based primary care funding model, with loadings for demographic and socio-economic factors, will improve care for disadvantaged Australians, and better enable them to get COVID antivirals. But these reforms to primary care will take time, so the federal government must urgently take other steps to improve Australians' access to COVID antivirals.

Primary Health Networks should monitor antiviral uptake in their catchments and across clinics. The federal Department of Health should support this by using de-identified individual-data from the Australian Bureau of Statistics, and the department should commission specific services in areas where prescription of antivirals are low.

Primary Health Networks should also work with state governments to improve supply of antivirals in harder-to-reach communities (see Section 2.3).

Like targets and tailored programs for vaccination, this will help get the system ready for future pandemics. Primary Health Networks, GP clinics, and pharmacies will have the data, tools, and skills to better serve groups that are missing out on antivirals today. That will set them

up to get treatments to the people who need them most next time, avoiding the failures we have seen during the COVID pandemic.

## Bibliography

- ABS (2018a). *Dietary behaviour*. Australian Bureau of Statistics.
- \_\_\_\_\_ (2018b). *National Health Survey: First results*. Australian Bureau of Statistics. <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/national-health-survey-first-results/latest-release> (visited on 31/01/2023).
- \_\_\_\_\_ (2020). 'Table 4.3 Selected health characteristics, by sex and Indigenous status, 2017–18 and 2018–19, Proportion of persons' [data set], *National Aboriginal and Torres Strait Islander Health Survey*. Australian Bureau of Statistics. Accessed 11 September 2023. <https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/national-aboriginal-and-torres-strait-islander-health-survey/2018-19>.
- \_\_\_\_\_ (2022a). 'Table 3.3 Current smoker status(a) by population characteristics – Persons aged 18 years and over, Proportion' [data set], *Insights into Australian smokers, 2021-22*. Australian Bureau of Statistics. Accessed 11 September 2023. <https://www.abs.gov.au/articles/insights-australian-smokers-2021-22>.
- \_\_\_\_\_ (2022b). 'Table 15.2 Persons 15 years and over, Experience of dental services in the last 12 months by selected characteristics: Proportion of persons and 95% Margin of Error of proportion' [data set], *Patient Experiences*. Australian Bureau of Statistics. Accessed 11 September 2023. <https://www.abs.gov.au/statistics/health/health-services/patient-experiences/2021-22>.
- \_\_\_\_\_ (2022c). 'Table 12.3 Number of selected chronic conditions by population characteristics by age – All persons, Proportion' [data set], *Health Conditions Prevalence*. Australian Bureau of Statistics. Accessed 11 September 2023. <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/health-conditions-prevalence/2020-21>.
- \_\_\_\_\_ (2022d). *COVID-19 Mortality in Australia: Deaths registered until 30 September 2023*. Australian Bureau of Statistics.
- \_\_\_\_\_ (2022e). *Patient Experiences in Australia: Summary of Findings*. Australian Bureau of Statistics. <https://www.abs.gov.au/statistics/health/health-services/patient-experiences/latest-release>.
- \_\_\_\_\_ (2023a). *COVID-19 Mortality in Australia: Deaths registered until 31 July 2023*. Australian Bureau of Statistics. <https://www.abs.gov.au/articles/covid-19-mortality-australia-deaths-registered-until-31-july-2023#deaths-due-to-covid-19-country-of-birth>.
- \_\_\_\_\_ (2023b). *Patient Experiences in Australia: Summary of Findings*. Australian Bureau of Statistics. <https://www.abs.gov.au/statistics/health/health-services/patient-experiences/latest-release>.
- \_\_\_\_\_ (2023c). *COVID-19 Mortality in Australia: Deaths registered until 30 September 2023*. Australian Bureau of Statistics. <https://www.abs.gov.au/articles/covid-19-mortality-australia-deaths-registered-until-30-september-2023>.
- ABS MADIP (2023). *Multi-Agency Data Integration Project (MADIP) Modular Product, ABS Datalab*. Australian Bureau of Statistics.
- AIHW (n.d.). *Aboriginal and Torres Strait Islander Health Performance Framework: Measures*. Australian Institute of Health and Welfare. <https://www.indigenoushpf.gov.au/measures>.
- \_\_\_\_\_ (2011). *Contribution of chronic disease to the gap in mortality between Aboriginal and Torres Strait Islander people and other Australians*. Australian Institute of Health and Welfare. <https://www.aihw.gov.au/reports/indigenous-australians/contribution-of-chronic-disease-to-the-gap-in-mort/summary>.
- \_\_\_\_\_ (2020). 'Table D2.15.6: Rate ratios (Indigenous: non-Indigenous), by age group, 2017–18 and 2018–19' [data set], *Aboriginal and Torres Strait Islander Health Performance Framework*. Australian Institute of Health and Welfare. Accessed 11 September 2023. <https://www.indigenoushpf.gov.au/measures/2-15-tobacco-use>.
- \_\_\_\_\_ (2021a). '1A. Number (deaths, YLL, YLD, DALY), crude rate and age-standardised rate (YLL, YLD, DALY) by socioeconomic group, sex and year' [data set], *Australian Burden of Disease Study 2018: Interactive data on disease burden*. Australian Institute of Health and Welfare. Accessed 11 September 2023. <https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths/burden-of-disease>.



