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COVID-19, Australia: Epidemiology Report 12:

Reporting week ending 23:59 AEST 19 April 2020

COVID-19 National Incident Room Surveillance Team

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Weekly epidemiological report

COVID-19, Australia: Epidemiology Report 12:

Reporting week ending 23:59 AEST 19 April 2020

COVID-19 National Incident Room Surveillance Team

Notified cases of COVID-19 and associated deaths reported to the National Notifiable Diseases Surveillance System (NNDSS) to 19 April 2020.

Summary

The reduction in international travel and domestic movement, social distancing measures and public health action have likely slowed the spread of the disease (Figure 1).

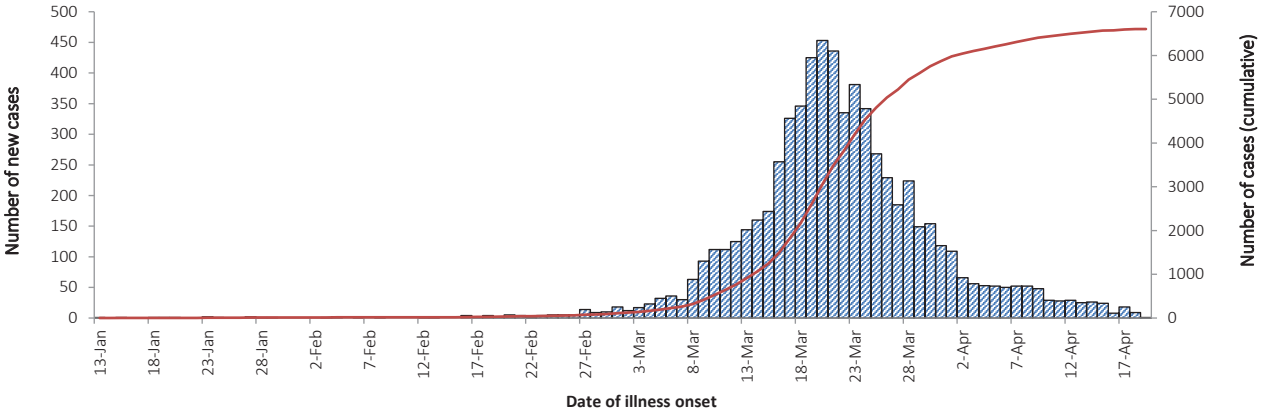
Notifications in Australia remain predominantly among people with recent overseas travel, with some locally-acquired cases being detected. Most locally-acquired cases can be linked back to a confirmed case, with a small portion unable to be epidemiologically linked. The distribution of overseas-acquired cases to locally-acquired cases varies by jurisdiction.

The crude case fatality rate (CFR) in Australia remains low (1.0%) compared to the World Health Organization's globally-reported rate (6.8%) and to other comparable high-income countries such as the United States of America (4.7%) and the United Kingdom (13.5%). The low CFR is likely reflective of high case ascertainment including detection of mild cases. High case ascertainment and prompt identification of contacts enables the public health response and a reduction of disease transmission.

Confirmed cases in Australia notified up to 19 April 2020[i]	
Notifications	6,606
Deaths	69

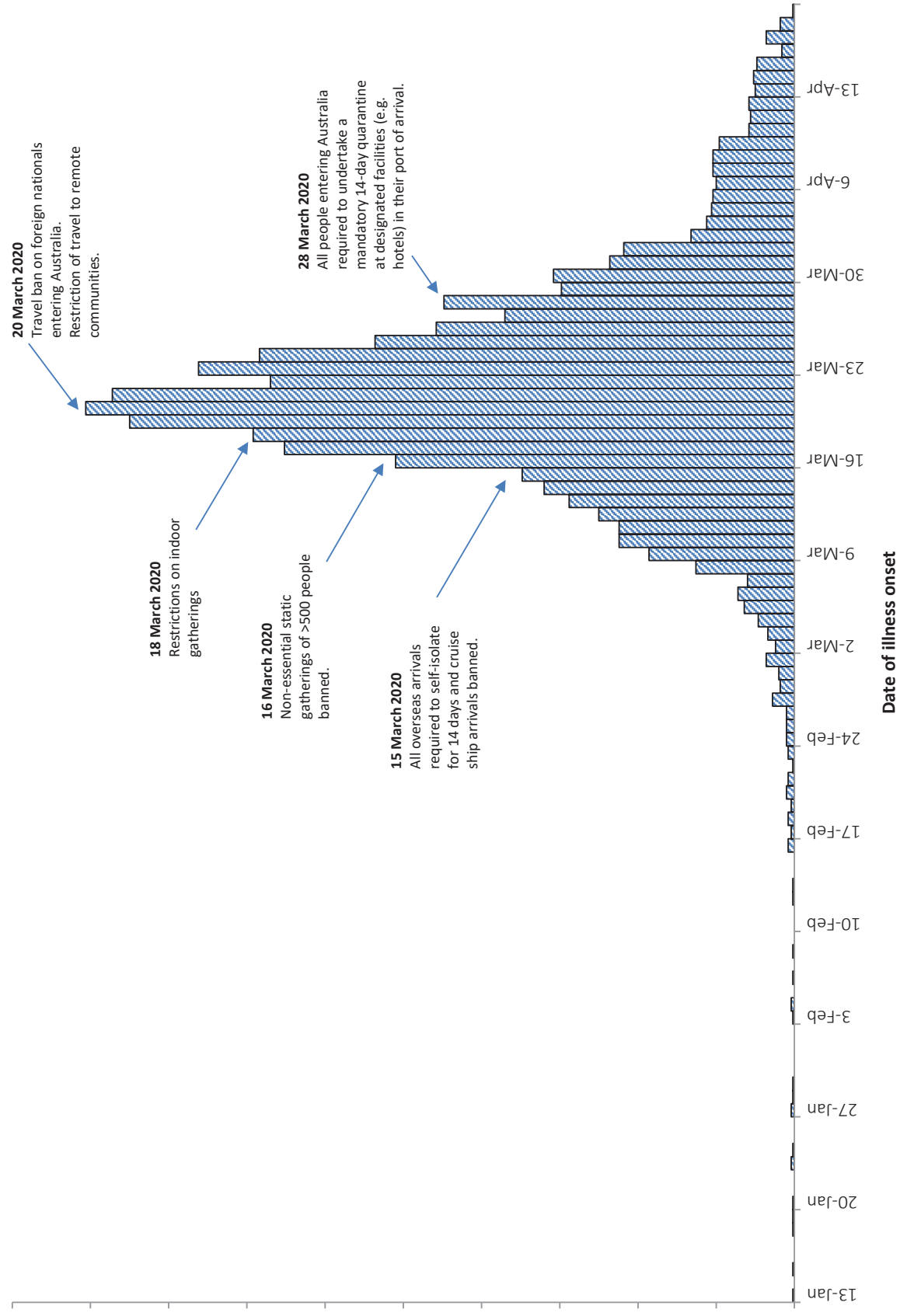
Internationally, cases continue to increase. The rates of increase have started to slow in several regions, although it is too soon to tell whether this trend will be sustained. Interpretation of international epidemiology should be conducted with caution as it differs from country to country depending not only on the disease dynamics, but also on differences in case detection, testing and implemented public health measures.

Keywords: SARS-CoV-2; novel coronavirus; 2019-nCoV; coronavirus disease 2019; COVID-19; acute respiratory disease; epidemiology; Australia



i Data caveats: Based on data extracted from the National Notifiable Diseases Surveillance System (NNDSS) on 21 April 2020. Due to the dynamic nature of the NNDSS, data in this extract are subject to retrospective revision and may vary from data reported in published NNDSS reports and reports of notification data by states and territories.

Figure 1: COVID-19 notifications in Australia by date of onset, from 13 January to 19 April 2020,[a] with timing of key public health measures



a Due to reporting delays, interpret the latest days' new cases with caution.

Table 1: Rate of weekly notifications of COVID-19, March to April, Australia

	Incidence (per 100,000 population)		
Jurisdiction	13–19 April	6–12 April	30 March to 5 April
NSW	1.3	2.6	8.5
Vic	0.1	2.3	7.6
Qld	0.4	1.4	3.9
WA	1.0	2.2	5.0
SA	0.3	1.3	6.0
Tas	10.2	13.4	3.2
NT	0	0	5.3
ACT	0	2.9	3.6
Australia	0.8	2.4	6.6

Australian cases: descriptive epidemiology

National trends

For the week ending 19 April 2020, there were 212 cases of COVID-19 notified to the NNDSS, bringing the total number of confirmed cases notified in Australia to 6,606 (as of 23:59 AEST 19 April 2020).

