



Australian Government
Department of Health



Australian National Disease Surveillance Plan for COVID-19

Version 3.0, June 2022



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Version history

Version	Date	Reason/Key Changes	Endorsed by
Version 3.0	June 2022	<p>The key changes are:</p> <ul style="list-style-type: none"> • the addition of new indicators and data sources relating to: <ul style="list-style-type: none"> - SARS-CoV-2 infection counts and rates - monitoring severe disease and death - vaccine coverage and effectiveness - monitoring SARS-CoV-2 variants - intensive care and aged care workforce absenteeism due to COVID-19 exposure • the removal of indicators relating to: <ul style="list-style-type: none"> - contact tracing performance - monitoring testing counts - clusters and outbreaks 	AHPPC
Version 2.0	April 2021	<p>The key changes were the addition of new indicators relating to:</p> <ul style="list-style-type: none"> • transmission potential • forecasts of epidemic activity • adherence to recommended behavioural practices • viral genomics • excess mortality • Paediatric Inflammatory Multisystem Syndrome Temporally associated with SARS-CoV-2 • forecasts of hospital inpatient occupancy due to COVID-19 	AHPPC
Version 1.0	May 2020	Initial Release	AHPPC

Background

The Australian National Disease Surveillance Plan for COVID-19 (the Plan) is a national framework for the collection, analysis and reporting of health-related data on COVID-19 to support national policy responses to the COVID-19 pandemic. It guides both internal reporting within government, and public-facing reporting, across all jurisdictions and nationally. Data collected under the Plan inform decision making by tracking COVID-19 in as close to real time as possible, anticipating future epidemic activity, monitoring severe disease and health service impact and evaluating interventions.

Disease surveillance relies on a range of systems that are managed in partnerships involving the Australian Government, state and territory governments, health research institutions, clinicians, public and private laboratories, other health sector stakeholders and the community. Accordingly, the Plan recognises and builds on established systems for communicable disease surveillance in Australia.

The Plan is a living document and is updated in line with changes to the characteristics of the virus and the disease it causes, emerging technologies for disease control and surveillance, and Australia's policy response. With high levels of vaccination in Australia, restrictions on movement and mixing have largely been lifted, and international borders opened. Concurrently, the highly transmissible Omicron variant, first appearing in late 2021, has led to a rapid rise in infections, with major consequences for surveillance. The pre-Omicron testing strategy relied largely on centralised PCR testing. This has now been augmented with the widespread use of self-administered rapid antigen tests (RATs), with individuals required to report positive results. Furthermore, contact tracing procedures which led to the detection of many infections, particularly among people with no or few symptoms, have been abandoned due to the volume of cases. The combination of changes in epidemiology, public health measures, and behaviour mean reported COVID-19 diagnoses, which once served as our key surveillance mechanism, now represent a substantial undercount of the true number of infections in the community. The Plan has therefore included additional data collection and analysis strategies to meet the goals of surveillance.

This version of the Plan (3.0, June 2022) also reflects the shift towards the management of COVID-19 consistent with other infectious diseases, focussing on prevention and management of serious illness, hospitalisation and death. Despite this shift, a comprehensive plan for surveillance remains essential to monitor trends in both infections and severe disease, in order to adapt the response and services as needed and maintain the capacity of the health system to function effectively. The continuing emergence of variants internationally has highlighted the need for a surveillance system which is able to detect new variants as early as possible in Australia, monitor their spread and impact, and respond accordingly.

Scope

The goals of the Plan are to monitor trends in cases, infections and immunity, morbidity and mortality, impact on the health system, and the effectiveness of interventions. The Plan outlines the breadth of surveillance intelligence which Australian governments at the national and jurisdictional level consider necessary to support responses that are proportionate to the ever-evolving level of risk. The Plan recognises that disease transmission and impact, and therefore surveillance requirements, may vary across the country, between population groups and over time.

Governance and implementation

The Communicable Diseases Network Australia (CDNA) is responsible for the strategic direction and national coordination of COVID-19 surveillance, including developing and monitoring the Plan. Each new iteration of the Plan is developed by CDNA taking into account the technical feasibility and sustainability of the data sources needed to report against the indicators. Each iteration is submitted for endorsement by CDNA's parent committee, the Australian Health Protection Principal Committee (AHPPC).

Disease surveillance approaches adopted in the Plan

Methodological approaches underpinning the Plan are outlined at [Appendix 1](#) and include case-based reporting, syndromic and sentinel surveillance, hospital-based surveillance, mortality reporting, serosurveillance, surveillance of virus genomics and behavioural surveillance. All approaches have strengths and limitations, so they need to be used in combination to provide optimal information for public health decision-making.

Reporting against the indicators in the Plan relies on data sources and analysis methods which are funded through a range of mechanisms at the national and jurisdictional level. The ability to report on the indicators is subject to change over time in line with funding decisions. Reporting on some indicators in the Plan is contingent on the establishment of new data sources, analysis or reporting mechanisms. Details of current and proposed data sources are at [Appendix 2](#).

The Plan also refers to several new and evolving surveillance approaches. A national population infection survey to detect SARS-CoV-2 infection is proposed as an additional data source for key indicators. Such surveys are novel in the Australian context. Detection of SARS-CoV-2 in wastewater has been in place as a surveillance mechanism since 2020 but wastewater testing has not been nationally coordinated as a surveillance activity. Both these approaches are being reviewed to determine whether they can be fully integrated in useful and sustainable ways at a national level. See [Appendix 2](#) for further details on the population infection survey and wastewater surveillance.

Specific populations

The Plan recognises the need to continue to enhance our understanding of the impact of COVID-19 on specific populations, including Aboriginal and Torres Strait Islander people, people from culturally and linguistically diverse (CALD) backgrounds and people with a disability. These groups are a priority for surveillance and response as they may be at higher risk of both SARS-CoV-2 infection and/or its serious outcomes.

Considerations for Aboriginal and Torres Strait Islander populations have been incorporated into the Plan to ensure relevant data collection (including the output of point of care testing for remote communities), analysis and reporting are carried out, and that these data are reviewed, reported, and interpreted with an appropriate cultural lens. More detail on data considerations for Aboriginal and Torres Strait Islander populations is at [Appendix 3](#).

As outlined in [Appendix 4](#) enhancing monitoring of COVID-19 cases and severe disease in specific populations is recommended for consideration as a high priority.