- AIHW (2021b). '1A. Number (deaths, YLL, YLD, DALY), crude rate and age-standardised rate (YLL, YLD, DALY) by remoteness area, sex and year' [data set], *Australian Burden of Disease Study 2018: Interactive data on disease burden*. Australian Institute of Health and Welfare. Accessed 11 September 2023. <https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths/burden-of-disease>.
- \_\_\_\_\_ (2021c). *One-third of disease burden caused by modifiable risk factors*. Australian Institute of Health and Welfare. <https://www.aihw.gov.au/news-media/media-releases/2021-1/august/one-third-of-disease-burden-caused-by-modifiable-r>.
- \_\_\_\_\_ (2021d). *Medicare-subsidised GP, allied health and specialist health care across local areas: 2019–20 to 2020–21*. <https://www.aihw.gov.au/reports/primary-health-care/medicare-subsidised-health-local-areas-2020-21/data>.
- \_\_\_\_\_ (2022a). '6B. Age-standardised rate (YLL, YLD, DALY), rate ratio, rate difference and percent contribution to gap by sex, year and disease group' [data set], *Australian Burden of Disease Study 2018: Interactive data on disease burden among Aboriginal and Torres Strait Islander people*. Australian Institute of Health and Welfare. Accessed 11 September 2023. <https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths/burden-of-disease/overview>.
- \_\_\_\_\_ (2022b). *Overweight and obesity*. Australian Institute of Health and Welfare. <https://www.aihw.gov.au/reports/australias-health/overweight-and-obesity>.
- \_\_\_\_\_ (2022c). *Australia's health 2022*. Australian Institute of Health and Welfare. <https://www.aihw.gov.au/reports-data/australias-health>.
- \_\_\_\_\_ (2023a). 'Table S5: Age-standardised and crude proportions of overweight and obese persons aged 18 and over, by remoteness area, socioeconomic areas and sex, 2017–18' [data set], *Overweight and obesity*. Australian Institute of Health and Welfare. Accessed 11 September 2023. <https://www.aihw.gov.au/reports/overweight-obesity/overweight-and-obesity/contents/about>.
- \_\_\_\_\_ (2023b). 'Table S7: Age-standardised proportion of overweight and obese adults aged 18 and over, by Indigenous status and sex, 2011–12 to 2018–19' [data set], *Overweight and obesity*. Australian Institute of Health and Welfare. Accessed 11 September 2023. <https://www.aihw.gov.au/reports/overweight-obesity/overweight-and-obesity/contents/about>.
- \_\_\_\_\_ (2023c). *National Bowel Cancer Screening Program: monitoring report 2023*. Australian Institute of Health and Welfare. <https://www.aihw.gov.au/getmedia/d91f8937-09f0-49f6-8b76-2649b7468de8/aihw-can-154.pdf?inline=true>.
- \_\_\_\_\_ (2023d). 'Costs interactive 4: Financial barriers to dental care by selected characteristics, 2017–18' [data set], *Oral health and dental care in Australia*. Australian Institute of Health and Welfare. Accessed 11 September 2023. <https://www.aihw.gov.au/reports/dental-oral-health/oral-health-and-dental-care-in-australia/contents/costs>.
- Baker, P. (2014). "Fat nation: why so many Australians are obese and how to fix it". *The Conversation*. <https://theconversation.com/fat-nation-why-so-many-australians-are-obese-and-how-to-fix-it-23783>.
- Berchet et al (2022). Berchet, C., Bijlholt, J. and Ando, M. *Socio-economic and ethnic health inequalities in COVID-19 outcomes across OECD countries*. Health Working Papers No. 153. Organisation for Economic Co-operation and Development. [https://one.oecd.org/document/DELSA/HEA/WD/HWP\(2023\)5/en/pdf](https://one.oecd.org/document/DELSA/HEA/WD/HWP(2023)5/en/pdf) (visited on 19/11/2023).
- Bernal et al (2022). Bernal, A. J. et al. "Molnupiravir for Oral Treatment of Covid-19 in Nonhospitalized Patients". *N Engl J Med* 386, pp. 509–520. <https://www.nejm.org/doi/full/10.1056/NEJMoa2116044>.
- Biddle et al (2022). Biddle, N., Welsh, J., Butterworth, P., Edwards, B. and Korda, R. "Socioeconomic determinants of vaccine uptake: July 2021 to January 2022". *Australian National University*. <https://www.health.gov.au/sites/default/files/documents/2022/03/socioeconomic-determinants-of-vaccine-uptake-july-2021-to-january-2022.pdf>.
- Breadon, P. (2023). "Failure to invest in prevention increases health inequality". *Croakey*. <https://grattan.edu.au/news/failure-to-invest-in-prevention-increases-health-inequality/>.
- Breadon et al (2022). Breadon, P., Romanes, D., Fox, L., Bolton, J. and Richardson, L. *A new Medicare: Strengthening general practice*. Report No. 2022-14. Grattan Institute. <https://grattan.edu.au/report/a-new-medicare-strengthening-general-practice/>.
- Breadon, P. and Burford, I. (2023). *A fair shot: How to close the vaccination gap*. Report No. 2023-12. Grattan Institute.

