

# COVID-19 in schools and early childhood education and care services – the Term 4 experience in NSW

Prepared by the National Centre for Immunisation Research and Surveillance (NCIRS)  
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## Overview

- This report provides an overview of investigation into all COVID-19 cases in the state of New South Wales (NSW), Australia in all schools and early childhood education and care (ECEC) services between 26 September 2020 and 18 December 2020 (school term 4 of the academic year).
- 10 individuals (9 students and 1 staff member) from 10 educational settings (6 schools and 4 ECEC services) were confirmed as primary COVID-19 cases who had an opportunity to transmit the SARS-CoV-2 virus to others in their school or ECEC service.
- 1,113 individuals (953 students [86%] and 160 [14%] staff members) were identified as close contacts of these 10 primary cases.
- 13 secondary cases (12 students and 1 staff member) occurred in 4 educational settings (2 primary schools and 2 ECEC services).
- In addition, during the school summer holidays (19 December 2020 to 26 January 2021), 1 individual (student) from an ECEC service was confirmed as a primary COVID-19 case who was infectious during their attendance. There were 16 close contacts and no secondary cases.
- For details on Term 1, Term 2 and Term 3 data, refer to NCIRS reports [here](#) or view our publication in The Lancet Child and Adolescent Health [here](#).

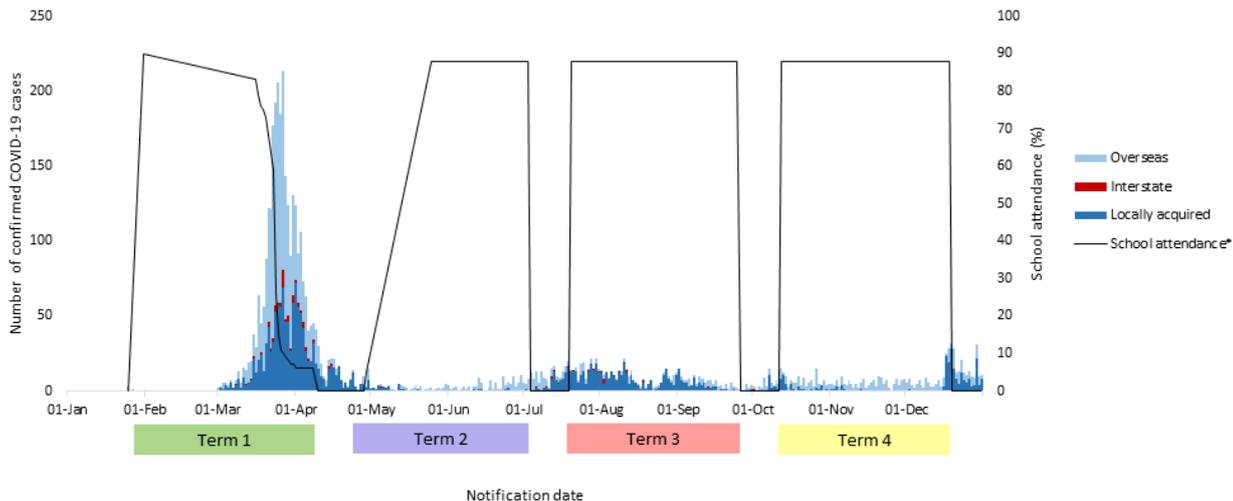
## Background

The National Centre for Immunisation Research and Surveillance (NCIRS), with the support of the NSW Ministry of Health and NSW Department of Education, has been conducting surveillance of SARS-CoV-2 transmission in educational settings throughout the 2020 school year in New South Wales, Australia (state population 8.1 million).

In Term 4 (26 September 2020 to 18 December 2020), there were 555 COVID-19 cases across NSW, with 158 cases locally acquired, of which 24 were aged ≤18 years. Schools and ECEC services remained open for face to face learning throughout the term. COVID safe practices were eased on 26 September (refer to Appendix), allowing for interschool activities, music ensembles with participants keeping 1.5 metre distance from one another, graduations, formals, excursions and orientation.<sup>1</sup>

ECEC services and out of school vacation care opened during the school summer holiday period (19 December 2020 to 26 January 2021). During this holiday period, there were 333 COVID-19 cases across NSW, with 133 cases locally acquired, of which 41 were aged ≤18 years.