COVID-19 Surveillance goals, objectives and indicators

Each surveillance goal covers a set of related *objectives*, each of which is achieved through the calculation of one or more *indicators*. The indicators can in turn be disaggregated to allow finer-grained interpretation. Considerations of COVID-19 data collection and interpretation with regards to Aboriginal and Torres Strait Islander peoples are provided at [Appendix 3](#).

GOAL 1: Monitor cases diagnosed in Australia

Objective	No.	Indicator	Disaggregation	Data Source	Reporting
Track incidence and characteristics of cases to inform risk mitigation strategies	1.1	Counts and rate (per 100,000/week) of COVID-19 notifications	<ul style="list-style-type: none"> Age and sex Test type, PCR or RAT Jurisdiction Metropolitan vs non-metropolitan area of residence Aboriginal and Torres Strait Islander status Acquisition status (locally or overseas acquired) Symptom status Reason-for-test 	<ul style="list-style-type: none"> NNDSS Survey of random samples of cases Population infection survey (proposed) 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report and Common Operating Picture National COVID-19 Weekly Indigenous Report (Aboriginal and Torres Strait Islander data only) Communicable Diseases Intelligence Journal
Monitor sequencing and SARS-CoV-2 viruses to inform risk mitigation strategies	1.2	Number and proportion of new SARS-CoV-2 PCR-confirmed cases sequenced	<ul style="list-style-type: none"> Jurisdiction Metropolitan vs non-metropolitan area of residence Severe illness (Admitted to ICU or died) 	<ul style="list-style-type: none"> NNDSS (data provided by Communicable Diseases) Genomics Network laboratories collaborating with AusTrakka) 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report
	1.3	Number and proportion of sequenced SARS-CoV-2 variants	<ul style="list-style-type: none"> Characterisation of virus by: 	<ul style="list-style-type: none"> AusTrakka 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report

			<ul style="list-style-type: none"> - Variant (including date new variant identified) - Pango lineage • Characterisation of host: - Jurisdiction - Metropolitan vs non-metropolitan area of residence 		
Monitor cases in Residential Aged Care Facilities (RACF)	1.4	Counts of cases in residents in RACF	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • Australian COVID-19 Aged Care Incident Response System 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture
Monitor outbreaks in Residential Aged Care Facilities (RACF)	1.5	No. of active outbreaks in RACF	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • Australian COVID-19 Aged Care Incident Response System 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture

Why is this important?

Goal 1 is important because it provides direct tracking of the cases of COVID-19 diagnosed in the community. Its objectives are met by case-reporting methods.

Indicator 1.1 tracks and describes diagnosed infections (i.e., cases) of COVID-19 (confirmed by a PCR test or a self-reported RAT) to provide a direct measure of cases in the community, and their demographic and other characteristics. This indicator achieves this objective, while recognising that the infections that are diagnosed and reported are only a subset of the total number of infections occurring in the community.

Indicators 1.2 and 1.3 track the appearance of new variants of SARS-CoV-2 in the community through genetic sequencing and provide information on potential changes in the virus that might affect its infectiousness, disease-causing severity and ability to evade vaccine and/or infection acquired immunity. Indicator 1.2 tracks what proportion of detected infections have been sequenced, while Indicator 1.3 reports on the proportions of specific viral variants that are circulating.

Indicators 1.4 and 1.5 monitor outbreaks in residential aged care facilities recognising that residents of these facilities are at the highest risk of severe COVID-19. This is due to the nature and duration of contact with other residents, visitors and carer staff, as well as the elevated risk of poor outcome if infected due to age and underlying illness.

GOAL 2: Monitor trends in infections and immunity

Objective	No	Indicator	Disaggregation	Data Source	Reporting
Monitor the natural and vaccine-based immunity to inform model-based forecasts and assess impact of vaccination programs	2.1	Prevalence of relevant serological markers	<ul style="list-style-type: none"> Age and sex Jurisdiction, Statistical Area level 4 	<ul style="list-style-type: none"> National SARS-CoV-2 serosurvey 	<ul style="list-style-type: none"> Regular reporting – schedule to be determined
Determine SARS-CoV-2 infection over time	2.2	SARS-CoV-2 infection counts and rates	<ul style="list-style-type: none"> Age and Sex Jurisdiction Local government area Aboriginal and Torres Strait Islander status 	<ul style="list-style-type: none"> Population infection survey (proposed) 	<ul style="list-style-type: none"> Regular reporting – schedule to be determined
Monitor the rate of spread of SARS-CoV-2 to plan public health measures and estimate their impact	2.3	Effective reproduction number of SARS-CoV-2 for active cases in the population	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> NNDSS Survey of random sample of cases Population infection survey (proposed) 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report Common Operating Picture
Assess population-average ability of the virus to spread (whether or not it is present).	2.4	Transmission potential of SARS-CoV-2	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> COVID-19 Public Adherence Survey (Behavioural Survey) Population-level mobility data from 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report Common Operating Picture

Objective	No	Indicator	Disaggregation	Data Source	Reporting
				Google data stream <ul style="list-style-type: none"> • Australian Immunisation Register • Population infection survey (proposed) • Refer to situational awareness modelling in Appendix 2 	
Predict future trends in cases of COVID-19	2.5	Short-term forecasts of daily case incidence of COVID-19	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • As above 	<ul style="list-style-type: none"> • Weekly Situational Assessment of COVID-19 in Australia
	2.6	Weekly proportion of 'fever/ARI' testing positive for SARS-CoV-2 through systematic and/or targeted sampling	<ul style="list-style-type: none"> • Aboriginal and Torres Strait Islander status • Remoteness • Aboriginal Community Controlled Health Organisation (ACCHO) or not 	<ul style="list-style-type: none"> • GPRC data • FluTracking • Australian Sentinel Practices Research Network (ASPREN)/ Victorian Sentinel Practice Influenza Network (VicSPIN) 	
	2.7	Proportion of 'fever/ARI' in the community tested for COVID-19	<ul style="list-style-type: none"> • Age and sex • Jurisdiction • Metropolitan vs non-metropolitan area of residence 	<ul style="list-style-type: none"> • FluTracking • GPRC data 	

