

Indigenous-specific health checks during the COVID-19 pandemic

Web report | Last updated: 30 May 2023 | Topic: First Nations people

About

Following several years of annual growth, the numbers of Indigenous-specific health checks fell in 2020 and 2021 from the pre-pandemic peak in 2019 and were comparable to the numbers in 2017 and 2018. Telehealth health checks, an option introduced at the onset of the COVID-19 pandemic, were initially used commonly but saw a gradual decline over time.

Cat. no: IHW 273

Findings from this report:

- The start of the COVID-19 pandemic coincided with the end of continuous annual growth in Indigenous health check numbers
- In 2021, there were 10% fewer Indigenous health checks than in 2019, the year before the pandemic
- Telehealth was most frequently used for health checks when first introduced, then gradually declined in use
- · Numbers of Indigenous health checks were particularly low during months with lockdowns and reduced population mobility

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Summary

This report explores the impacts of COVID-19 and associated restrictions on the number of Indigenous-specific MBS health check services provided to Aboriginal and Torres Strait Islander people between January 2020 and December 2021. The analysis examines the impacts of COVID-19 by year and month at the national, state/territory and Greater Capital City Statistical Areas levels.

Following a decade of annual growth, 2020 and 2021 were the first years without an increase in Indigenous-specific health check numbers. The number of health checks delivered during the first 2 years of the pandemic were somewhat lower than during the peak year of 2019 despite the continuing growth of the Indigenous population. New telehealth options for Indigenous-specific health checks were introduced at the start of the pandemic. These were used most commonly shortly after being introduced, but then the numbers of health checks delivered this way declined gradually. The impact of the pandemic on the use of Indigenous health checks varied across Australia. Tasmania, which was relatively unaffected by cases and restrictions, stood out as the state that appeared to be the least affected during 2020 and 2021.

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Background

For additional information, refer to the annual Indigenous health checks and follow-ups report.

The Coronavirus disease 2019 (COVID-19) is an airborne disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). In March 2020, the first wave of COVID-19 began in Australia and the World Health Organisation (WHO) declared a global COVID-19 pandemic (WHO 2020). Other prominent waves were the second wave in Victoria, which started in June 2020 and peaked in August of the same year (Stobart and Duckett 2022), as well as the outbreaks associated with the Delta and Omicron strains of COVID-19, which started in June and December 2021, respectively (ATAGI 2021, Bennett 2021).

The outbreaks have been associated with a range of regulations and mandates to reduce the spread of the disease within and from affected areas. Federal and state governments also introduced responses in other forms, such as economic stimulus packages and additional access to health services, to help the Australian population through a challenging time.

Key data considerations

This report focuses on the first two years of the COVID-19 pandemic, 2020 and 2021, and, to a limited extent, some of the years prior for comparison. Due to the analysis being limited to the period up to December 2021, only the beginning of the wave of COVID-19 that unfolded in Australia during the summer of 2021-22 is covered.

Telehealth and Aged Care items:

To reduce community transmission of COVID-19, and to protect patients and health care providers, a number of Medicare Benefits Schedule (MBS) items were introduced when COVID-19 first broke out in Australia. In relation to Indigenous-specific health checks, the new MBS items were:

- Indigenous health checks available through video-conference or telephone: 92004, 92011, 92016, 92023
- face-to-face Indigenous health checks available to people living in residential aged care facilities (RACF): 93470, 93479.

Throughout this report, the term 'telehealth' will be used to refer to services provided via video-conference and telephone.

Focus on numbers of health checks:

This report is mainly focused on comparisons of numbers of delivered Indigenous health checks during and before the COVID-19 pandemic - including by delivery mode (face-to-face or telehealth). The figures show how the annual numbers of health checks have changed over time in different parts of Australia and how the month-to-month variation in numbers during the pandemic compares with what was happening before the pandemic.

Other reports on Indigenous health checks normally also have a strong focus on rates of health checks - the proportion of Indigenous Australians who received one within certain periods (see <u>Indigenous health checks and follow-ups</u>). Rates make it possible to compare the use of health checks in regions with different population sizes and in different years in regions with changing population sizes. Because of the focus on patterns of monthly variation within regions, a decision was made to use numbers of health checks rather than rates in this report. This makes the presentation of month-to-month variation much more straightforward and robust as there is no requirement to produce monthly population estimates, but also means that more than one health check delivered to the same person is included in the same year in some cases, because people are able to receive health checks 9 months apart.

The number of people who identify as Indigenous Australians has been growing, as reflected by the ABS' population estimates from Census years. Preliminary estimates from the 2021 Census and Post Enumeration Survey showed a 23% increase in the Indigenous Australian population since 2016, rising from 798,400 people to 984,000 (ABS 2021b, ABS 2016). This is far higher than the 10% increase that was projected, based on natural growth assumptions (ABS 2019).