The number of new cases continues to decrease (Table 1) which indicates a reduction in disease transmission, as demonstrated by a flattening of the cumulative cases curve. While the reduction in international travel has decreased the number of imported cases, the public health response (such as social distancing measures) remains important in continuing to limit domestic transmission.

Aboriginal and Torres Strait Islander persons

Forty-seven cases (0.7%) have been reported in Aboriginal and Torres Strait Islander persons since the start of the outbreak. These cases were reported across several jurisdictions, with the majority reported in areas classified as 'major cities of Australia' based on the case's usual place of residence (Table 2). No cases have been notified from remote or very remote Australia.

Across all Australian cases, completeness of the Indigenous status field was approximately 92%.

Fifty-five percent (n = 26) of cases in Aboriginal and Torres Strait Islander persons have acquired their infection overseas, with 36% (n = 17) of cases acquired domestically. Four cases (9%) are still under investigation.

The median age of COVID-19 cases among Aboriginal and Torres Strait Islander persons was 36 years (interquartile range: 23.5–56.8 years), which is lower than the median age of non-Indigenous COVID-19 cases.

Of the cases notified amongst Aboriginal and Torres Strait Islander persons, 10% were admitted to hospital, with no such cases reported as being admitted to ICU. This is less than the proportion of cases hospitalised from the non-Indigenous population.

Table 2: COVID-19 cases notified among Aboriginal and Torres Strait Islander persons, Australia, by remoteness classification

Major cities of Australia	Inner regional Australia	Outer regional Australia
32	11	4

Geographical distribution

During the reporting week, cases of COVID-19 were reported from all jurisdictions except the Northern Territory and the ACT (Table 3). New South Wales and Tasmania had the highest year-to-date rate of COVID-19 notifications (37.1 and 38.1 per 100,000 respectively) and the Northern Territory had the lowest (10.9 per 100,000). The majority of new cases over this past week continue to have been reported in New South Wales and Victoria.

Compared to the previous reporting week, the number of new cases in the current reporting period decreased in all jurisdictions except the Northern Territory which reported no new cases in either reporting week.

Outside of Tasmania, most cases over the past fornight were reported to reside in major metropolitan areas. (Figure 2 and Figure 3).

Age and gender distribution

Cases of COVID-19 were reported across all age groups. The median age of all COVID-19 cases was 48 years (interquartile range, IQR: 30–62 years) (Figure 4).

The median ages of hospitalisation (median: 60.5, IQR: 42–72 years) and death (median: 79, IQR: 74–84) were higher than for cases overall. This is consistent with international reporting and reflects a greater risk of severe disease, complications and deaths in the elderly and those with comorbidities (Table 4 and Figure 4).

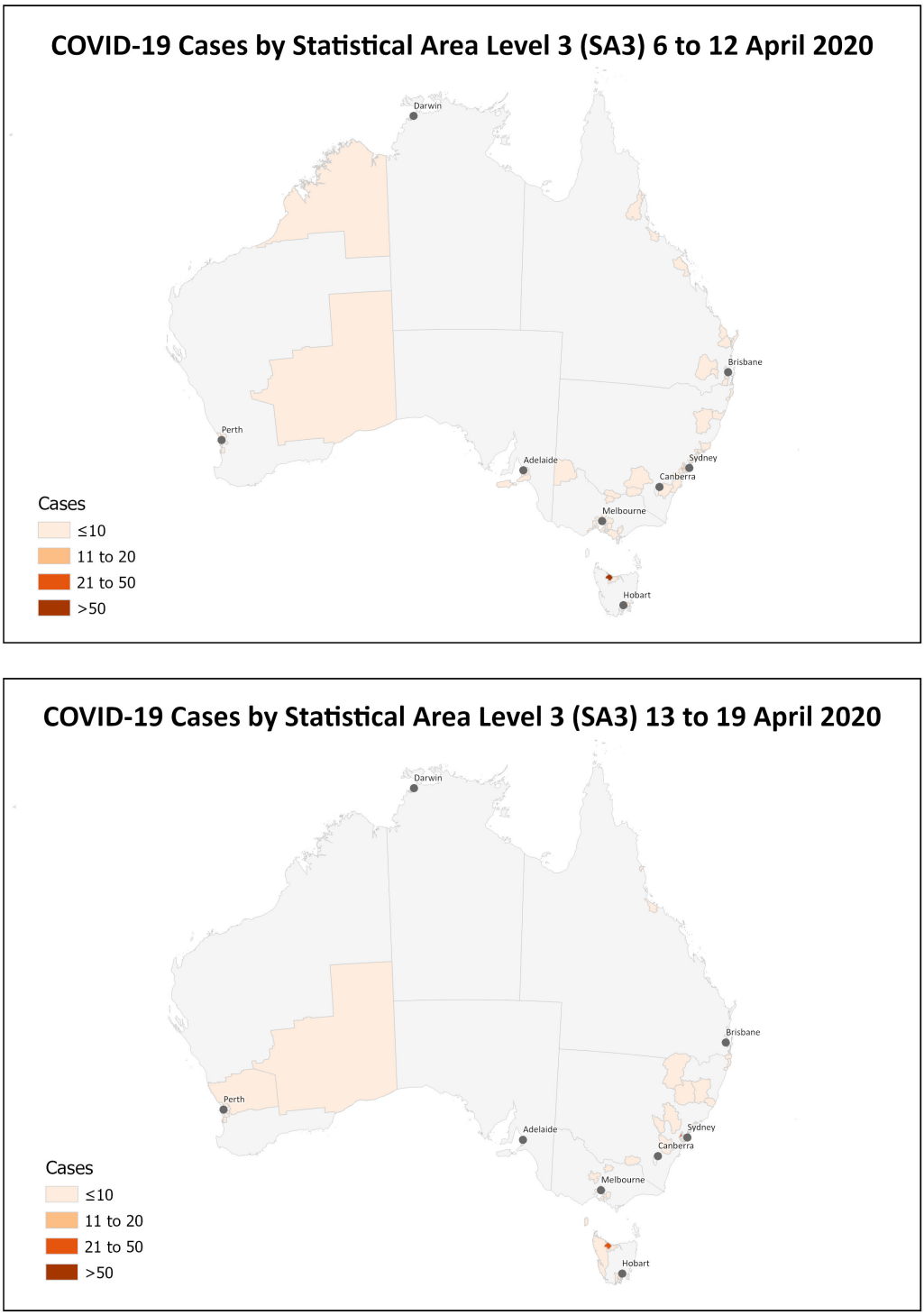
The number of cases was highest in the 20–29 years age group; a high proportion have reported recent overseas travel history. The highest rate of disease was among those in the 60–69 years age group, followed closely by the 70–79 years age group (Figure 5). The high rate amongst those in the 60–69 and 70–79 years age group may be linked to outbreaks on cruise ships, with 28.3% of cases in the 60–69 years age group and 42.0% in the 70–79 years age group acquiring their infection at sea.

Children make up a very small proportion of cases nationally, with 1% of cases aged less than 10 years and 3% aged 10–19 years. One hundred and fifty-six cases were school-aged children aged 5–18 years. This is consistent with international studies which suggest that children are not a primary driver of transmission.