Objective	No	Indicator	Disaggregation	Data Source	Reporting
			<ul style="list-style-type: none"> Aboriginal and Torres Strait Islander status 		
	2.8	Number of 'fever/ARI' presentations and/or rate of 'fever/ARI' in the community	<ul style="list-style-type: none"> Age and sex Jurisdiction Metropolitan vs non-metropolitan area of residence Aboriginal and Torres Strait Islander status 	<ul style="list-style-type: none"> FluTracking GPRC data ASPREN/VicSPIN 	
	2.9	Proportion of people with COVID-19 symptoms who report being tested for SARS-CoV-2	<ul style="list-style-type: none"> Age Sex Aboriginal and Torres Strait Islander status Jurisdiction Metropolitan vs non-metropolitan area of residence Vaccination status RAT/PCR 	<ul style="list-style-type: none"> COVID-19 Public Adherence Survey (Behavioural Survey) FluTracking 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report
	2.10	Count of PCR testing	<ul style="list-style-type: none"> Age and sex Jurisdiction Metropolitan vs non-metropolitan area of residence Aboriginal and Torres Strait Islander status Time/population 	<ul style="list-style-type: none"> Weekly report to NIR from S/T health departments in collaboration with laboratories 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report Common Operating Picture
	2.11	Proportion of PCR tests conducted that are positive	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report

Objective	No	Indicator	Disaggregation	Data Source	Reporting
					<ul style="list-style-type: none"> Common Operating Picture
	2.12	Estimate of the proportion of all COVID-19 infections that are detected	<ul style="list-style-type: none"> Jurisdiction Age Vaccination status 	<ul style="list-style-type: none"> Combination of findings from data sources listed above 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance report

Why is this important?

Goal 2 is important because it provides information on the true number of infections occurring in the community, recognising that the indicators reported under Goal 1 will inevitably be substantial under-counts. The objectives are addressed by indicators that draw upon a variety of data sources which feed into a range of calculations that are used to achieve the goal.

Indicator 2.1 tracks the immunological signature of past SARS-CoV-2 infection in the population, through determining the proportion of survey participants who have characteristic antibodies. Indicator 2.2 aims to directly measure the prevalence of current SARS-CoV-2 infection through random population surveys.

Indicators 2.3, 2.4 and 2.5 are jurisdiction-level estimates of the current rate of spread of SARS-CoV-2 infection and vaccination obtained through mathematical modelling, using as inputs the case-reporting indicators described under 1.1, as well as other indicators described under Goal 2. Indicator 2.3 is the effective reproduction number, often abbreviated as R_{eff} which shows whether transmission is rising or falling, depending on whether it is above or below one. Indicator 2.4 is the ability of the virus to spread, averaged over the whole population of the jurisdiction, based on the mixing behaviour and immune status of the population. Indicator 2.5 is a prediction of the daily incident cases over the next month. All three indicators are calculated from a range of data sources and indicators described under Goals 1, 2 and 5.

Indicators 2.6, 2.7, 2.8 and 2.9 are calculated from reports from clinical services participating in collaborative surveillance networks and various forms of population survey. They provide information on the proportion of people with COVID-19 symptoms who are being tested and the proportion of those tested who turn out to have SARS-CoV-2 infection. They are key inputs to the calculations that lead to indicators 2.3, 2.4 and 2.5.

Indicators 2.10 and 2.11 provide information on the coverage and outcome of testing via PCR.

Indicator 2.12 draws on other indicators in this goal and indicator 1.1, to provide an estimate of the proportion of SARS-CoV-2 infections occurring in the community that are actually diagnosed and reported. This estimate is used for prediction of trends in infections, cases, and health system load.

GOAL 3: Monitor morbidity and mortality

Objective	No.	Indicator	Disaggregation	Data Source	Reporting
Monitor the characteristics and outcomes of cases in intensive care units (ICUs) to identify at-risk groups for severe disease	3.1	Counts and characteristics of COVID-19 patients in ICUs	<ul style="list-style-type: none"> • Age and sex • Aboriginal and Torres Strait Islander status • Jurisdiction • Metropolitan vs non-metropolitan area of residence • Vaccination Status • Comorbidities • Reason for admission (primary COVID, condition exacerbated by COVID, with COVID) • Length of stay • Variant type • Ventilated Y/N • Outcome (including death) 	<ul style="list-style-type: none"> • SPRINT-SARI • ANZICS Core/NNDS 	<ul style="list-style-type: none"> • National COVID-19 Monthly Surveillance Report
Monitor the characteristics and outcomes of hospitalised cases to identify at-risk groups for severe disease	3.2	Median duration of stay among those admitted to hospital	<ul style="list-style-type: none"> • Age and sex • Aboriginal and Torres Strait Islander status • Jurisdiction • Metropolitan vs non-metropolitan area of residence • Vaccination status • Comorbidities 	<ul style="list-style-type: none"> • FluCAN 	<ul style="list-style-type: none"> • National COVID-19 Monthly Surveillance Report

Objective	No.	Indicator	Disaggregation	Data Source	Reporting
	3.3	Proportion of hospitalised cases requiring admission to ICU	<ul style="list-style-type: none"> As per 3.2 	<ul style="list-style-type: none"> FluCAN 	<ul style="list-style-type: none"> National COVID-19 Monthly Surveillance Report
Monitor the incidence, risk factors and outcomes of paediatric inflammatory multisystem syndrome	3.4	Counts of paediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2	<ul style="list-style-type: none"> Age Sex Aboriginal and Torres Strait Islander status Jurisdiction ICU admission and outcome status 	<ul style="list-style-type: none"> PAEDS 	<ul style="list-style-type: none"> National COVID-19 Monthly Surveillance Report
	3.5	Proportion of PIMS-TS admitted to ICU	<ul style="list-style-type: none"> As per 3.4 	<ul style="list-style-type: none"> PAEDS 	<ul style="list-style-type: none"> National COVID-19 Monthly Surveillance Report
Monitor mortality directly and indirectly related to COVID-19	3.6	Count of COVID-19 mortality	<ul style="list-style-type: none"> Age Sex Jurisdiction Vaccination status Variant Aboriginal and Torres Strait Islander status 	<ul style="list-style-type: none"> NNDSS Provisional death registrations, ABS 	<ul style="list-style-type: none"> National COVID-19 Monthly Surveillance Report

Objective	No.	Indicator	Disaggregation	Data Source	Reporting
	3.7	Count and proportion of deaths among cases	<ul style="list-style-type: none"> • Age • Sex • Jurisdiction • Vaccination status • Variant • Aboriginal and Torres Strait Islander status • Residential Aged Care Facility status • ICU status 	<ul style="list-style-type: none"> • ANZICS core • NNDSS • My Aged Care Data Portal 	
	3.8	Count of all-cause mortality (including excess mortality)	<ul style="list-style-type: none"> • Age • Sex • Vaccination status • Aboriginal and Torres Strait Islander status • Residential Aged Care Facility status • Other socioeconomic and geodemographic status • Certified cause of death • Jurisdiction • Expected versus observed 	<ul style="list-style-type: none"> • Provisional death registrations, ABS • Regular ABS mortality data reporting • Provisional death registrations in Multi Agency Data Integration Project (MADIP) integrated data asset 	

Why is this important?