The changing population size makes comparisons of health check numbers across years challenging, since the numbers alone are not a perfect reflection of how rates of health checks may have changed between years. For example, in areas where the Indigenous population has grown over 2 or more years, a constant number of health checks would correspond to a decrease in service use, in terms of health checks per 100 population.

Greater Capital City Statistical Areas:

Greater Capital City Statistical Areas (GCCSA) are geographical areas from the Australian Statistical Geography Standard (ASGS), made up of Statistical Areas Level 4 (SA4). The GCCSAs are designed such that a geographical area is assigned for each of the 8 state and territory capital cities, in a way that includes people who regularly socialise, shop, or work in the city, even if they live in the areas surrounding the city. The remainder of each state or territory is assigned its own geographical area.

GCCSA are named after the capital cities and states they correspond to, generally following a structure of Greater Capital City and Rest of State or Territory. Exceptions to these are the Australian Capital Territory, all of which is included as a single area in the GCCSA classification, and Other Territories, which cover Jervis Bay, Christmas Island, Cocos (Keeling) Island and Norfolk Island as a separate entity (ABS 2021a).

Suppression:

The health check numbers from Other Territories are incorporated into the numbers for New South Wales (for analysis based on States and Territories), or Rest of New South Wales (for analysis based on GCCSA), to avoid small cell problems. Additionally, suppression was applied for cases with fewer than 6 health checks, fewer than 6 patients, fewer than 6 providers, and where 85% or more of the health checks were delivered by a single provider or 90% or more of the health checks were delivered by two providers. Consequential suppressions have also been applied.

References

ABS (Australian Bureau of Statistics) (2016) Estimates of Aboriginal and Torres Strait Islander Australians, ABS website, accessed 7 December 2022.

ABS (2019) Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2006 - 2031, ABS website, accessed 15 November 2022.

ABS (2021a) Australian Statistical Geography Standard (ASGS) Edition 3, July 2021 - June 2026, ABS website, accessed 9 February 2023.

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Bennett CM (2021) Learning to live with COVID-19: time for a new approach, Public Health Res Pract 31(3):e3132110, doi: doi.org/10.17061/phrp3132110.

Stobart A and Duckett S (2022) 'Australia's Response to COVID-19' Health Econ Policy Law 17(1):95-106, doi: 10.1017/S1744133121000244.

WHO (World Health Organisation) (2020) WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020, WHO website, accessed 9 March 2022.

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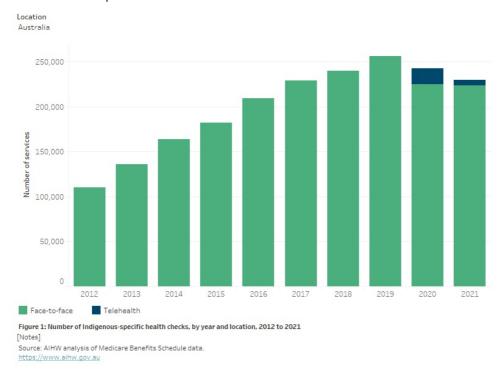
Yearly snapshot

Following several years of growth in Indigenous-specific health checks, the number of health checks delivered decreased in both 2020 and 2021, coinciding with the COVID-19 pandemic (Figure 1).

Throughout 2020, a total of 242,590 health checks were delivered - a 5.4% reduction compared to the 256,359 health checks delivered in 2019. In 2021, the number of health checks delivered decreased again, down to 229,950, or a 10.3% reduction from the 2019 numbers. Telehealth accounted for a relatively small portion of the health checks delivered; 17,722 health checks, or 7.3%, in 2020 and 6,616 health checks, or 2.9%, in 2021 (Figure 1).

Figure 1: Number of Indigenous-specific health checks, by year, location and telehealth status 2012 to 2021

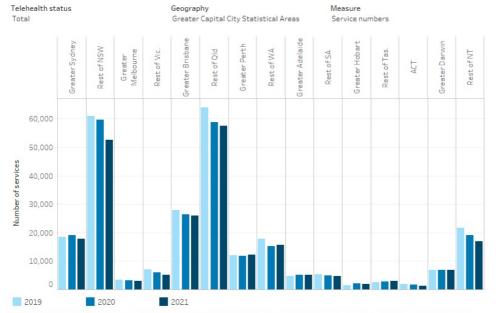
An interactive column graph showing the number of Indigenous-specific health checks by year and telehealth status. Location can be selected from a dropdown menu. Refer to table 'CV01' in data tables.