Table 3: Notifications and rates of COVID-19 and diagnostic tests performed, Australia, by jurisdiction

Jurisdiction	Number of new cases this reporting period (00:00 AEST 13 April to 23:59 AEST 19 April 2020)	Total cases (to 23:59 AEST 19 April 2020)	Rate (per 100,000 population)	Cumulative number of tests performed (proportion of tests positive %)
NSW	102	2969	37.1	165,137 (1.79)
Vic	5	1322	20.5	82,000 (1.62)
Qld	21	1021	20.3	84,735 (1.20)
WA	25	526	20.3	28,888 (1.89)
SA	5	436	25.1	43,310 (1.00)
Tas	54	201	38.1	6,320 (3.04)
NT	0	27	10.9	3,713 (0.73)
ACT	0	104	24.7	6,893 (1.49)
Australia	212	6,606	26.4	420,996 (1.57)

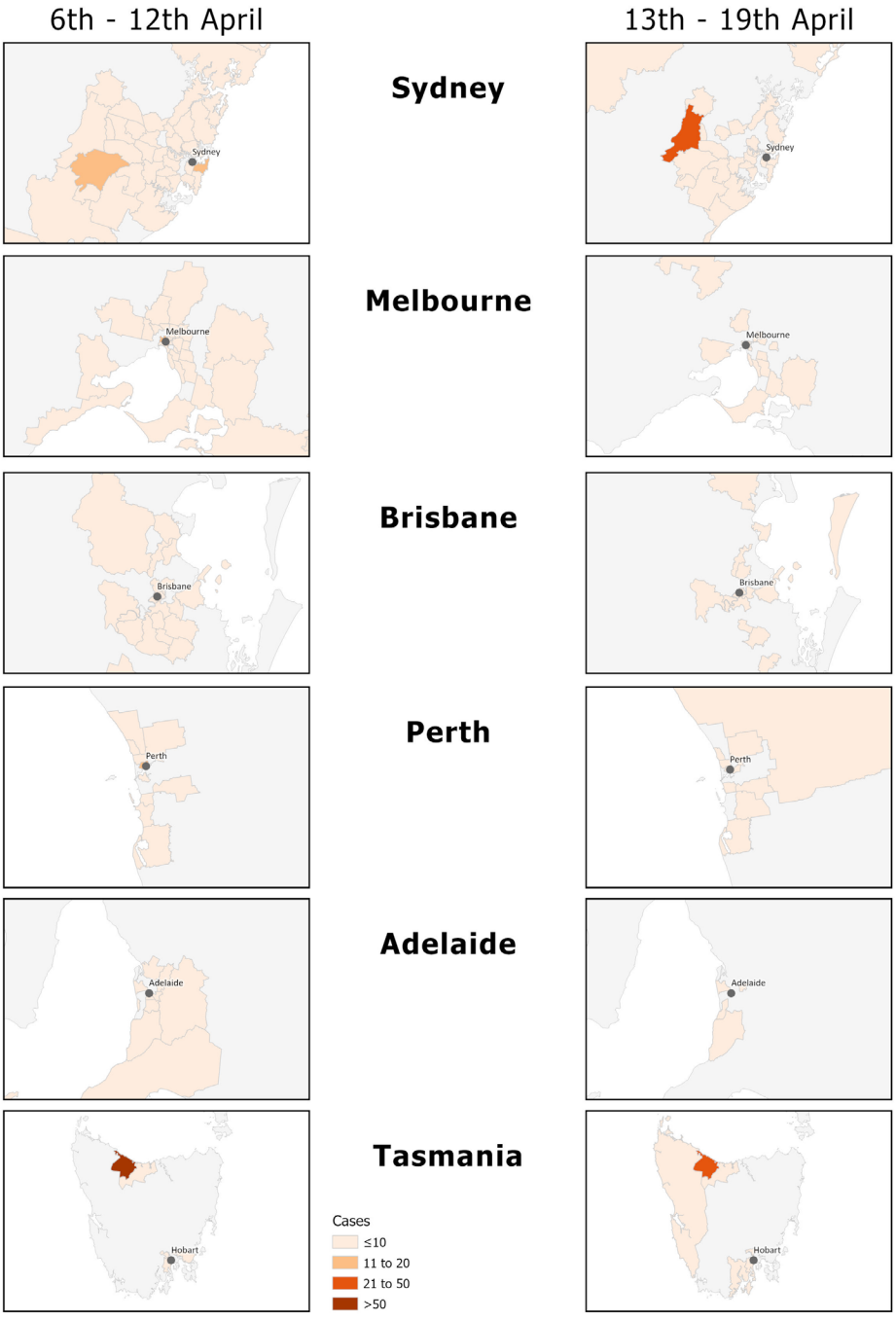
Figure 2: Number of cumulative new confirmed cases of COVID-19, Australia, by location of usual residence and statistical area level 3 (SA3)[a], 7 day heat maps as at 12 April and 19 April 2020[b]



a. Represents the usual location of residence of a case, which does not necessarily mean that this is the place where they acquired their infection or were diagnosed. Overseas residents who do not have a usual place of residence in Australia are not shown.

b. Based on diagnosis date from NNDSS reporting period up to 23:59 AEST 19 April 2020.

Figure 3. Number of cumulative new confirmed cases of COVID-19, across selected regions within Australia, by location of usual residence and selected areas[a], 7 day heat maps as at 12 April and 19 April 2020[b]



a. Represents the usual location of residence of a case, which does not necessarily mean that this is the place where they acquired their infection or were diagnosed. Overseas residents who do not have a usual place of residence in Australia are not shown.

b. Based on diagnosis date from NNDSS reporting period up to 23:59 AEST 19 April 2020.

Table 4: Demographics of all cases, hospitalised cases and deaths

Demographics of all cases, hospitalised cases and deaths			
	All cases	Hospitalisation	Death
Crude CFR	1%	6%	–
Median age (interquartile range)	48 (30–62)	60.5 (42–72)	79 (74–84)
Gender (male to female)	1:1	1:1	3:2

Table 5: Rate of weekly confirmed cases by date of illness onset[a] and place of acquisition, Australia, 23 March to 19 April 2020

	Place of acquisition – rate (per 100,000 population)			
Date of illness onset[a]	Overseas acquired	Locally acquired-close contact of a confirmed case	Locally acquired, not epi linked	Under investigation
23–29 March	3.6	1.8	<0.1	1.5
30 March – 5 April	0.9	0.8	< 0.1	0.7
6–12 April	0.4	0.5	< 0.1	0.2
13–19 April	< 0.1	0.3	0.1	< 0.1

a Based on diagnosis date from NNDSS reporting period up to 23:59 AEST 19 April 2020.

Notifications by gender were approximately equal in most jurisdictions except the ACT and Tasmania. Among cases reported in the ACT, there were slightly more males than females; among cases reported in Tasmania, there were slightly more females than males.

Notifications by gender differed by age group with a higher rate of disease in females in the 20–29 age group and a higher rate of disease in males in those aged over 60. It is unlikely that this disparity reflects differences in underlying susceptibility to COVID-19, instead it is more likely linked to transmission and possibly differences in behavioural patterns.

Source of infection

The incidence rate of overseas-acquired COVID-19 cases in Australia has decreased in the last three weeks. The rate of locally acquired cases has also decreased (Table 5).

Of cases with a reported place of acquisition, 64% had a recent international travel history and 25% were considered to have been locally acquired (Figure 6):

- The majority of overseas-acquired cases continue to report a travel history to the European Region, the Americas Region or on board cruise ships (Figure 7);
- Of the locally-acquired cases, most were considered to be contacts of a confirmed case, with a very small proportion of cases not able to be epidemiologically linked to a confirmed case; and
- Cases where a place of acquisition has not been reported (0.9%) are currently under public health investigation.

Figure 4: Age distribution of all cases, hospitalised cases, and deaths with median, interquartile range, and range