Goal 3 is important because it quantifies the most significant health impacts of COVID-19, severe disease and mortality. With widespread distribution of infection, and high case numbers, it is now important to distinguish health outcomes that are coincidental with SARS-CoV-2 infection from those that are due to infection.

Indicators 3.1, 3.2 and 3.3 track the characteristics (including vaccination status and SARS-CoV-2 variant type) and outcomes of hospitalised COVID-19 cases.

Indicators 3.4 and 3.5 relate to paediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2 (abbreviated to PIMS-TS), also known as multisystem inflammatory syndrome in children (MIS-C). PIMS-TS is a rare, severe, delayed immune response to SARS-CoV-2 infection in children.

Indicators 3.6, 3.7 and 3.8 track COVID-19 related deaths. The population rate of COVID-19 related deaths is an indication of both the scale and severity of the pandemic. Demographic disaggregation of these indicators show which parts of the community are most affected. Indicators 3.6 and 3.7 measure total COVID-19 mortality and fatality among diagnosed cases, providing an overall summary of the impact on public health.

Indicator 3.8 tracks excess mortality, the difference between the observed count of deaths and the number expected based on past rates in a specified time period. Excess death estimates capture the overall impact, both direct and indirect, of the COVID-19 pandemic.

GOAL 4: Monitor impact on the health system

Objective	No.	Indicator	Disaggregation	Data Source	Reporting
Monitor ward and intensive care occupancy to provide early warning of pressure on capacity in public hospitals	4.1	Month-ahead forecasts of hospital inpatient (ward and ICU) occupancy due to COVID-19	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • NNDSS • ANZICS • Critical Health Resource Information System (CHRIS) 	<ul style="list-style-type: none"> • Weekly Situational Assessment of COVID-19 in Australia
	4.2	Proportion of available intensive care beds occupied by COVID patients	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • CHRIS 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture
	4.3	Counts of COVID-19 patients in intensive care facilities (active cases and cleared cases)	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • CHRIS • Jurisdictional hospital and ICU reporting 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture
	4.4	Proportion of available paediatric intensive care beds occupied by COVID patients	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • PAEDS 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture

Objective	No.	Indicator	Disaggregation	Data Source	Reporting
	4.5	Counts of paediatric COVID-19 patients in intensive care facilities (active cases and cleared cases)	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> PAEDS 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report Common Operating Picture
	4.6	Hospital ward beds (excluding intensive care) occupied by COVID-19 cases (active cases and cleared cases)	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> Jurisdictional hospital and ICU reporting 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report Common Operating Picture
Monitor intensive care and aged care workforce absenteeism due to COVID-19 exposure	4.7	Intensive care medical and nursing staff unavailable due to COVID exposure or illness	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> CHRIS (ICU) 	<ul style="list-style-type: none"> Daily Executive Summary of ICU reporting
	4.8	Counts of residential aged care facility staff COVID-19 cases associated with current active outbreaks	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> Australian COVID-19 Aged Care Incident Response System 	<ul style="list-style-type: none"> Weekly report on COVID-19 outbreaks in Australian residential aged care facilities

Why is this important?

Goal 4 is important because it measures the health systems ability to cope with the pandemic.

Indicator 4.1 uses multiple data sources to predict the load hospitals can expect in the coming months, to inform resource allocation. Indicators 4.2 to 4.6 monitor current activity in hospitals related to intensive care for COVID-19 patients. In conjunction with indicator 4.1 these indicators can be used to assess and plan resourcing to ensure delivery of safe, timely and quality health care.

Indicators 4.7 and 4.8 track intensive care and aged care workforce absenteeism due to COVID-19 illness and furloughing and inform workforce planning in high risk settings. They provide information on the current state of the workforce and allow a determination to be made on weaknesses in the ability to provide the required care to patients and trigger necessary responses.

GOAL 5: Monitor intervention effectiveness

Objective	No.	Indicator	Disaggregation	Data source	Reporting
Track community response to public health advice and support design of targeted communication strategies	5.1	Ratio of current activity relative to baseline (pre-COVID-19) of macro- and micro-physical distancing activity	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> COVID-19 Public Adherence Survey (Behavioural Survey) Population-level mobility data from Google data stream 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report
Monitor trends in isolation	5.2	Percent of individuals reporting COVID-like illness and self-isolating	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> COVID-19 Public Adherence Survey (Behavioural Survey) 	
Monitor vaccination coverage	5.3	Proportion of eligible population up to date with vaccination	<ul style="list-style-type: none"> Jurisdiction Age group Sex Aboriginal and Torres Strait Islander status 	<ul style="list-style-type: none"> AIR 	<ul style="list-style-type: none"> Vaccination numbers and statistics Australian Government Department of Health
Identify population groups where vaccination coverage may be suboptimal	5.4	Proportion of eligible population up to date with vaccination within specific groups	<ul style="list-style-type: none"> Jurisdiction RACF residents National Disability Insurance Scheme (NDIS) recipients NDIS screened workers RACF workers 	<ul style="list-style-type: none"> AIR-MADIP linkage for investigative purposes to be explored 	<ul style="list-style-type: none"> Common Operating Picture

Objective	No.	Indicator	Disaggregation	Data source	Reporting
	5.5	Number and proportion of Statistical Area Level 4 regions with up-to-date vaccination <ul style="list-style-type: none"> - Above 70% - Above 80% 	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • AIR 	
Estimate the impact of vaccination on transmission potential	5.6	Percent of transmission potential reduced through vaccination	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • As per 2.4 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture
Estimate vaccine effectiveness	5.7	Vaccine effectiveness against <ul style="list-style-type: none"> - Severe illness - Death 	<ul style="list-style-type: none"> • Age group 	<ul style="list-style-type: none"> • NNDSS • AIR • Population infection survey (proposed) 	<ul style="list-style-type: none"> • Communicable Diseases Intelligence Journal

Why is this important?

This goal is important because it provides information about the effectiveness of public health interventions and where there are gaps which require additional or modified interventions.

Indicators 5.1 and 5.2 track responses to public health messaging, for example, the extent to which people with COVID-19 symptoms are isolating, thereby enabling the evaluation of compliance.