Most states and territories experienced a decrease in health check services since the national peak in 2019. Proportionally, the largest decreases were in the Australian Capital Territory, where numbers had decreased by 18.9% in 2020 and 39.9% in 2021, relative to the all-time high of 2,012 in 2019; and in Victoria, where the numbers had decreased by 13.6% in 2020 and 22.1% in 2021, relative to the highest recorded annual number of 10,480 in 2019. Tasmania was the only jurisdiction where the number of health checks increased, with numbers up by 19.9% in 2020 and by 19.3% in 2021, relative to the 4,140 health checks recorded in 2019 (Figure 2).

Figure 2: Number of Indigenous-specific health checks and change since 2019, by year, location and telehealth status, 2019 to 2021

An interactive column graph showing the number of Indigenous-specific health checks by location from 2019 to 2021, as well as the change since 2019. Telehealth status and geographic level can be selected from a dropdown menu. Refer to table 'CV02' in data tables.



Figure~2: Number, or change~in~number~from~2019, of~Indigenous-specific~health~checks, by~year,~telehealth~status, and~geography,~2019~to~2021~figure~2.

Source: AIHW analysis of Medicare Benefits Schedule data. https://www.aihw.gov.au

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Monthly variation

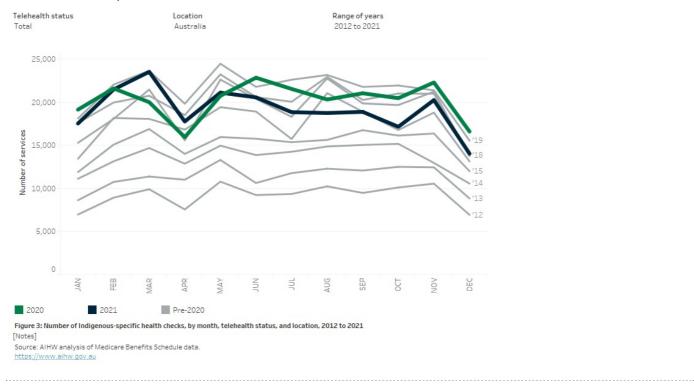
The use of Indigenous-specific health checks varies from month-to-month. In some areas, particularly those with a high population of Indigenous Australians, the annual increase in health checks was accompanied by monthly variation following similar patterns in most years before the pandemic. For example, the number of health checks was consistently relatively low in December and January in New South Wales, Queensland and Western Australia. In addition to the dip around the turn of the year, health check numbers have tended to be relatively low in April and relatively high in March, May and August. In areas with smaller Indigenous populations, the variation in health check numbers has been less predictable (Figure 3).

Some of these patterns have continued after the onset of the pandemic; many places saw a pronounced dip in health check numbers in April 2020 and 2021, and December and January continued to be months with relatively few health checks. However, the falls in health check numbers in these months were, in many places, more pronounced than those seen in the years before the pandemic (Figure 3).

In other months, following the beginning of the first wave of the pandemic in March 2020, most areas saw the numbers of health checks delivered decrease, relative to recent pre-pandemic levels (Figure 3). The patterns are explored in detail later in this report, including comparisons with population mobility data.

Figure 3: Number of Indigenous-specific health checks, by month and location, 2012 to 2021

An interactive line graph showing the number of Indigenous-specific health checks by year and month. Location and telehealth status can be selected from a dropdown menu. Refer to table 'CV03' in data tables.



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Monthly variation

To contextualise the impacts of the pandemic on the use of health checks in different months and jurisdictions, the 'relative time that people spent at residences', based on Google's mobility reports, was used as a combined indicator of:

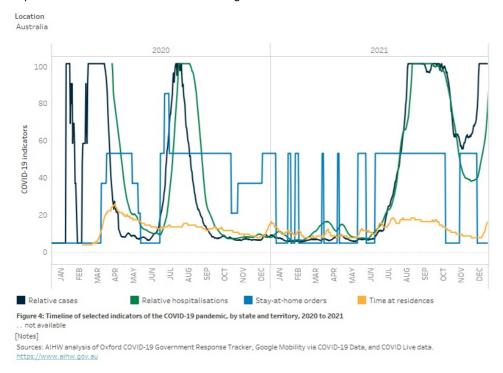
- the degree of COVID-19 within the community
- the extent of stay-at-home requirements
- general hesitance in the population to move about freely.

The relative time spent at residences is defined such that positive values of the parameter correspond to people on average spending more time at home than in comparison to the pre-pandemic reference period. More information about alternative indicators of COVID-19, as well as a more detailed definition of time spent at residences, can be found under Progression of the pandemic.