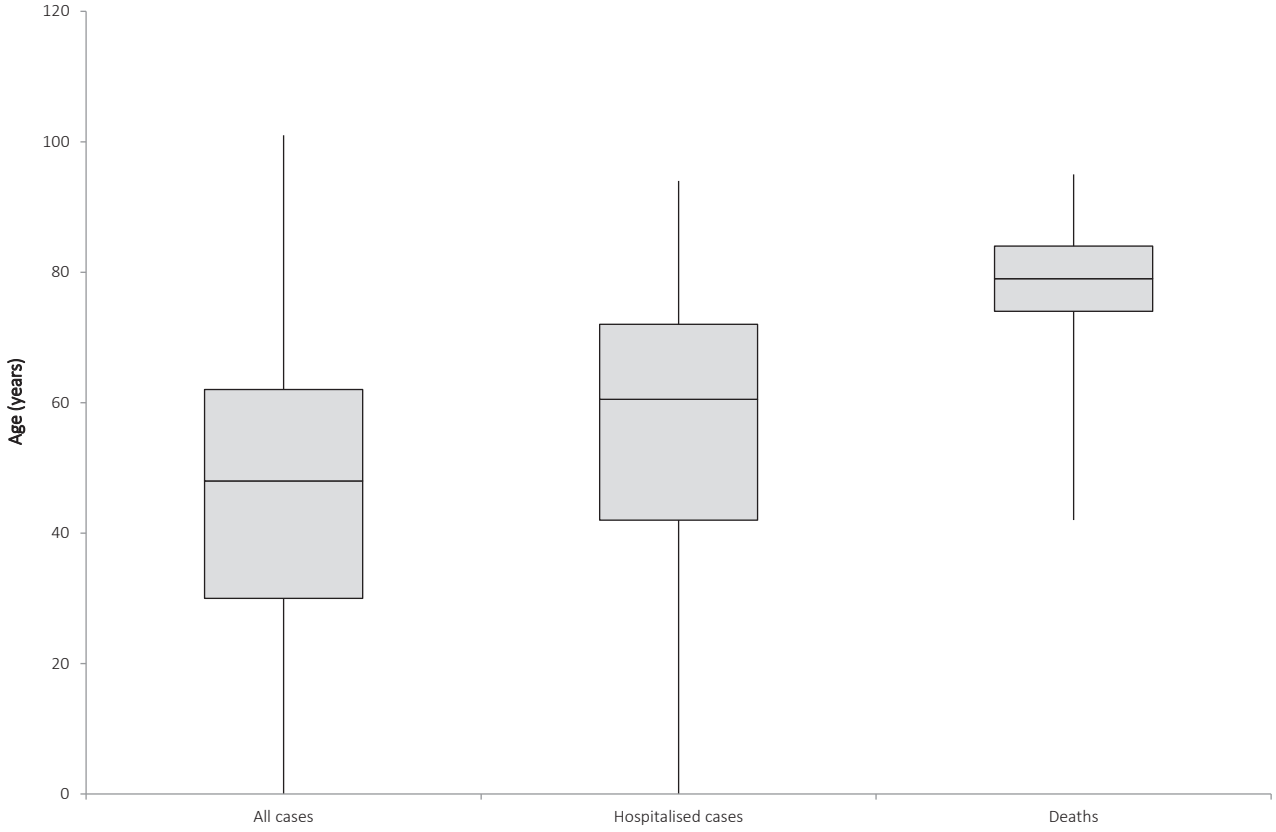


Figure 5: COVID-19 rates per 100,000 population of all cases notified in Australia, by age group and gender

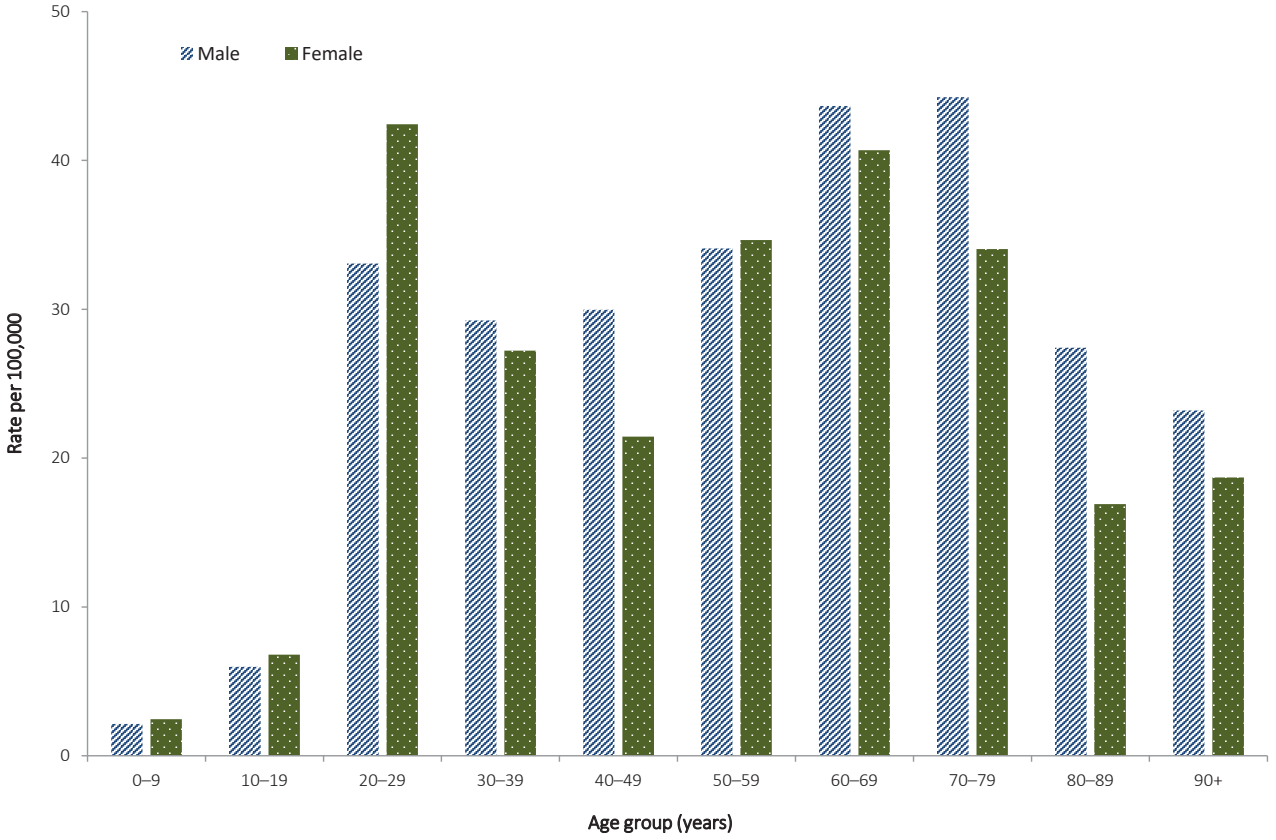


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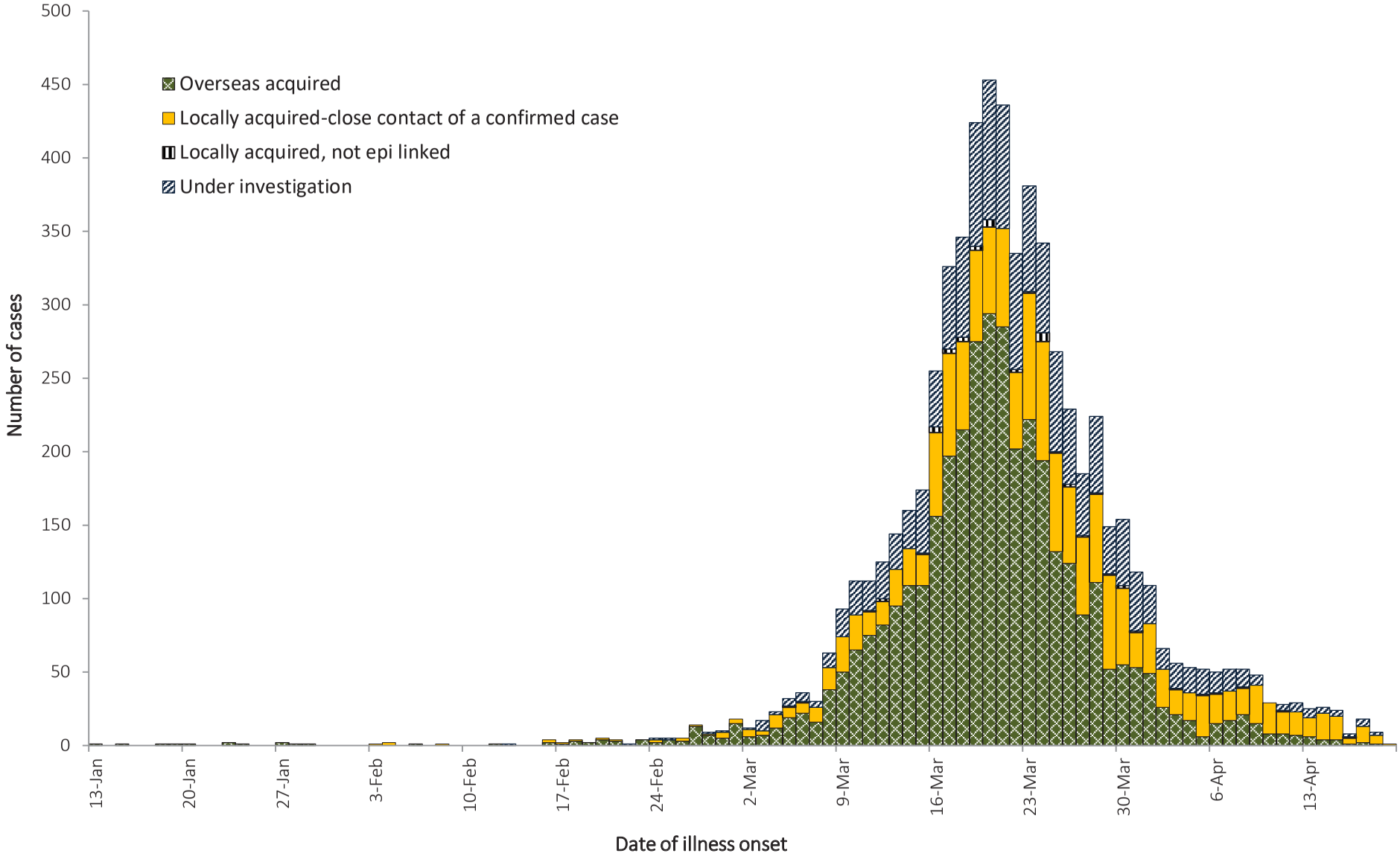
Figure 6: Number of COVID-19 cases by place of acquisition over time, Australia[a]



a Note that this graph is from NNDSS where there is a data completeness lag compared to more current proportions presented in text.