Indicators 5.3 to 5.7 measure the coverage and impact of vaccines.

Indicators 5.6 and 5.7 track the impact of vaccines on transmission and monitor changes in vaccine effectiveness at the population level. These indicators are also used in inform forecasting of health system impacts.

Appendix 1: Disease surveillance approaches adopted in the Plan

Key methodological approaches that underpin the Plan are outlined below. These approaches are utilised across a broad array of data collections as specified in [Appendix 2](#).

Case-based reporting

The primary source for case-based reporting in Australia is the National Notifiable Diseases Surveillance System (NNDSS), a well-established surveillance system which relies on reporting of diagnosed cases and their characteristics to the national level from state and territory communicable disease control authorities. Since the start of the pandemic, NNDSS has received records of cases diagnosed using PCR methods by laboratories. From late 2021, NNDSS has also received records of cases self-diagnosed using RATs and reported by individuals to their jurisdictional health authority. The NNDSS is the source of national analyses of all diagnoses of infection with SARS-CoV-2, whether reported by laboratories, health facilities clinicians or self-conducted RATs. The [Testing Framework for COVID-19 in Australia](#) (COVID-19 Testing Framework) provides guidance on the use and appropriateness of different testing methods based on the epidemiological context and priority testing groups.

Sampling of cases for interviews/surveys

Collection of clinical and epidemiological data from cases provides invaluable information to support the public health response to COVID-19. At the high case-loads seen since late 2021, collecting these data from all notified cases has become untenable. Random sampling of a subset of cases for interview or automated survey provides the necessary information to produce estimates of key quantities of public health and clinical relevance, including symptom status, source of acquisition and treatment seeking behaviour.

Mortality reporting

Surveillance of COVID-19 mortality draws on a range of data sources including Australian Bureau of Statistics datasets, aged care data and NNDSS. The timeliness of death data and attribution of deaths to COVID-19 differs between data sources. As such it should be noted that there will be differences in the numbers of deaths reported in NNDSS (COVID-19 deaths defined as per the [COVID-19 CDNA National Guidance for Public Health Units](#)) and the ABS collections.

Hospital based surveillance

Surveillance of cases of COVID-19 admitted to hospital and intensive care units (ICUs) is captured with the assistance of clinical networks and datasets.

Syndromic and sentinel surveillance

Australia has a number of established surveillance systems originally set up to monitor influenza and influenza-like illnesses and their complications. Some of these systems have been expanded to include COVID-19-specific information (see [Appendix 2*](#)). There are also mechanisms for reporting on health service utilisation and outcomes for people admitted to tertiary care with COVID-19.

Serosurveillance

Serosurveillance complements SARS-CoV-2 case-based reporting, which is likely to miss a substantial proportion of infections that are mild or asymptomatic, by providing estimates of the proportion of the population with characteristic antibodies. Serosurveillance helps us understand at a population level how many people cumulatively have been infected, as well as the proportion with immunological markers, that indicate protection against future infection, whether through vaccination or past infection. The [National SARS-CoV-2 Serosurvey](#) coordinates serosurveillance in Australia.

Surveillance of virus genomics

Detecting variants in a timely fashion is a key focus for genomic surveillance. Longitudinal genomic data are used to monitor SARS-CoV-2 evolution, for example, to identify new variants in Australia and assess any impact on the accuracy of diagnostic tests, vaccine and treatment effectiveness pathogenicity, immunogenicity, or transmissibility. More information on laboratory aspects of SARS-CoV-2 genomics is provided in the [Public Health Laboratory Network \(PHLN\) Guidance on Laboratory Testing for SARS-CoV-2](#).

The Communicable Diseases Genomics Network (CDGN) coordinates genomic surveillance in Australia and has developed the [Sampling strategy for SARS-CoV-2 genomic surveillance](#). In the current context of widespread community transmission and limited PCR tests, the CDGN strategy outlines an approach for genomic surveillance that has shifted from comprehensive sequencing to selective and targeted sequencing. Additionally, CDNA has developed a national process for monitoring assessment of the significance of novel strains.

Behavioural surveillance

SARS-CoV-2 is transmitted primarily via close contact between individuals and airborne transmission. Therefore, the behaviour of individuals, and their compliance with recommendations on physical distancing and other public health interventions, is a major determinant of transmission of SARS-CoV-2. Behaviours are monitored through ongoing national weekly survey of the population, supplemented by jurisdiction-specific studies of the general population and cases. Data from the surveillance is used for policy development and as an input for modelling.

Appendix 2: Principal data sources

Data source	Description	Coverage or representativeness	Custodian
AusTrakka	Australia's national real-time genomic surveillance and alert platform. AusTrakka is a secure platform for nationally agreed data sharing, analysis and visualisation. It performs continuous analysis of lineages, clusters and transmission patterns across all jurisdictions and New Zealand, to inform and support public health response activities. It provides weekly reports on VOCs and monthly reports on lineages and genomic analyses.	National, and New Zealand. All COVID-19 samples successfully sequenced at the CDGN Public Health Laboratories are uploaded to the platform and analysed together with CDNA endorsed metadata.	Public Health Laboratories in the Communicable Diseases Genomics Network (CDGN)
Australian and New Zealand Intensive Care Society Centre for Outcome and Research Evaluation (ANZICS CORE)	ANZICS CORE is a system of audit and benchmarking for Intensive Care Units (ICUs) across Australia and New Zealand, funded by state and territory health departments. ICUs submit de-identified patient data to ANZICS CORE for all admissions including information on diagnosis, treatment and outcomes. ANZICS has developed a system for categorising the reason for admission for COVID-19 patients to determine if it was 'primary COVID', 'condition exacerbated by COVID' or 'with COVID'. The registry contains a Statistical Linkage Key enabling linkage to other datasets. A trial is underway to test the feasibility of regular, ongoing linkage to state and territory notifiable disease datasets.	National, and New Zealand. The registry covers 95% of all ICU admissions. A small number of private and regional/rural ICUs are not covered.	Australian and New Zealand Intensive Care Society
Australian Immunisation Register (AIR)	The Australian Immunisation Register (AIR) is a national register that records vaccines given to all people in Australia. The AIR is administered by Services Australia on the Department of Health's behalf. It is mandatory for vaccination providers to report COVID-19, influenza and vaccines on the National Immunisation Program schedule to the AIR. Through Services Australia, Health receives a daily extract from the AIR, which is stored in Health's Enterprise Data Warehouse (EDW). The AIR is governed under the Australian Immunisation Register Act 2015, and the associated Australian Immunisation Register Rule 2015.	National. The AIR includes all people who are on the Medicare Consumer Directory, as well as other non-Medicare eligible people who have received a vaccination in Australia that has been reported to the AIR.	Services Australia