- Breadon, P. and Fox, L. (2023). "On health, some Australians don't get a fair go". *The Conversation*. <https://grattan.edu.au/news/on-health-some-australians-dont-get-a-fair-go/#:~:text=People%20who%20live%20in%20rural,ill%20health%20than%20other%20Australians.>
- Breadon et al (2023). Breadon, P., Fox, L., Emslie, O. and Richardson, L. *The Australian Centre for Disease Control (ACDC): Highway to health*. Report No. 2023-03. Grattan Institute.
- Byambasuren et al (2023). Byambasuren, O., Stehlik, P., Clark, J., Alcorn, K. and Glasziou, P. "Effect of covid-19 vaccination on long covid: systematic review". *BMJ Medicine* 2.1. <https://bmjmedicine.bmj.com/content/2/1/e000385>.
- Department of Health and Aged Care (2023a). *Updated eligibility for oral COVID-19 treatments*. Australian Government.
- \_\_\_\_\_ (2023b). *Australian Centre for Disease Control*. Australian Government.
- \_\_\_\_\_ (2023c). *National Cabinet Statement on a better future for the federation*. Australian Government.
- DHAC (2023). *Introducing MyMedicare*. Department of Health and Aged Care. <https://www.health.gov.au/sites/default/files/2023-09/introducing-mymedicare-fact-sheet.pdf>.
- Duckett et al (2022). Duckett, S., Stobart, A. and Lin, L. *Not so universal: How to reduce out-of-pocket healthcare payments*. Grattan Institute. <https://grattan.edu.au/report/not-so-universal-how-to-reduce-out-of-pocket-healthcare-payments/>.
- Haigh et al (2023). Haigh, F., Alloun, E., Standen, C., Olliek, M., Page, J. and Wise, M. *Equity-focused health impact assessment of the COVID-19 pandemic in Sydney Local Health District: Summary Report*. UNSW.
- Liu et al (2023). Liu, B. et al. "Effectiveness of COVID-19 vaccination against COVID-19 specific and all-cause mortality in older Australians: a population based study". *The Lancet Regional Health—Western Pacific* 40. [https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065\(23\)00246-8/fulltext](https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065(23)00246-8/fulltext).
- Magliano et al (2009). Magliano, D. J., Peeters, A., Vos, T., Sicree, R., Shaw, J., Sindall, C., Haby, M., Begg, S. J. and Zimmet, P. Z. "Projecting the burden of diabetes in Australia – what is the size of the matter?" *Australian and New Zealand Journal of Public Health* 33 (6), pp. 540–543. <https://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2009.00450.x>.