Progression of the pandemic

Comparing the variation in health check use during the COVID-19 pandemic to the progression of the pandemic requires indicators of key circumstances that may influence the willingness and ability of people to visit health services. Examples of possible indicators could be the number of COVID-19 cases in the (Indigenous or overall) population, health outcomes related to COVID-19 or the extent of government restrictions such as stay-at-home orders. Four possible indicators were analysed for this report: relative case numbers, relative hospitalisation numbers, the extent of stay-at-home orders and relative time spent at residences (Figure 4).

Figure 4: Timeline of selected indicators of the COVID-19 pandemic, by state and territory, 2020 to 2021 An interactive line graph showing four indicators relating to the COVID-19 pandemic. States and territories can be selected from a dropdown menu. Refer to tables 'CV04a' through 'CV04d' in data tables.



These COVID-19 indicators were chosen based on data availability and their potential to influence the use and delivery of Indigenous-specific health checks. The 4 indicators are interrelated. Surges in case numbers result in surges in hospitalisation numbers a short time after. Stay-at-home orders (lockdown restrictions) increase the time that people spend at home, which reduces the numbers of cases, hospitalisations and deaths. Community perception of the risk-level and consequences of catching COVID-19 influence people's behaviour as well. If the data were available, another potentially informative indicator would have been the capacity of health services to deliver Indigenous-specific health checks since this may have varied in response to the changing circumstances.

The analysis for this report made use of COVID-19 case (COVID Live 2022a) and hospitalisation (COVID Live 2022b) numbers, based on the total Indigenous and non-Indigenous population, expressing the numbers as a percentage of the highest number reported up until (and including) the current day for the given location. For example, if the highest 7-day average case number reported up till 30-Jun-2020 had been 500, and the 7-day average case number on 30-Jun-2020 were 100, then the relative cases on that date would be 20%. This type of analysis was chosen so that smaller waves could still be seen, even if they were dwarfed by later waves, given that they would have been

considered relatively prominent at the time. Mobility was represented by the Australian subnational output on stay-at-home orders from the Oxford COVID-19 Government Response Tracker (ANU 2022, Hale et al. 2021) and anonymised data from mobile applications reporting on relative time spent at residences (Box 1), as reported by Google (COVID-19 Data 2022).

All 4 indicators presented in this analysis were found to have some level of correlation with the variation in health check numbers and with the other indicators. However, the indicator that tended to have the strongest association with the variation in health check numbers was the relative time spent at residences (Box 1).

Box 1: Time spent at residences

Mobility in terms of time people spent at home was calculated using anonymised data from Google Maps and other applications in which the user had turned Location History on. It is expressed as a percentagewise change from a baseline value, representing how much time people typically spent at home at the beginning of 2020, before lockdown restrictions were introduced. For example, a score of 0% means people were spending around the same amount of time at home as during the baseline period, while a score of 20% means people were spending around 20% more time at home than during the baseline period.

The baseline was calculated using a median for each of the days of the week, based on a 5-week period from 3 January to 6 February 2020. The daily mobility is reported as a 7-day moving average (COVID-19 Data 2022).

It is important to note that the anonymised data on mobility were collected from the general population, not only from Indigenous Australians, and are therefore not a perfect reflection of variation in the mobility of Indigenous Australians specifically, especially for regions where the Indigenous population and total population have considerably different geographic distributions. The baseline period also covered part of the summer holidays and some of the time of the year that is the wet season in parts of Australia with a pronounced wet season.

Figure 5 shows the relative time spent at residences alongside the change in Indigenous health check use in 2020 and 2021 from prior years. The monthly changes in service use were mostly decreases when comparing 2020 and 2021 with 2019, which was the year with the highest number of Indigenous health checks. Because the month-to-month pattern in health check numbers is somewhat variable, particularly in areas with small Indigenous populations, Figure 5 also includes the option to compare the 2020 and 2021 service use to the numbers in 2017 and 2018.

Comparing the health check numbers in 2020 and 2021 with the numbers from 2019, health check numbers generally tended to decrease when the relative time spent at residences was high across Australia (Figure 5). This relationship was particularly strong in New South Wales and Victoria, which were impacted strongly by COVID-19 (Figure 4, in 'Progression of the pandemic'), and less obvious in states with smaller Indigenous Australian populations, and where the pattern of month-to-month variation differed significantly across the years (Figure 3). The changes in health check use relative to 2019 were at times of notable size, sometimes at a scale comparable to that seen during the initial wave of COVID-19 in April 2020, without an accompanying change in the time spent at residences. This suggests that this mobility measure only partially captures the reasons why the month-to-month variation in use of health checks over the course of 2020 and 2021 was different to what was seen before the pandemic.