Data source	Description	Coverage or representativeness	Custodian
AIR-MADIP (AIR integrated with the Multi-Agency Data Integration Project)	The Multi-Agency Data Integration Project (MADIP) is an integrated (linked) data set that is developed and maintained by the ABS, MADIP is a secure data asset combining information on health, education, government payments, income and taxation, employment, and population demographics (including the Census) over time. A list of MADIP Research Projects is held by the ABS. AIR data were integrated in MADIP in mid-2021 and were analysed to inform the roll-out of the COVID-19 vaccination program.	National	Australian Bureau of Statistics (ABS)
ASPREN	The Australian Sentinel Practices Research Network (ASPREN) is a network of sentinel general practitioners and nurse practitioners who report de-identified information on Influenza like illness and other conditions seen in general practice.	National	University of Adelaide
Australian COVID-19 Aged Care Incident Response System (AUS-CAIRS)	A digital platform that enables secure sharing of point-in-time information about COVID-19 preparedness and outbreak management in Residential Aged Care Facilities. Information is shared between the Australian Government and state and territory Government entities with a role in public health and aged care emergency management (including their contractors).	National	Australian Government Department of Health
COVID-19 Public Adherence Survey	A continually updated 'pulse survey' questionnaire which examines people's perceptions, experience, and behaviours in relation to the public health measures implemented in response to the COVID-19 pandemic. These data support statistical modelling on COVID-19 transmission.	National Sample size of n=2,000 per week. A proportionate and representative sampling approach across all jurisdictions and quotas for age, gender and location, and regional/metropolitan quotas to ensure adequate reach.	Australian Government Department of Health
Critical Health Resource Information System (CHRIS)	A daily national, jurisdictional and individual hospital picture of COVID-19 patients in intensive care, those patients requiring ventilation as well as overall intensive care bed and ventilator availability and utilisation.	National All public and private hospitals with Intensive Care Units.	Australian and New Zealand Intensive Care Society (ANZICS)

Data source	Description	Coverage or representativeness	Custodian
FluTracking*	<p>An online syndromic surveillance system for community influenza-like-illness involving weekly surveys. All information, including symptoms, health care access, and testing is self-reported by participants. Participation in the surveillance system is voluntary and open to all Australians. The system is operational each year during the influenza season but activated early in 2020 to support the COVID-19 response and has been expanded to include COVID-19-specific information including symptom information, SARS-CoV-2 testing and results. FluTracking provides community level attack rates that are not biased by health-seeking behaviour, clinician testing practices or differences in jurisdictional surveillance methods. https://info.flutracking.net</p>	<p>More than 140,000 participants from across Australia report each week to FluTracking.</p> <p>Children, people in rural areas and Aboriginal and Torres Strait Islander peoples are less represented than others in FluTracking data. Those with higher education levels are overrepresented.</p>	Hunter New England Local Health District
General Practice Respiratory Clinics (GPRC)	<p>In response to COVID-19 the Australian Government established general practice respiratory clinics (n=147 clinics open as of 15 September 2020) throughout Australia to clinically assess people with mild to moderate respiratory symptoms to be seen at the clinics patients must be symptomatic with respiratory illness, fever or other symptoms potentially compatible with COVID-19.</p>	National	Australian Government Department of Health
Google data stream	<p>Population-level mobility data are retrieved via the COVID-19 Community Mobility Reports published by Google. These reports contain GPS-derived metrics of the amount of time spent in locations of one of six types (retail and recreation, grocery and pharmacy, parks, transit stations, workplaces and residential). Each data stream is encoded as a percentage change in the mobility metric, relative to a pre-COVID-19 baseline. No further details are provided on the users or the nature of these visits. These trends are produced from aggregated, anonymised sets of data from users who have enabled Location History on their device, which is off by default. This data is not provided by Google if the number of individuals in the region of interest with Location History is too small.</p>	National	Google

Data source	Description	Coverage or representativeness	Custodian
Influenza Complications Alert Network (FluCAN)*	A real-time hospital sentinel surveillance system for acute respiratory disease requiring hospitalisation. Established to monitor for seasonal influenza, FluCAN has been modified to include surveillance for COVID-19. Participating sites collect detailed clinical and laboratory information from all hospitalised patients with a confirmed diagnosis of COVID-19. https://monashhealth.org/services/monash-infectious-diseases/research/influenza-research/flucan-influenza-surveillance-2/	Includes 20 hospital sites across Australia (ACT 2, NSW 3, NT 2, QLD 4, SA, 1, TAS 1, VIC 5, WA 2). The hospital sites include 5 paediatric specific sites. Note for one of the hospital sites, it is just the paediatric ward that is represented.	Monash University
Jurisdictional hospital and ICU reporting	State and territory health departments collate information on the number of COVID-19 patients in hospital and ICU and provide weekly to the Commonwealth Department of Health.	State-level	Jurisdictional health departments
Jurisdictional testing report	State and territory health departments collate laboratory testing data and provide weekly to the National Incident Centre.	State-level	Jurisdictional health departments
Multi-Agency Data Integration Project (MADIP)	A secure data asset combining information on health, education, government payments, income and taxation, employment, and population demographics (including the Census) over time.	National	ABS
My Aged Care service provider portal	Approved aged care service providers use the portal to manage information about their services and clients. Case managers within Residential Aged Care services provide COVID-19 vaccination doses, case counts and death counts per week through the provider portal.	National	Australian Government Department of Health