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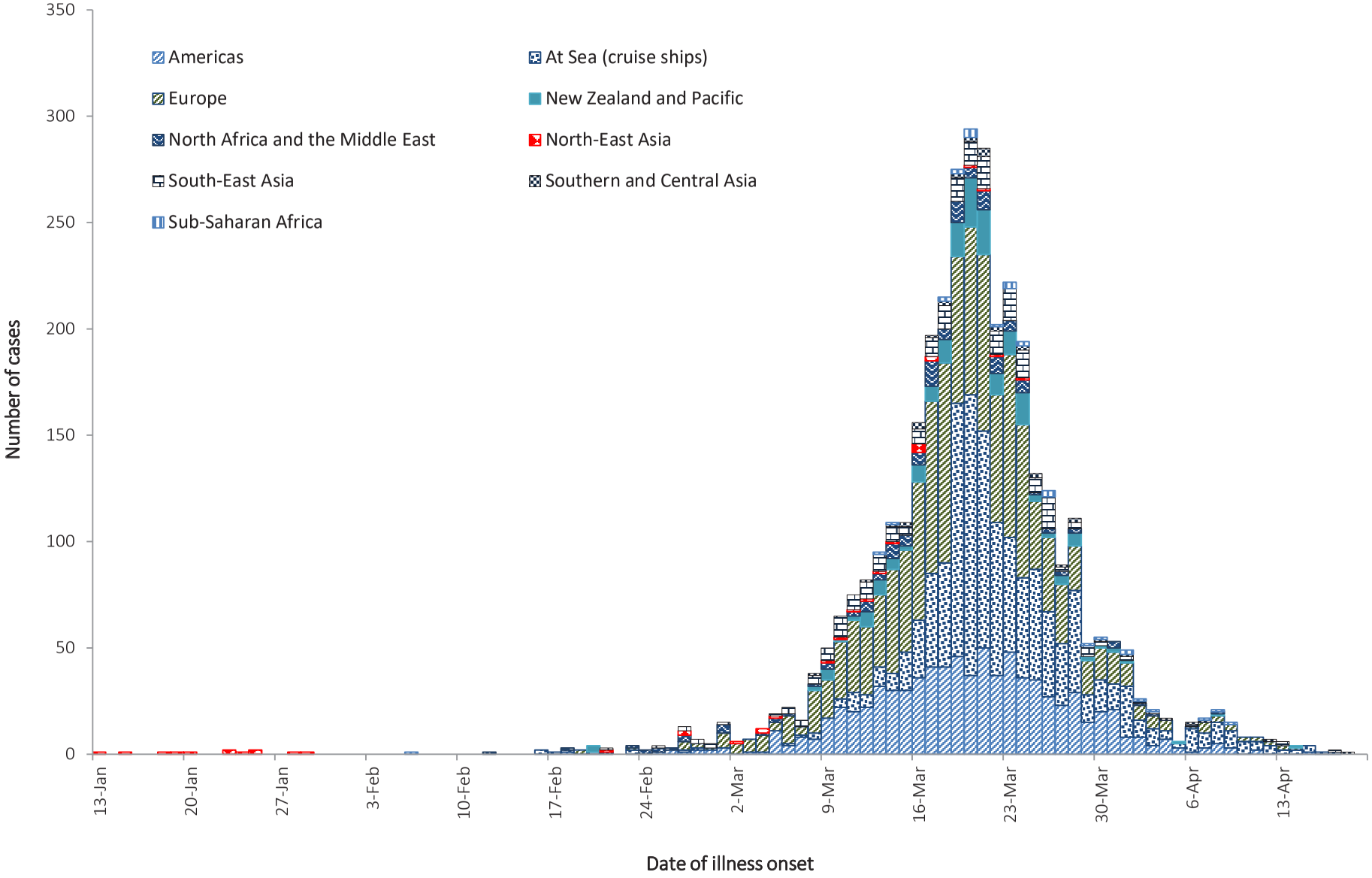
Figure 7: Confirmed cases of overseas-acquired COVID-19 infections (n = 3,638)[a]



a Note that this graph is from NNDSS where there is a data completeness lag compared to more current proportions presented in text.

Cluster:

- The term 'cluster' in relation to COVID-19 refers to two or more cases (who do not reside in the same household) that are epidemiologically related in time, place or person where a common source (such as an event or within a community) of infection is suspected but not yet established.

Outbreak:

- The term 'outbreak' in relation to COVID-19 refers to two or more cases (who do not reside in the same household) among a specific group of people and/or over a specific period of time where illness is associated with a common source (such as an event or within a community).

Cluster and outbreak investigations

Investigations are taking place in states and territories in relation to a number of clusters and outbreaks of COVID-19. To date the largest outbreaks have been associated with cruise ships, with some other large domestic clusters associated with aged care and healthcare facilities and private functions, such as weddings.

Cruise ships account for a substantial proportion of cases of COVID-19 in Australia. Of cases with a reported place of acquisition, 18% were acquired at sea on a cruise ship. This is an 8% increase in COVID-19 cases acquired on a cruise ship since the last reporting period. There have been 22 deaths in Australia among cases acquired on cruise ships.

Residents of aged care facilities are at increased risk of COVID-19 infection due to the environment of communal living facilities. These residents are more vulnerable to serious complications if they do become infected. As of 19 April 2020, there have been 90 cases of COVID-19 associated with 24 residential aged care facilities in Australia, with 20 recoveries and 11 deaths. Fifty-three of these cases occurred in aged care residents; the remaining 37 cases were in care staff. In addition, there have been 34 cases associated with 24 in-home Commonwealth funded aged care services providing support to older Australians who live at home, with 6 recoveries and 1 death. Twenty-five of these cases occurred in care recipients; the remaining nine cases were in care staff. Advice and guidelines have been provided to aged care services, including the release of an outbreak management guide.