Figure 5: Relative time spent at residences and change from prior years in number of Indigenous-specific health checks, by month, telehealth status, and location, 2020 to 2021

An interactive line graph showing the number of Indigenous-specific health checks in each month of 2020 and 2021 relative to the same month in an earlier year, by telehealth status. Population mobility, represented by relative time spent at residences, is shown as well. Location and comparison year can be selected from a dropdown menu. Refer to tables 'CV05' and 'CV04d' in data tables.



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ANU (Australian National University) (2022) Oxford COVID-19 Government Response Tracker: Australian Subnational dataset, ANU website, accessed 20 December 2022.

COVID-19 Data (2022) Mobility data, covid19data.com.au website, accessed 7 September 2022.

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Monthly variation

The introduction of telehealth health checks may have prevented a more dramatic reduction in health check numbers. Australia-wide, 7.3% of the health checks in 2020 and 2.9% of the health checks in 2021 were delivered through telehealth, but the proportions were much higher in some parts of the country. In 2020, telehealth was used for nearly 1 in 5 health checks in *Greater Hobart* and *Greater Melbourne* (19% and 18%, respectively), which had the highest proportions.

In 2021, the proportion of health checks delivered through telehealth more than halved compared with 2020, with *Greater Adelaide* having the highest proportion at 9.0% of health checks. The use of telehealth health checks was proportionally lowest in Western Australia, with *Greater Perth* and the *Rest of Western Australia* among the 3 areas with the lowest proportion of telehealth use in Australia both in 2020 and 2021 (Figure 6).

Figure 6: Number or percentage of Indigenous-specific health checks delivered via telehealth, by year and geography, 2020 to 2021

An interactive column graph showing the number and percentage of Indigenous-specific health checks conducted via telehealth, by location, in 2020 and 2021. Refer to table 'CV06' in data tables.

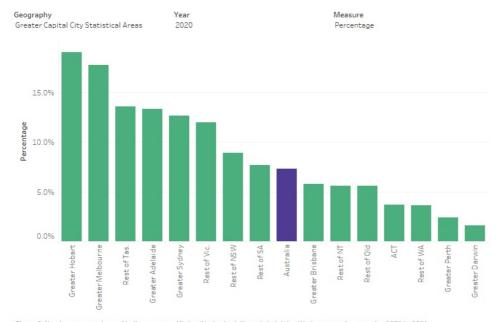


Figure 6: Number or percentage of Indigenous-specific health checks delivered via telehealth, by year and geography, 2020 to 2021

[Notes]

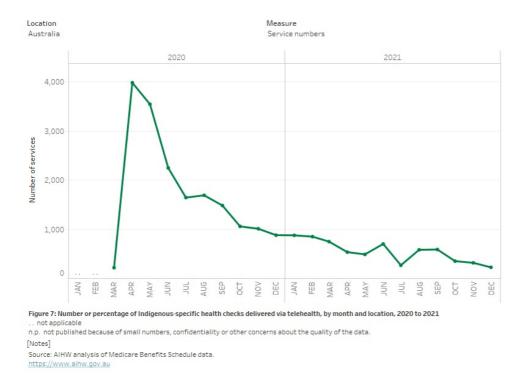
Source: AIHW analysis of Medicare Benefits Schedule data.

https://www.aihw.gov.au

After the introduction of the telehealth MBS items in late March 2020, the use of telehealth health checks peaked in April and May of 2020, followed by a downward trend until the end of 2021, with a few exceptions. Most notably, there was a spike in telehealth use during the second COVID-19 wave in Victoria (July to October 2020) (Figure 7).

Figure 7: Number or percentage of Indigenous health checks delivered via telehealth, by month and location, 2020 to

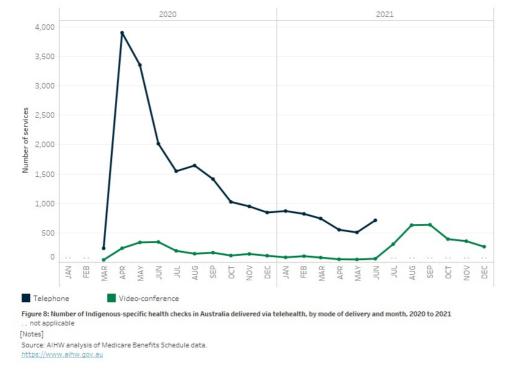
An interactive line graph showing the number and percentage of Indigenous-specific health checks conducted via telehealth, by month, in 2020 and 2021. Location can be selected from a dropdown menu. Refer to table 'CV07' in data tables.