Data source	Description	Coverage or representativeness	Custodian
National Notifiable Diseases Surveillance System (NNDSS)	<p>The NNDSS co-ordinates the national surveillance of more than 50 communicable diseases or disease groups. Under the notifiable diseases system, notifications are made to the State or Territory health authorities under the provisions of the public health legislation in their jurisdiction. De-identified unit records of these notifications, including for COVID-19, are supplied to the Australian Government Department of Health on a daily basis, for collation in the NNDSS, analysis, and publication.</p>	<p>National</p> <p>Notified cases of COVID-19 must meet the national case definitions to be reported to the NNDSS. The case definitions are documented in the COVID-19 CDNA National Guidelines for Public Health Units. Changes in notifications over time may reflect testing policies; screening programs (including the preferential testing of high-risk populations); the use of less invasive and more sensitive diagnostic tests; and periodic awareness campaigns.</p> <p>Some jurisdictions are collecting information on the characteristics of cases by regular surveys of a random sample of cases.</p>	<p>CDNA</p>
National SARS-CoV-2 Serosurvey	<p>In partnership with state and territory health authorities, private and public laboratories, as well as Australian Red Cross Lifeblood residual blood specimens collected for other purposes will be tested for the presence of antibodies to the virus. Cumulative exposure to SARS-CoV-2 is estimated by geographic area, age group and time.</p>	<p>Populations targeted include people undergoing routine pathology testing, women who had a routine blood screen during pregnancy, donors to Lifeblood and paediatric inpatients.</p>	<p>Kirby Institute and National Centre for Immunisation Research and Surveillance (NCIRS)</p>
Population Infection Survey (proposed)	<p>The utility and feasibility of a nationally coordinated survey is currently being evaluated. Systems being assessed include serial cross sectional or longitudinal surveys.</p>	<p>Random population based national sample.</p>	<p>TBC</p>

Data source	Description	Coverage or representativeness	Custodian
PAEDS	<p>The PAEDS network is a hospital-based active surveillance system employing prospective case ascertainment for selected serious childhood diseases of public health importance and adverse events following immunisation to inform health.</p> <p>Specific to COVID-19, PAEDS undertakes active surveillance of children hospitalised at participating sites with COVID-19, Kawasaki Disease and PIMS-TS. www.paeds.org.au</p>	Seven hospitals, across seven jurisdictions participate in PAEDS. PAEDS collaborates with FluCAN.	NCIRS
Provisional Death Registrations	<p>The registration of deaths is the responsibility of the eight individual state and territory Registrars of Births, Deaths and Marriages. When a death occurs, the cause of that death is either certified by a doctor using a Medical Certificate of Cause of Death (MCCD), or the death is referred to a coroner for further investigation. These deaths are provided to the ABS via the National Coronial Information System.</p> <p>Information is provided to the ABS by individual Registrars for processing, coding and compilation into aggregate statistics. Registrars report all deaths that were registered in a month at the start of the following month.</p> <p>This data has been integrated with AIR-MADIP (AIR integrated with the Multi-Agency Data Integration Project).</p>	National	ABS
Provisional mortality statistics	<p>Deaths are compared to an average number of deaths recorded over the previous 5 years. These average or baseline counts serve as a proxy for the expected number of deaths, so comparisons against baseline counts can provide an indication of excess mortality. www.abs.gov.au/ausstats/abs@.nsf/mf/3303.0.55.004</p>	<p>National</p> <p>These data are provisional and relate to doctor certified deaths only. Coroner referred deaths are not included.</p>	ABS

Data source	Description	Coverage or representativeness	Custodian
Short Period Incidence Study of Severe Acute Respiratory Infection (SPRINT-SARI)	A sentinel system that collects detailed data on the characteristics and outcomes of interventions for patients admitted to ICUs or High Dependency Units with COVID-19 at participating sites across Australia	79 ICU sites that have been part of the study since late February 2020. The participating ICUs cover all jurisdictions (ACT 1, NSW 16, NT 2, QLD 15, SA 8, TAS 2, VIC 26, WA 9) and include metropolitan and regional ICU sites.	Monash University
Situational awareness modelling	<p>Mathematical and statistical modelling-based analyses are performed each week on time-series of principal data sources to estimate key indicators including the effective reproduction number, transmission potential and case and clinical forecasts.</p> <p>Methodological details are available in The University of Melbourne team's technical report and the following pre-print: https://www.medrxiv.org/content/10.1101/2021.11.28.21264509v1</p>	State-level	The University of Melbourne
Victorian Sentinel Practice Influenza Network (VicSPIN)	VicSPIN is a sentinel surveillance system in which general practitioners report de-identified information on the number of influenza like illness (ILI) patient presentations seen each week. Swab tests are also conducted on a nominated proportion of the patients who present with ILI. www.vicspin.com.au	Victoria	Victorian Infectious Diseases Reference Laboratory
Wastewater	Reports of wastewater programs are presented on jurisdictional websites but are not currently collected or reported centrally. Work is underway to develop national collection and reporting protocols.		

Appendix 3: Data considerations for Aboriginal and Torres Strait Islander populations

Aboriginal and Torres Strait Islander peoples reserve the right to determine culturally appropriate forms for data reporting, and therefore the right to grant or withhold permission from other agencies or organisations for its use. All Aboriginal and Torres Strait Islander data should undergo a cultural review by Aboriginal and Torres Strait Islander peoples within a culturally appropriate governance model.

The Aboriginal and Torres Strait Islander Advisory Group on COVID-19 has endorsed the following considerations in relation to the Plan:

- The strengths of the COVID-19 response for Aboriginal and Torres Strait Islander peoples is the focus, and deficits which can have a negative impact on health outcomes, are not emphasised¹.
- The public health contexts for Aboriginal and Torres Strait Islander peoples are taken into account, for example:
 - Aboriginal and Torres Strait Islander peoples live in many different settings across Australia, including urban, regional, remote and very remote locations;
 - special considerations are needed for Aboriginal and Torres Strait Islander peoples living in hostels; detention centres; aged care and other residential facilities; town camps; and homeless populations;
 - many communities experience shortages of housing, and/or inadequate housing infrastructure;
 - the strength and leadership of the Aboriginal and Torres Strait Islander community-controlled health sector means that locally-led holistic, comprehensive, and culturally appropriate and safe primary health care can be delivered to communities. However, many Aboriginal and Torres Strait Islander peoples still experience reduced access to acute and primary health care (including testing) and other health services. This can be due to factors such as location, lack of workforce, lack of available transport and differing health care literacy. This can also occur because of concerns of racism; feelings of shame; fear of separation from loved ones and family or mistrust of mainstream health services. These factors could lead to reduced COVID-19 presentations or unwell people presenting later in the disease progression.
 - Aboriginal and Torres Strait Islander peoples experience a disproportionately high burden of chronic disease and are therefore more susceptible to severe outcomes arising from COVID-19.
- Data completeness for Aboriginal and Torres Strait Islander status influences the representativeness of the data. Factors contributing to the level of data completeness include:
 - the structure of the data collection systems
 - the influence of systemic racism on the willingness of Aboriginal and Torres Strait Islander peoples to identify based on the perceived consequences
 - that Aboriginal and Torres Strait Islander peoples may also wish to identify retrospectively, which may require historical data to be revised.
- It is important to note limitations of data sources, particularly those that do not have complete population ascertainment and may not be representative of Aboriginal and Torres Strait Islander peoples (e.g. some sentinel systems). Therefore, it is particularly important that for the relevant datasets, the proportion of people without a known Aboriginal and Torres Strait Islander status is reported where possible.
- Data collection and analysis methods may require adaptation, including:

¹ Fogarty, W., Lovell, M., Langenberg, J. & Heron, M-J. 2018, Deficit Discourse and Strengths-based Approaches: Changing the Narrative of Aboriginal and Torres Strait Islander Health and Wellbeing, The Lowitja Institute, Melbourne.