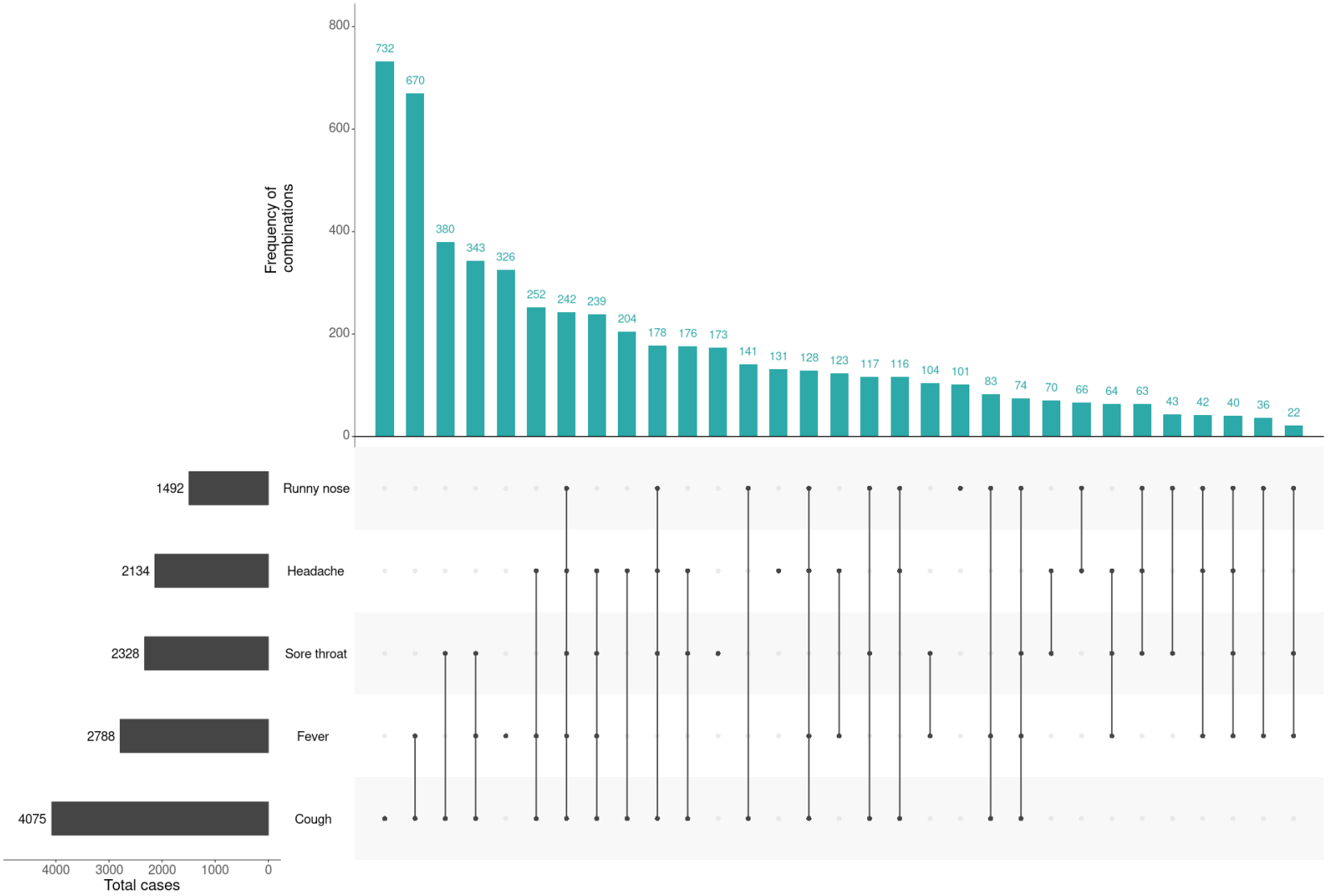
There have been instances of COVID-19 outbreaks occurring in Australian healthcare settings. The outbreak of COVID-19 in hospitals in north-west Tasmania began in late March 2020. Cases occurred among healthcare workers, patients and household contacts. As of 20 April 2020, there were 112 persons associated with the outbreak, including 72 staff members. The outbreak resulted in widespread quarantine of healthcare workers, patients and visitors to the affected hospitals. Investigations into the outbreak are continuing.

Symptom profile

Of the symptoms reported, cough (70%) was the most common (Figure 8). Forty-eight percent of cases reported fever, 40% reported sore throat, and 36% reported headache. Only 4% or fewer of all cases reported either pneumonia or acute respiratory disease (ARD). In addition, loss of taste was reported from 494 cases and loss of smell from 526 cases. These conditions were reported in approximately 11% of cases, noting that this is currently not a standard field in NNDSS, and is likely to under-represent those presenting with these symptoms.

Commun Dis Intell (2018) 2020;44(https://doi.org/10.33321/cdi.2020.44.36) Epub 24/4/2020

Figure 8: Variation in combinations of COVID-19 symptoms in confirmed cases, Australia[a]



a This figure shows the variation in combinations of symptoms observed in reported cases (n = 5,863 for the five most frequently observed symptoms (cough, fever, sore throat, headache, runny nose). The horizontal bars on the left show the frequency of symptom occurrence in any combination with other symptoms. The circles and lines indicate particular combinations of symptoms observed in individual patients. The vertical green bars indicate the frequency of occurrence of the corresponding combination of symptoms

Table 6: Common COVID-19 comorbidities for all cases, hospitalised cases, cases admitted to ICU and cases ventilated in ICU

	All cases (n = 4,072)[a]	Hospitalised cases (n = 497)[a]	Cases admitted to ICU (n = 104)[a]	Cases ventilated in ICU (n = 28)[a]
Cardiac disease	354 (9%)	93 (19%)	23 (22%)	6 (22%)
Diabetes	311 (8%)	96 (19%)	25 (24%)	8 (30%)
Chronic respiratory condition	153 (4%)	70 (14%)	13 (13%)	2 (7%)
Obesity	171 (4%)	41 (8%)	16 (15%)	7 (26%)

a Excludes those with missing data on comorbidities or where comorbidity is unknown

Severity

Of total cases of COVID-19 (n = 6,606) notified, 810 (12%) were admitted to hospital. This is substantially less than the proportion of diagnosed cases requiring hospitalisation reported from EU/EEA countries (32%).[1] The median age of hospitalised cases was 60.5 years (interquartile range: 42–72 years), with the highest proportion of hospitalised cases in the 60–69 years and 70–79 years age groups. The most commonly reported comorbid conditions among hospitalised cases were cardiac disease, diabetes (each 19%) and chronic respiratory condition (14%). Obesity was reported as a comorbid condition by 8% (n=41) of hospitalised cases.

Of the hospitalised COVID-19 cases, 17% (n = 141) were admitted to an intensive care unit (ICU), with 39 cases receiving ventilation. The most commonly reported comorbid conditions among cases admitted to an ICU were diabetes (24%) and cardiac disease (22%), which is similar to those reported among hospitalised cases. However, a greater proportion of cases admitted to an ICU and receiving ventilation reported being obese (15% and 26% respectively).

The median time between onset of symptoms and laboratory testing was 2 days (IQR: 1–4 days).

Sixty-nine COVID-19 associated deaths were confirmed in Australia up to 19 April 2020. The median age of cases who died was 79 years (IQR: 74–84 years). Forty-two of the cases were male and 27 were female. The most commonly reported comorbid conditions among COVID-19 deaths were diabetes (33%), cardiac disease (27%) and chronic respiratory disease (24%).

Table 7: Timeline of key COVID-19 related events, including Australian public health response activities, from 1 March to 19 April 2020

Date	Event / response activity
16 April 2020	AHPPC provides advice on reducing the potential risk of COVID-19 transmission in schools.[2]
9 April 2020	Air crew on international flights will be required to self-isolate at their place of residence (or hotel if not in their local city) between flights or for 14 days, whichever is shorter.[3]
30 March 2020	Special provisions be applied to vulnerable people in the workplace and application of additional regional social distancing measures to combat COVID-19.[4]
29 March 2020	Both indoor and outdoor public gatherings limited to two persons only.
28 March 2020	All people entering Australia required to undertake a mandatory 14-day quarantine at designated facilities (e.g. hotels) in their port of arrival.
26 March 2020	Restricted movement into certain remote areas to protect community members from COVID-19.
24 March 2020	• Temporary suspension of all non-urgent elective procedures in both the public and private sector; • Progressive scale up of social distancing measures with stronger measures in relation to non-essential gatherings, and considerations of further more intense options; and • Aged care providers limit visits to a maximum of two visitors at one time per day.
25 March 2020	• School-based immunisation programs, with the exception of the delivery of meningococcal ACWY vaccine, are paused; and • Australian citizens and Australian permanent residents are restricted from travelling overseas.
21 March 2020	Qld, WA, NT and SA close borders to non-essential travellers.
20 March 2020	Travel ban on foreign nationals entering Australia; Restriction of travel to remote communities; and Tasmania closes borders to non-essential travellers.
18 March 2020	• DFAT raises travel advice for all overseas destinations to Level 4 'Do Not Travel'; • Continuation of a 14-day quarantine requirement for all returning travellers; and • Restrictions on indoor gatherings.
16 March 2020	Non-essential static gatherings of > 500 people banned.
15 March 2020	All overseas arrivals required to self-isolate for 14 days and cruise ship arrivals banned.
8 March 2020	Restrictions on COVID-19 contacts and travellers from listed higher risk countries.
5 March 2020	Restrictions on travel from Republic of Korea.
1 March 2020	Restrictions on travel from Islamic Republic of Iran.