Out of the 2 modes of telehealth delivery, telephone items were much more commonly used than video-conference items between March 2020 and June 2021 - accounting for 92% of all telehealth health checks conducted during that period (Figure 8). However, the telephone delivery option was removed from July 2021, around the same time that the extended Delta outbreaks began in New South Wales, Victoria and the Australian Capital Territory. With only video-conference available for telehealth delivery, the resulting use of telehealth items appeared to be somewhat dampened compared to earlier outbreaks (Figure 8). This suggests that video-conferencing may be less accessible than telephone options among those seeking health checks, which would align with research on the barriers to online activities that some groups of Australians particularly experience (Indigenous Australians; socioeconomically disadvantaged people; older people; people with disabilities; people living in rural and remote areas) (Hall Dykgraaf et al. 2022, Thomas et al. 2020).

Figure 8: Number of Indigenous-specific health checks in Australia delivered via telehealth, by mode of delivery and month, 2020 and 2021

An interactive line graph showing the number of Indigenous-specific health checks conducted via video-conference and by telephone, by month, in 2020 and 2021. Refer to table 'CV08' in data tables.



References

Hall Dykgraaf S, Desborough J, Sturgiss E, Parkinson A, Dut GM, Kidd M (2022) 'Older people, the digital divide and use of telehealth during the COVID-19 pandemic', Australian Journal of General Practice, 51(9):721-724.

Thomas J, Barraket J, Wilson CK, Holcombe-James I, Kennedy J, Rennie E, Ewing S, MacDonald T (2020) Measuring Australia's digital divide: the Australian Digital Inclusion Index 2020, Royal Melbourne Institute of Technology and Swinburne University of Technology, Melbourne.

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Technical notes

Data sources

Medicare Benefits Schedule (MBS) data

The MBS is a listing of Medicare services that are subsidised by the Australian Government. It is part of the Medicare Program that is managed by the Department of Health and Aged Care, and administered by Services Australia.

The statistics in this publication are based on AIHW analysis of the Medicare Benefits Schedule data, accessed through the Department of Health and Aged Care's Enterprise Data Warehouse.

In this report, data are presented for Indigenous-specific health checks - listed as items 715, 228, 92004, 92011, 92016, 92023, 93470 and 93479 on the MBS.

The data presented on these items do not provide a complete picture of all health checks provided to Indigenous Australians. Some Indigenous Australians may be receiving similar primary health care through other MBS items (that is, items that are not specific to Indigenous Australians). A person may also be provided with equivalent care from a health care provider who is not eligible to bill Medicare for example, through state- or territory-funded primary health care services and public hospitals, which are ordinarily not eligible to bill to Medicare.

MBS Indigenous-specific health checks

All Indigenous Australians, regardless of age, are eligible for an Indigenous-specific health check. There are 8 Indigenous-specific health check items listed on the MBS:

- MBS item 715 (available from 1 May 2010)
- MBS item 228 (available from 1 July 2018)
- MBS items 93470 and 93479 in Residential Aged Care Facilities (available from 10 October 2020 to 30 June 2022)
- Video-conference MBS items 92004 and 92011 (available from 30 March 2020)
- Telephone MBS items 92016 and 92023 (available from 30 March 2020 to 30 June 2021)

MBS items 715, 92004, 92016 and 93470 relate to health checks provided by a vocationally registered general practitioner (VR GP), while items 228, 92011, 92023 and 93479 relate to health checks provided by non-vocationally registered GPs (non-VR GPs). In all cases, suitably qualified health professions can assist under the supervision of the practitioner. The requirements of an Indigenous-specific health check, which are set out in the relevant sections of the MBS, include an assessment of the patient's health, including their physical, psychological and social wellbeing. The check also assesses what preventive health care, education and other help should be offered to the patient to improve their health and wellbeing.

Indigenous Australians can receive an Indigenous-specific health check once in a 9-month period. If the GP or medical practitioner bulk-bills the item, there is no charge to the patient.

COVID-19 and temporary telehealth items

In March 2020, measures to reduce the risk of community transmission of COVID-19, including limiting public gatherings and reducing nonessential travel, were put in place across Australia. In response to these restrictions, a range of temporary telehealth MBS items were also made available to allow continuity of care for patients, as well as to provide protection for both patients and health care providers from the risk of COVID-19.

Temporary telehealth items for Indigenous-specific health checks have been made available from March 2020 (telephone items were discontinued after June 2021):

- Health checks provided via videoconference: MBS item 92004 (provided by VR GPs) and MBS item 92011 (provided by non-VR GPs)
- Health checks provided via telephone (when videoconferencing is not available): MBS item 92016 (provided by VR GPs) and MBS item 92023 (provided by non-VR GPs).

While many required aspects of an Indigenous-specific health check can be completed as a remote service via telehealth, some components can only be delivered through face-to-face consultation with the patient. This could include any necessary physical examinations such as a blood pressure check. Therefore, for an Indigenous health check undertaken by telehealth to be processed via Medicare all components of the health check, including both remotely delivered and face-to-face, must be completed.