- using mixed methods (such as case studies to understand the social and cultural contexts of quantitative data)
- including other data to help understand the public health context
- reviewing data alongside that for non-Indigenous people in order to assess equity of access rather than to highlight disparities. Examples where comparisons could be particularly useful include number and rate of cases, tests, hospitalisations and deaths. Given the differences in population structures, age-standardised rates using an appropriate standard population should be used where possible (for example, for testing positivity, hospitalisations and deaths data).

Where possible, data are to be made available to Aboriginal and Torres Strait Islander communities and organisations. The [National Agreement on Closing the Gap](#) highlights the importance of sharing disaggregated data and information so Aboriginal and Torres Strait Islander organisations and communities can make informed decisions while meeting privacy requirements and ensuring data security and integrity.

The decision to report on small numbers requires that the benefits of, and the need for information to inform decision-making and responses in communities be balanced against the potential privacy implications for individuals and communities.

Further surveillance and epidemiological considerations for Aboriginal and Torres Strait Islander populations are located in other documents such as the [Management Plan for Aboriginal and Torres Strait Islander populations](#) and the [CDNA National Guidance for remote Aboriginal and Torres Strait Islander communities for COVID-19](#).

Appendix 4: Indicators recommended for future development

CDNA recommends that the six areas below be assessed on an investigative basis and/or considered for national surveillance in the future should the required data sources, technology and systems be developed. Enhancing monitoring of COVID-19 cases and severe disease in specific populations is recommended for consideration as a high priority.

- Enhance understanding of COVID-19 cases and severe disease in specific populations, including Aboriginal and Torres Strait Islander people, people from culturally and linguistically diverse backgrounds and people with a disability
- Evaluate uptake, equity of access to, and effectiveness of treatments, including through sentinel systems
- Better monitoring of co-infections with influenza and other respiratory pathogens, as well as re-infections
- Characterisation of SARS-CoV-2 by antiviral susceptibility and antigenic properties
- Enhanced characterisation of the occurrence and impact of SARS-CoV-2 variants on disease severity and transmission
- Better monitoring of the prevalence of post-COVID-19 conditions (long COVID).

The indicators in Table 1 were developed for a low case environment with strict border controls and high levels of contact tracing. These could be considered for reinstating should the environment change.

Table 1: Indicators to consider reinstating should the environment change

Objective	Indicator	Disaggregation	Data Source	Distribution	Rationale for not collecting now
Monitor Contact Tracing Performance	Proportion of cases tested within 2 days of symptom onset	<ul style="list-style-type: none"> • Age • Sex • Aboriginal and Torres Strait Islander status • Jurisdiction • Vaccination status • Reason for test (contact of a case or other) 	<ul style="list-style-type: none"> • NNDSS 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture 	<ul style="list-style-type: none"> • Of little value when limited contact tracing and case interviews being undertaken

Objective	Indicator	Disaggregation	Data Source	Distribution	Rationale for not collecting now
	Proportion of cases in quarantine: <ul style="list-style-type: none"> • prior to symptom onset • for entire infectious period 	<ul style="list-style-type: none"> • As above 	<ul style="list-style-type: none"> • NNDSS 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report 	<ul style="list-style-type: none"> • Of little value when limited contact tracing and case interviews being undertaken
Monitor the contribution of testing, isolation, contact tracing, and quarantine (when applicable) to disease control.	Percent of transmission potential reduced through test, trace, isolate and quarantine	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • NNDSS 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture 	<ul style="list-style-type: none"> • Of little value under current settings
Monitor diagnostic turn-around times	Proportion of cases diagnosed within 1 day of specimen collection	<ul style="list-style-type: none"> • Jurisdiction • Metropolitan vs non-metropolitan area of residence 	<ul style="list-style-type: none"> • NNDSS 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report • Common Operating Picture 	

Objective	Indicator	Disaggregation	Data Source	Distribution	Rationale for not collecting now
Assess whether the virus is spreading faster or slower among active cases than expected	Deviation between the effective reproduction number and transmission potential	<ul style="list-style-type: none"> Jurisdiction 	<ul style="list-style-type: none"> NNDSS COVID-19 Public Adherence Survey (Behavioural Survey) Big data and survey analytics Refer to situational awareness modelling in Appendix 2 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report 	
Predict future trends in cases of COVID-19	Counts of cases with an initial diagnosis <ul style="list-style-type: none"> in the 2 days prior to ICU admission in the 2 days prior to or after death 	<ul style="list-style-type: none"> Age Sex Aboriginal and Torres Strait Islander status Jurisdiction Metropolitan vs non-metropolitan area of residence Vaccination status 	<ul style="list-style-type: none"> NNDSS 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report 	<ul style="list-style-type: none"> Less relevant in a low testing/self-testing environment Disaggregation information difficult to obtain in high incidence settings
	Proportion of cases who had a known exposure at the time of testing	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> NNDSS 	<ul style="list-style-type: none"> National COVID-19 Weekly Surveillance Report 	<ul style="list-style-type: none"> When case numbers are high the number of potential exposures is high

Objective	Indicator	Disaggregation	Data Source	Distribution	Rationale for not collecting now
Track characteristics of imported cases to inform border strategies	Proportion of air arrival cases positive	<ul style="list-style-type: none"> • Jurisdiction 	<ul style="list-style-type: none"> • NNDSS and • Australian Border Force air arrivals data 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report 	<ul style="list-style-type: none"> • No routine testing of overseas arrivals
Determine representativeness of viral sequence dataset	Proportion of overseas acquired cases sequenced	<ul style="list-style-type: none"> • Jurisdiction • Quarantine status 	<ul style="list-style-type: none"> • NNDSS (data provided by CDGN laboratories collaborating with AusTrakka) 	<ul style="list-style-type: none"> • National COVID-19 Weekly Surveillance Report 	<ul style="list-style-type: none"> • No routine testing of overseas arrivals

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All information in this publication is correct as at June 2022