**Figure 1: COVID-19 cases by likely infection source and notification date, NSW 2020<sup>2</sup>**



\*During school holidays, most ECEC services and out of school vacation care are still operational.

## Methods

Laboratory-confirmed paediatric (aged  $\leq 18$  years) and adult COVID-19 cases who attended a school or ECEC service while considered infectious (defined as 24 hours before symptom onset, based on national guidelines during the study period) were investigated for onward transmission.

Full details of our methods can be found in previous [reports](#) and in our [publication](#).<sup>3</sup>

A 'close contact' is defined as a person who has been in face-to-face contact for at least 15 minutes or in the same room for 2 hours with a case while infectious (i.e. during their symptomatic period and 48 hours before symptom onset). Because physical distancing has not been implemented among students in schools and ECEC services, the inclusion criteria for being a close contact were broadened to include any person who was in the same room for 1 hour or more with a case while infectious.

An outbreak is defined as  $\geq 2$  secondary cases in a school or ECEC service.

## Results

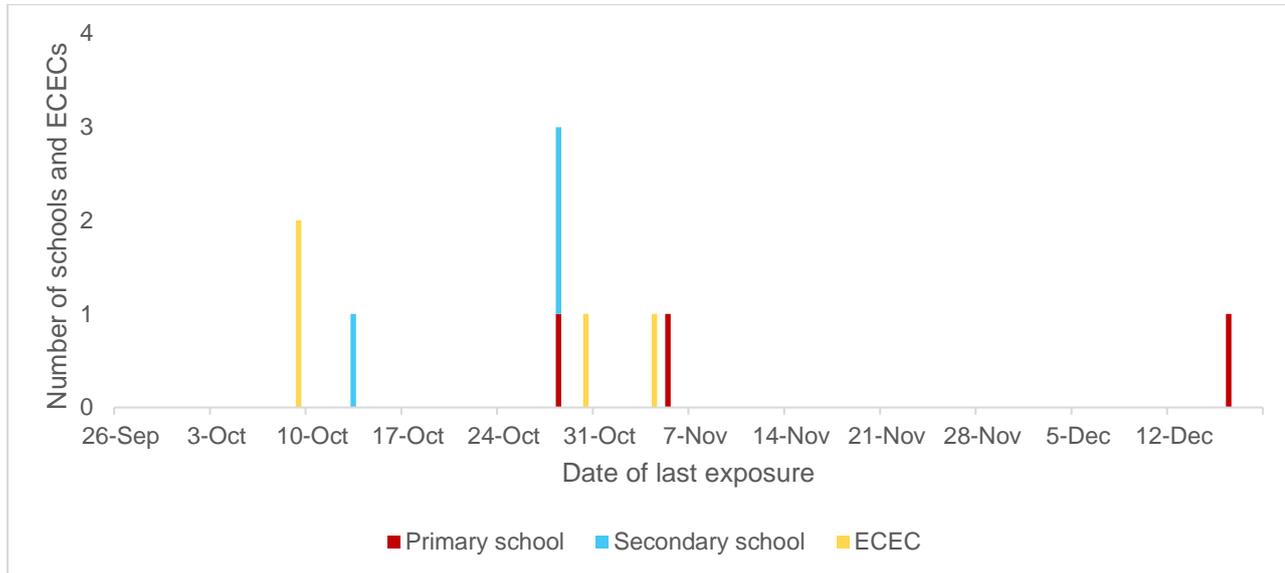
In Term 4, 10 educational settings (3 high schools, 3 primary schools and 4 ECEC services) were investigated for having a case with COVID-19 in a staff member or student who attended while infectious.

There were 10 primary COVID-19 cases (9 students and 1 staff member; [Figure 2](#)), all of whom acquired infection via local transmission. All cases had known sources of infection. Five cases acquired COVID-19 through household contacts and 5 by community non-household contacts.