Public health response

Since COVID-19 first emerged internationally, Australia has implemented public health measures in response to the disease's epidemiology, both overseas and in Australia. These measures are focused on restrictions on domestic and international travel and public gatherings; priorities for testing and quarantining of suspected cases and close contacts; guidance on effective social distancing; and the protection of vulnerable populations such as those in residential care facilities and remote Aboriginal and Torres Strait Islander communities. Key aspects of Australia's evolving public health response are summarised in Table 7.

During the current reporting period, the Australian Health Protection Principal Committee (AHPPC) has issued advice to inform the national public health response to the pandemic including practical guidance and advice for school leaders engaging with children, parents, teachers, and support staff to reduce even further the relatively low risk of COVID-19 transmission in schools. AHPPC has also released a statement on the next phase of modelling to better understand the present state of the epidemic, and to define the effectiveness of current public health interventions in reducing COVID-19 transmission to shape future decisions on response strategies.[5]

International situation[6]

As at 23:59 AEST 19 April 2020, the number of confirmed COVID-19 cases reported to the World Health Organization (WHO) was 2,241,359 globally. COVID-19 was reported across a total of 216 countries, territories and areas.

The number of new cases reported globally increased by 76% since last week. This is an increase by 26% on the previous week's number of new cases.

The reported epidemiology varies by country, with different trajectories of outbreaks after their first 100 cases. Figure 9 highlights that for a number of countries outside of mainland China which have reported more than 100 cases, their rates of increase continue to be high, particularly USA, Spain and Italy, although at a slower rate than the previous week. For Singapore and Japan, there continues to be a slow but steady rate of increase in their number of new cases, while the Republic of Korea and Hong Kong are reporting very few new cases each day. Reported case numbers will be influenced by rates of testing, case definition, and case detection as well as overall health system capacity.

Globally, 152,551 deaths have been reported. The risk of death is reported to increase with age. The case fatality rate is reported as 6.8%. This is highly likely to be an overestimate due to variable levels of under-ascertainment of cases, especially those with mild infections and presence of a comorbid condition such as diabetes, cardiovascular disease and chronic respiratory disease.

Of all deaths reported globally, approximately half have been from the USA (21%), Italy (15%) and Spain (13%). For several other countries or regions including Japan and Republic of Korea, there continues to be a slow increase in their number of deaths, with both countries reporting few new deaths each day, which is consistent with their broader epidemic case trends (Figure 10).

The crude case fatality rate (CFR) in Australia is 1%. This is substantially lower than the global WHO reported rate of 6.8%. Crude CFR is reflective not only of disease severity and health care capability in different countries but also of case ascertainment. Cases with high severity are more likely to be detected by public health surveillance and as such can artificially inflate the reported CFR. Internationally the CFR varies by country. The low CFR in Australia is likely to be reflective of high case ascertainment, which further enables an effective public health response so as to control disease spread.

Figure 9: Number of COVID-19 cases (logarithmic scale) by selected country or region and days since passing 100 cases, up to 19 April 2020

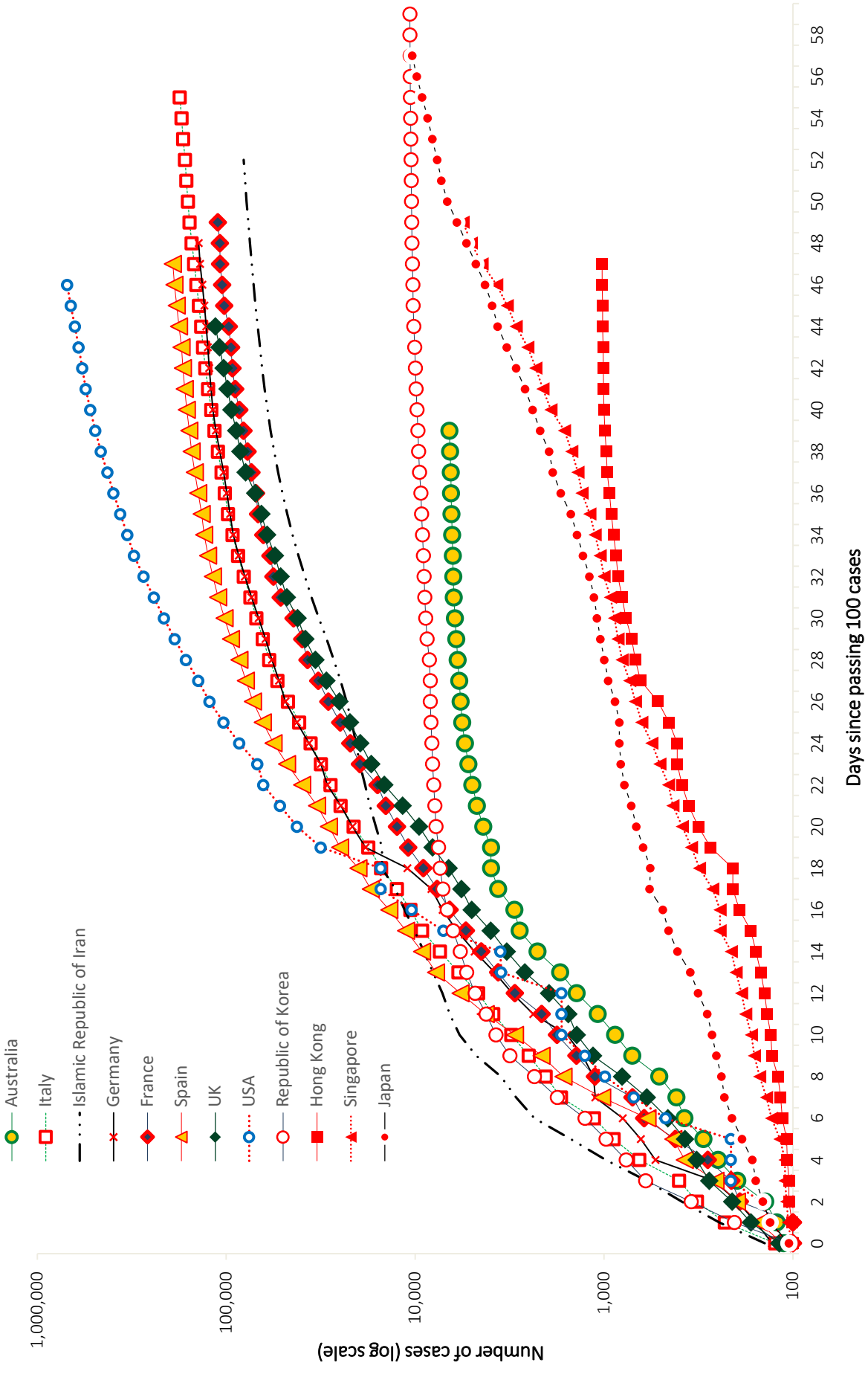
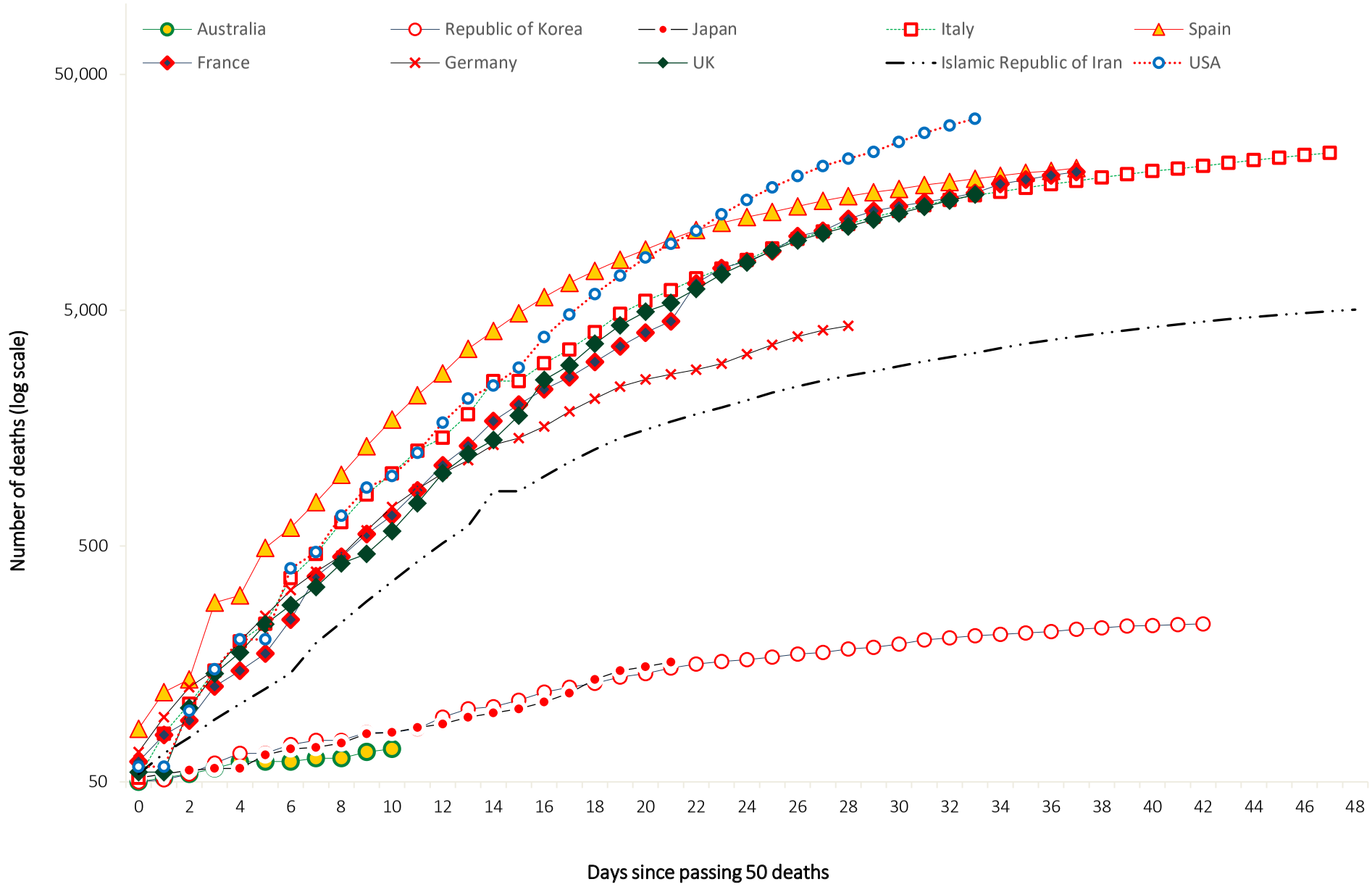