Throughout most of the pandemic, telehealth items were restricted to medical practitioners with an existing clinical relationship with patients. Exemptions to this rule included patients of Indigenous-specific primary health care services, infants, persons experiencing homelessness, persons with COVID-19 and patients in declared COVID-19 hotspots.

Selected indicators of the COVID-19 pandemic

Included in this report, are data on 4 indicators related to the COVID-19 pandemic in Australia covering most of 2020 and 2021:

Relative COVID-19 case numbers

This metric compares reported new COVID-19 case numbers (for the total population) with the highest reported case numbers to-date.

Daily case numbers were downloaded from the <u>COVID Live website</u> on 17 January 2023, which sourced data from official jurisdictional reporting.

'New cases' were used, rather than 'Net cases', as new cases were reported more widely, while net cases were subject to retroactive changes, including significant downward adjustments (e.g. when duplicates and false positives were removed).

See 'Technical notes for the COVID-19 indicators' further on, for more information.

Relative COVID-19 hospitalisation numbers

This metric compares reported hospitalisation numbers (for the total population) with the highest reported hospitalisation numbers to-date.

Daily hospitalisation numbers were downloaded from the <u>COVID Live website</u> on 17 January 2023, which sourced data from official jurisdictional reporting.

See 'Technical notes for the COVID-19 indicators' further on, for more information.

Stay-at-home orders

This metric summarises the extent of 'lockdown' restrictions.

Stay-at-home orders' data were downloaded from the Oxford COVID-19 Government Response Tracker's Australian GitHub repository on 31 August 2022, based on analysis by Oxford University's Blavatnik School of Government and the Australian National University's Centre for Social Research and Methods.

See 'Technical notes for the COVID-19 indicators' further on, for more information.

Relative time spent at residences

This metric reflects how much time people were spending at home, relative to a baseline period in January and February of 2020, based on anonymised mobile phone data and other devices using location services.

Data were downloaded from the COVID-19 Data website on 14 April 2022, which sourced data from Google Mobility reporting.

See 'Technical notes for the COVID-19 indicators' further on, for more information.

Technical notes for the MBS analysis

Counting services

This report presents data on the number of services - that is, the number of health checks provided in the specified period.

In any given period (for example, 12 months), the number of health check patients may be smaller than the number of services provided. This occurs when patients have received more than 1 health check in that period.

Dates and reference periods

The MBS data set includes information on the date the service was provided, as well as the date that the claim was processed by Medicare. These dates can differ due to a time lag between when a service is provided and when the claim for that service is processed by Medicare Australia.

The data in this report relate to services provided between 1 January 2012 and 31 December 2021, which were processed on or before 31 August 2022. Data are reported by date of service as this more accurately reflects when the service was provided. Due to lags between date of service and date of processing, there will be a small proportion of services provided during the reference period that are not captured in these data. For example, if a service was provided on 31 December 2021, but not processed until 1 September 2022, it will not be included in the data.

Location

Geographic correspondences (sometimes referred to as concordances or mapping files) can be used where the location information in an original data is not available at the geographic level required for analysis and reporting. Geographic correspondences are a mathematical method for reassigning data from one geographic classification (for example, a postcode) to a new geographic classification (for example, states and territories).

Geographic correspondences enable postcode data to be reported at various other geographic levels. However, there are limitations associated with the use of postcode data for this purposes. Key issues include:

- postcodes do not fit neatly into the boundaries of geographic areas typically used for statistical reporting
- · defining geographic boundaries for postcodes is an imprecise process postcodes can also change over time
- people may not keep their postcode information up-to-date with Medicare
- postcodes linked to patient records may belong to PO boxes, making correspondence to small geographic areas less accurate.

Due to these issues, various decisions need to be made about how best to allocate the postcode data to geographic regions. There will be some degree of inaccuracy in the resultant estimates, which will affect data in certain areas more than others.

For this report, postcodes were re-assigned to 2 different geographies (based on the 2016 Australian Statistical Geography Standard) - states/territories and Greater Capital City Statistical Areas (GCCSA). Where postcodes fell across the boundaries of multiple areas (for example, multiple states/territories), data were apportioned based on the population distribution of Indigenous Australians, according to AIHW analysis of Australian Bureau of Statistics (ABS) population estimates at 30 June 2016.

Postcode information is included in each MBS service record, allowing each service to be corresponded independently, even where a patient may have had more than one service within a given reference period.

Records with invalid postcode information could not be allocated to sub-national regions.

Comparisons with other reports

As described in the <u>Dates and reference periods</u> section, the data in this report are based on the date of service (rather than date of processing), as this more accurately reflects when the service was provided. Data in this report may differ to those published elsewhere based on date of processing. It may also differ to data published elsewhere based on date of service, where the date of processing cut-off is different. Location may be also determined in a slightly different way to some other reports (see <u>Location</u>, presented earlier).

