2019-nCoV acute respiratory disease, Australia
Epidemiology Report 1
Reporting week 26 January – 1 February 2020
2019-nCoV National Incident Room Surveillance Team
Weekly epidemiological report

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Summary

This is the first epidemiological report of novel coronavirus (2019-nCoV) acute respiratory disease infections reported in Australia at 19:00 Australian Eastern Daylight Time [AEDT] 1 February 2020. It includes data on Australian cases notified during the week 26 January to 1 February 2020 and in the previous week (19 to 25 January 2020), the international situation and current information on the severity, transmission and spread of the 2019-nCoV infection.

Keywords: novel coronavirus (2019-nCoV); respiratory disease; case definition; epidemiology; Australia

The following epidemiological data are subject to change both domestically and internationally due to the rapidly evolving situation. Australian cases are still under active investigation. While every effort has been made to standardise the investigation of cases nationally, there may be some differences between jurisdictions.

In Australia:

- A total of twelve cases of 2019-nCoV infection were notified up until 1 February 2020;
- All twelve cases reported a travel history to China, and 92% (11/12) had a travel history to Wuhan, Hubei Province, China;
- The majority of cases (92%, 11/12) developed mild to moderate symptoms, with one case (8%, 1/12) admitted to intensive care;
- Zero deaths were reported; and
- Two days elapsed since the onset of illness in the latest confirmed case and the date of this report.

Internationally:

- Case numbers are increasing rapidly with 11,953 infections confirmed globally; and
- The majority of confirmed infections (11,821) were reported in China, as well as 259 deaths.
Domestic cases

There were twelve confirmed cases reported in Australia as at 19:00 AEDT 1 February 2020 (Table 1). Cases were reported in New South Wales (n = 4), Victoria (n = 4), Queensland (n = 2) and South Australia (n = 2). The first onset of signs and symptoms in a case occurred on 13 January 2020 (Figure 1). The majority of cases (92%, 11/12) had a travel history to Wuhan. The remaining case had direct contact with a confirmed case from Wuhan while travelling in China. All cases acquired their infection in China, which resulted in many close contacts requiring investigation. The median age of cases was 45 (range 21–66) years. The male-to-female ratio was 1.4:1. All cases (12/12) reported fever and/or chills and 83% (10/12) reported cough. Two cases were reported with pneumonia (Figure 2). Approximately 75% (9/12) of cases were hospitalised for clinical management and infection control, including one patient who was admitted to an Intensive Care Unit (ICU). The clinical course of infection was unavailable from these preliminary data. There were no deaths associated with the outbreak in Australia. The median time between onset of illness and collection of a specimen was 1 day (range 0–9 days).

International status report

As at 19:00 AEST 1 February 2020 the number of confirmed 2019-nCoV cases was 11,953 globally (Table 2). Mainland China reported the majority of cases (11,791) and all of the 259 deaths.1 As of 1 February 2020, countries and Special Administrative Regions outside of mainland China reported 162 confirmed 2019-nCoV cases and zero deaths.

Table 1: Cumulative notified cases of confirmed 2019-nCoV by jurisdiction, Australia, 2020

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>This week (26 Jan to 1 Feb)</th>
<th>Last week (19 to 25 Jan)</th>
<th>Total cases (as of 1 Feb 2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of cases</td>
<td>No. of cases</td>
<td>No. of cases</td>
</tr>
<tr>
<td>NSW</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Vic</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Qld</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>WA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SA</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Tas</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NT</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ACT</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total cases</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Background

The World Health Organization (WHO) declared the outbreak of 2019-nCoV a Public Health Emergency of International Concern (PHEIC) on 30 January 2020.2 Cases were initially associated with exposure to a wet market – located in Wuhan, Hubei Province, China – indicating a possible zoonotic source. Sustained human-to-human transmission is now likely to be occurring in the majority of provinces outside of Hubei Province in China. Additionally, limited instances of human-to-human transmission were observed in a number of countries outside mainland China.3, 4

As of 1 February 2020, mainland China had reported 11,791 confirmed 2019-nCoV cases and 259 deaths.5

As of 1 February 2020, countries and Special Administrative Regions outside of mainland China reported 162 confirmed 2019-nCoV cases and zero deaths.

Severity

Patients with 2019-nCoV infection present with a wide range of symptoms. Most seem to have...
Figure 1: Confirmed cases of 2019-nCoV infection by date of illness onset, Australia 2020

Figure 2: Signs and symptoms reported by 2019-nCoV cases in Australia, 2020 (n = 12)
Table 2: Cumulative confirmed cases of 2019-nCoV globally, excluding Australia, 2019–2020

<table>
<thead>
<tr>
<th>Country / Special Administrative Region</th>
<th>This reporting week (26 Jan to 1 Feb 2020)</th>
<th>Total cases (from Dec 2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>mainland China</td>
<td>10,504</td>
<td>11,791</td>
</tr>
<tr>
<td>Finland</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>France</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Germany</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>India</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Italy</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Japan</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Macau</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Nepal</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Philippines</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Republic of South Korea</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Singapore</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Spain</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sweden</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Taiwan</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Thailand</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>United States of America</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Vietnam</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>
mild disease, and about 20% appear to progress
to severe disease, including pneumonia, respira-
tory failure and in some cases death.\textsuperscript{6}