Figure 10: Number of COVID-19 deaths (logarithmic scale) by selected country and days since passing 50 deaths, up to 19 April 2020



Background

The current estimates on epidemiological parameters including severity, transmissibility and incubation period are uncertain. Estimates are likely to change as more information becomes available.

Transmission

Human-to-human transmission of SARS-CoV-2 is via droplets and fomites from an infected person to a close contact.[7] A virological analysis of hospitalised cases found active virus replication in upper respiratory tract tissues, with pharyngeal virus shedding during the first week of symptoms. However, current evidence does not support airborne or faecal-oral spread as major factors in transmission.

A study in China showed an association between household contacts and travel with a confirmed COVID-19 case and an increased risk of infection.[8]

A case report of nine COVID-19 patients in Germany found that RNA viral shedding from sputum still occurs after symptoms have cleared. In 50% of the patients, seroconversion occurred after seven days with a range of up to 14 days; this seroconversion was not followed by a rapid decline in viral load.[9] However, it is unknown if detection of viral RNA correlates with shedding of live virus and transmission risk.

A recent study suggests that children do not play a key role in household transmission and are unlikely to be the primary source of household infections.[10] In a population-based study in Iceland, children under 10 years old had a lower incidence of SARS-CoV-2 infection than adults; 6.7% vs. 13.7% in children and adults respectively.[11]

Incubation period

Estimates of median incubation period, based on seven published studies, are 5 to 6 days (ranging from 0 to 14 days). Patients with long incubation periods do occasionally occur; however, they are likely to be 'outliers' who should be studied further but are unlikely to represent a change in epidemiology of the virus.[12,13]

Molecular epidemiology

Since December 2019, the virus has diversified into multiple lineages as it has spread globally with some degree of geographical clustering. The whole genome sequences currently available from Australian cases are mostly in returned travellers from China, the Islamic Republic of Iran, Europe and the USA, and thereby reflect this global diversity. Recent work describes an emerging clade linked to the epidemic in the Islamic Republic of Iran.[14]

Clinical features

COVID-19 presents as mild illness in the majority of cases with cough and fever being the most commonly reported symptoms. Severe or fatal outcomes are more likely to occur in the elderly or those with comorbid conditions.[7,15]

Some COVID-19 patients show neurological signs such as headache, nausea and vomiting. There is evidence that SARS-CoV-2 viruses are not always confined to the respiratory tract and may invade the central nervous system inducing neurological symptoms. As such, it is possible that invasion of the central nervous system is partially responsible for the acute respiratory failure of COVID-19 patients.[16]

There is some evidence to suggest that impairment or loss of the sense of smell (hyposmia/anosmia) or taste (hypoguesia/aguesia) is associated with COVID-19.[17,18] This is supported by research finding a biological mechanism for the SARS-CoV-2 virus to cause olfactory dysfunction.[19,20]

Examination of cases and their close contacts in China found a positive association between age and time from symptom onset to recovery. The study also found an association between clinical severity and time from symptom onset to

time to recovery. Compared to people with mild disease, those with moderate and severe disease were associated with a 19% and 58% increase in time to recovery, respectively.[8]

Several studies have identified cardiovascular implications resulting from COVID-19. Vascular inflammation has been observed in a number of cases and may be a potential mechanism for myocardial injury which can result in cardiac dysfunction and arrhythmias.

Recently published literature outside of Wuhan found that approximately 10% of all cases developed gastrointestinal symptoms associated with COVID-19 infection either on admission or during hospitalisation.[21,22] This number is higher than the 3% previously reported in Wuhan.

Treatment

Current clinical management of COVID-19 cases focuses on early recognition, isolation, appropriate infection control measures and provision of supportive care.[23] Whilst there is no specific antiviral treatment currently recommended for patients with suspected or confirmed SARS-CoV-2 infection, multiple clinical trials are underway to evaluate a number of therapeutic agents, including remdesivir, lopinavir/ritonavir, and chloroquine or hydroxychloroquine.[24]

Data considerations

Data were extracted from the NNDSS on 21 April 2020, by diagnosis date. Due to the dynamic nature of the NNDSS, data in this extract are subject to retrospective revision and may vary from data reported in published NNDSS reports and reports of notification data by states and territories.

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Appendix A: Frequently asked questions

Q: Can I request access to the COVID-19 data behind your CDI weekly reports?

A: National notification data on COVID-19 confirmed cases is collated in the National Notifiable Disease Surveillance System (NNDSS) based on notifications made to state and territory health authorities under the provisions of their relevant public health legislation.

Normally, requests for the release of data from the NNDSS requires agreement from states and territories via the Communicable Diseases Network Australia, and, depending on the sensitivity of the data sought and proposed, ethics approval may also be required.

Due to the COVID-19 response, unfortunately, specific requests for NNDSS data have been put on hold. We are currently looking into options to be able to respond to data requests in the near future.

We will continue to publish regular summaries and analyses of the NNDSS dataset and recommend the following resources be referred to in the meantime:

- NNDSS summary tables: http://www9.health.gov.au/cda/source/cda-index.cfm
- Daily case summary of cases: https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers
- Communicable Diseases Intelligence COVID-19 weekly epidemiology report: https://www1.health.gov.au/internet/main/publishing.nsf/Content/novel_coronavirus_2019_ncov_weekly_epidemiology_reports_australia_2020.htm
- State and territory public health websites.

Q: Can I request access to data at post-code level of confirmed cases?

A: Data at this level cannot be released without ethics approval and permission would need to be sought from all states and territories via the Communicable Diseases Network Australia. As noted above, specific requests for NNDSS data are currently on hold.

A GIS/mapping analysis of cases will be included in each *Communicable Diseases Intelligence* COVID-19 weekly epidemiology report. In order to protect privacy of confirmed cases, data in this map will be presented at SA3 level.

Q. Where can I find more detailed data on COVID-19 cases?

A: We are currently looking into ways to provide more in-depth epidemiological analyses of COVID-19 cases, with regard to transmission and severity, including hospitalisation. These analyses will continue to be built upon in future iterations of the weekly *Communicable Diseases Intelligence* report.