Technical notes for the COVID-19 indicators

Relative COVID-19 case numbers

This metric compares reported COVID-19 case numbers with the highest reported case numbers to-date.

Derivation steps:

- 1. Daily case numbers were compiled for each jurisdiction.
- 2. Rolling 7-day averages were calculated, based on each day and the previous 6 days (floored at zero).
- 3. Proceeding forward one day at a time, the maximum rolling average was tracked, inclusive of the then 'current' date.
- 4. Each day's rolling average was expressed as a percentage of the maximum rolling average to date, resulting in a measure ranging from 0% to 100%. Where the rolling average was 0, the percentage was hard-coded to 0%.

Note: Reported COVID-19 cases may have deviated substantially from the true number of cases, especially at times when testing rates were lower.

Relative COVID-19 hospitalisation numbers

This metric compares reported COVID-19 hospitalisation numbers with the highest reported hospitalisation numbers to-date.

Derivation steps:

- 1. Daily hospitalisation numbers were compiled for each jurisdiction.
- 2. Rolling 7-day averages were calculated, based on each day and the previous 6 days. Data gaps dating after the beginning of the series resulted in failed averages.
- 3. Proceeding forward one day at a time, the maximum rolling average was tracked, inclusive of the then 'current' date.
- 4. Each day's rolling average was expressed as a percentage of the maximum rolling average 'to date', resulting in a measure ranging from 0% to 100%. Where the rolling average was 0, the percentage was hard-coded to 0%.

Note: Data include hospitalisations principally for COVID-19 and included hospitalisations with (but not necessarily originally for) COVID-19, including asymptomatic cases.

Stay-at-home orders

This metric summarises the extent of 'lockdown' restrictions.

The metric is derived from 2 variables:

'C6_Stay at home requirements' - an ordinal scale

- 0 no measures
- 1 recommend not leaving house
- 2 require not leaving house with exceptions for daily exercise, grocery shopping, and 'essential' trips
- 3 require not leaving house with minimal exceptions (e.g. allowed to leave once a week, or only one person can leave at a time, etc.)

Blank - no data

'C6_Flag' - a binary flag for scope (geographic or specific to unvaccinated adults)

- 0 targeted
- 1 general

Blank - no data

To convert the 2 variables to an index ranging from 0 (no requirements) to 100 (a general requirement not to leave the house with minimal exceptions), following the Oxford COVID-19 Government Response Tracker's methodology:

= $100 \times [\{ C6_Stay \text{ at home requirements - } 0.5 \times (1 - C6_Flag) \} \div 3]$, but with 0 as the lowest possible value.

The variables are recorded at eight different jurisdictional levels, describing the jurisdictional level at which the policies were applied. The levels are denoted by their jurisdictional level and a suffix. For the purposes of the calculation of the stay-at-home order metric used in this report, the values of the 'C6_Stay at home requirements' and 'C6_Flag' variables were taken for the data with the "TOTAL" suffix. The use of these jurisdictional levels imply the following application of policies across the different jurisdictions:

NAT_TOTAL - Describes the overall policy environment that applies to residents of the country, including policies set by sub-national governments, where those values are more stringent than country-wide action

STATE_TOTAL - Describes the overall policy environment that applies to residents of the state, including policies set by the national government, where those values are more stringent than state-level action

Note: The Stay-at-home orders metric does not necessarily scale with the degree of restrictions experienced by the general population or Indigenous population, since the main component of the indicator (C6_Stay at home requirements) is ordinal only, and also reflects the strictest settings issued within the jurisdiction. The binary flag pointing to scope (C6_Flag), which may have large importance in reality, has a relatively small influence over the scale of the indicator.

Relative time spent at residences

This metric reflects how much time people were spending at home, relative to a baseline period in January and February of 2020, based on anonymised mobile phone data and other devices using location services.

Specifically, the baseline was calculated using a median for each of the days of the week, based on a five-week period from 3 January to 6 February 2020 - before lockdown restrictions were introduced.

For some examples, a score of 0% means people were spending around the same amount of time at home as during the baseline period, while a score of 20% means people were spending around 20% more time at home than during the baseline period. Scores were reported as a rolling 7-day average.

Notes:

- 1. The anonymised data on mobility were collected from the general population, not only from Indigenous Australians, and are therefore not a perfect reflection of variation in the mobility of Indigenous Australians specifically, especially for regions where the Indigenous population and total population have considerably different geographic distributions.
- 2. The baseline period covered part of the summer holidays and wet season (in tropical zones), which may be atypical periods in terms of mobility.







Data

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