Transmission

The exact nature of transmission is poorly un-
derstood. WHO report ‘during previous
outbreaks due to other coronavirus (Middle-
East Respiratory Syndrome (MERS) and Severe
Acute Respiratory Syndrome (SARS)), human-to-
human transmission occurred through droplets,
contact and fomites, suggesting that the trans-
mission mode of the 2019-nCoV can be similar’.\textsuperscript{7}
Sustained human-to-human transmission is
likely to be now occurring in the majority of
provinces in mainland China. The basic repro-
ductive number, \(R_0\), indicates how contagious an
infectious disease is and is defined as the average
expected number of secondary cases produced
by a single infection in a completely susceptible
population. Chinese authorities reported a pre-
liminary \(R_0\) of 1.4–2.5 on 23 January 2020 to the
WHO International Health Regulations (2005)
Emergency Committee.\textsuperscript{8} On 31 January 2020,
Thailand reported its first instance of close com-
munity human-to-human transmission (not
within a household setting).\textsuperscript{9} Other instances
were reported in Japan, Germany and Vietnam.\textsuperscript{4}

Incubation period

Current estimates of the incubation period of
2019-nCoV from the WHO range from 2 to 10
days, with these estimates to be refined as more
data become available.\textsuperscript{7} A recently-published
article characterising the first 425 cases in
Wuhan, Hubei Province China estimated the
mean incubation period to be 5.2 days (95%
confidence interval, 4.1–7.0).\textsuperscript{10} \textsuperscript{10}

Recommendations for control

The WHO recommends the general public
reduce their exposure and transmission to 2019-
nCoV by:

- Frequently cleaning hands by using alcohol-
based hand rub or soap and water;
- When coughing and sneezing cover mouth
and nose with flexed elbow or tissue – throw
tissue away immediately and wash hands;
- Avoid close contact with anyone who has
fever and cough;
- If you have a fever, cough and difficulty
breathing seek medical care early and share
previous travel history with your health care
provider.

Treatment

Currently there is no specific medication rec-
commended for 2019-nCoV. Antibiotics are not
effective against viruses. Some antiviral medi-
cations have shown promise in treating MERS
and are now being tested for their effectiveness
against 2019-nCoV.\textsuperscript{11} Experimental vaccines are
also in development. Clinical care of suspected
patients with 2019-nCoV should focus on early
recognition, immediate isolation, implementa-
tion of appropriate infection prevention and
control measures and provision of optimised
supportive care.\textsuperscript{6}

Methods

Data for this report were current as at 19:00
hours AEDT, 1 February 2020.

This report outlines what is known epidemi-
ologically on 2019-nCoV in Australia and from
publicly available data from WHO Situation
Reports, other countries’ official updates and
the scientific literature. Data on domestic cases
in this report were collected from National
Notifiable Diseases Surveillance System
(NNDSS) and state and territory case investi-
gation reports. The Communicable Diseases
Network Australia (CDNA) developed the case
definition for suspected and confirmed cases,
which was modified at different time points in
the epidemic (23 January and 27 January 2020)
(Table 3). CDNA developed national guidance
on investigating suspected and confirmed cases
of 2019-nCoV. Based on this guidance, state and
territory health department investigators con-
ducted interviews of suspected cases to collect core and enhanced data for inclusion in NNDSS. Data were analysed using Stata to describe the epidemiology of infections in Australia and the progress of the epidemic.

Data for the international reports of 2019-nCoV case numbers by country were compiled from a range of sources. Case definitions for these case counts varied considerably making comparisons difficult. Rapid reviews of the current state of knowledge on 2019-nCoV were conducted from the literature using PubMed.

Acknowledgements

This report represents surveillance data reported through CDNA as part of the nationally coordinated response to 2019-nCoV. We thank public health staff from incident emergency operations centres in state & territory health departments, and the Australian Government Department of Health; along with state and territory public health laboratories.

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Table 3: Australian 2019-nCoV case definition as of 1 February 2020

<table>
<thead>
<tr>
<th>Date of development</th>
<th>Suspected Cases</th>
<th>Confirmed Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 January 2020</td>
<td>As the full clinical spectrum of illness is not known, clinical and public health judgement should also be used to determine the need for testing in patients who do not meet the clinical criteria below. If the patient satisfies epidemiological and clinical criteria, they are classified as a suspect case.</td>
<td>A person who tests positive to a specific 2019-nCoV PCR test (when available) or has the virus identified by electron microscopy or viral culture, at a reference laboratory.</td>
</tr>
</tbody>
</table>

Epidemiological criteria
- Travel to Hubei Province, China in the 14 days before the onset of illness.
- OR
- Travel to agreed areas of human-to-human transmission, or a declared outbreak, within 14 days before onset of illness.
- OR
- Close contact in 14 days before illness onset with a case of 2019-nCoV.

Clinical criteria
- Fever or history of fever (≥38 °C) and acute respiratory infection (sudden onset of respiratory infection with at least one of: shortness of breath, cough or sore throat).
- OR
- Severe acute respiratory infection requiring admission to hospital with clinical or radiological evidence of pneumonia or acute respiratory distress syndrome (i.e. even if no evidence of fever).

* The previous case definition developed on 23 January 2020 required that suspected cases had travelled to the city of Wuhan.
References


12. Australian Government Department of