- Marmot, M. (2010). *Fair society, healthy lives : the Marmot Review : Strategic review of health inequalities in England post-2010*. Institute of Health Equity. <https://www.parliament.uk/globalassets/documents/fair-society-healthy-lives-full-report.pdf>.
- Marquina et al (2022). Marquina, C. et al. "Future burden of cardiovascular disease in Australia: impact on health and economic outcomes between 2020 and 2029". *European Journal of Preventive Cardiology* 29 (8), pp. 1212–1219. <https://pubmed.ncbi.nlm.nih.gov/33686414/>.
- OECD (2022). *OECD.Stat*. Accessed 31 October 2022. Organisation for Economic Co-operation and Development. <https://stats.oecd.org/>.
- OWID (n.d.). *The disease burden by cause*. Accessed 14 October 2022. <https://ourworldindata.org/burden-of-disease#the-disease-burden-by-cause>.
- Paul Ramsay Foundation (2022). *Fault Lines: an independent review into Australia's response to COVID-19*.
- Pfizer (2021). *Pfizer Announces Additional Phase 2/3 Study Results Confirming Robust Efficacy of Novel COVID-19 Oral Antiviral Treatment Candidate in Reducing Risk of Hospitalization or Death*. Pfizer.
- Savira et al (2021). Savira, F., Ademi, Z., Wang, B. H., Kompa, A. R., Owen, A. J., Liew, D. and Zomer, E. "The Preventable Productivity Burden of Kidney Disease in Australia". *Journal of the American Society of Nephrology* 32 (4), pp. 938–949. <https://jasn.asnjournals.org/content/32/4/938>.
- Tran et al (2023). Tran, V.-T., Perrodeau, E., Saldanha, J., Pane, I. and Ravaud, P. "Efficacy of first dose of covid-19 vaccine versus no vaccination on symptoms of patients with long covid: target trial emulation based on ComPaRe e-cohort". *BMJ Medicine* 2.1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9978748/>.
- Treasury (2010). *Australia to 2050: future challenges*. 2010 intergenerational report overview. Australian Government. [https://treasury.gov.au/sites/default/files/2019-03/IGR\\_2010\\_Overview.pdf](https://treasury.gov.au/sites/default/files/2019-03/IGR_2010_Overview.pdf).

Vanichkachorn et al (2023). Vanichkachorn, G., Gilman, E., Ganesh, R., Mueller, M., Swift, M., Breeher, L. and Murad, M. H. "Potential reduction of post-acute sequelae of SARS-CoV-2 symptoms via vaccination". *Journal of Investigative Medicine*, p. 10815589231191812.

<https://journals.sagepub.com/doi/10.1177/10815589231191812>.

WHO (2023). "Population health management in primary health care: a proactive approach to improve health and well-being". *Primary Health Care Policy Paper Series*. <https://www.who.int/europe/publications/i/item/WHO-EURO-2023-7497-47264-69316>.