Public health staff identified 1,113 close contacts of the 10 primary cases (953 students and 160 staff members), of whom 1,098 (98.7%) contacts were tested: nose/throat swabs for nucleic acid testing (NAT) were taken from 1,098 (98.7%) of contacts. Antibody testing was performed on 9/20 (45%) contacts in 1 school.

Thirteen secondary cases (12 students and 1 staff member) occurred in four educational settings (2 primary schools and 2 ECEC services), with an overall secondary attack rate of 1.2% (13/1,098). All student and staff cases had mild infection and did not require hospitalisation.

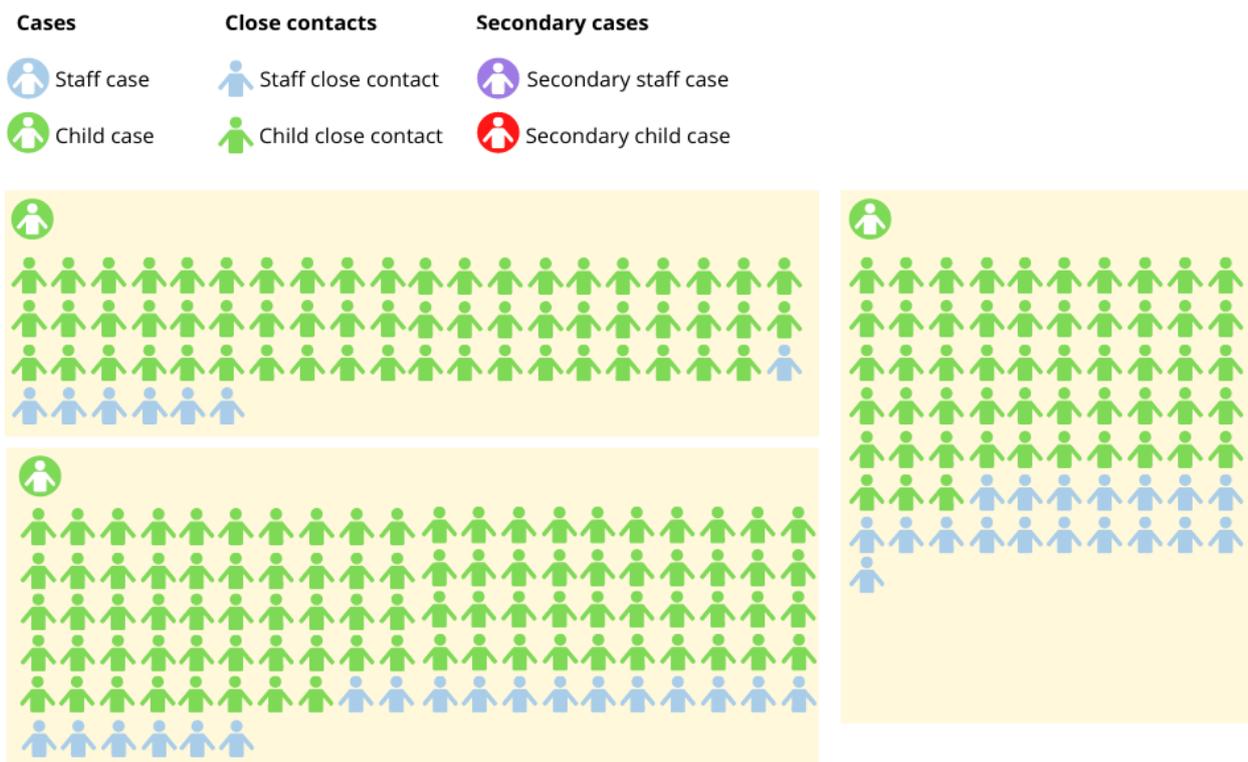
**Figure 2: NSW schools and ECEC services with a COVID-19 primary case(s) in Term 4**



### High schools

A total of 3 primary COVID-19 cases (all among students) who attended 3 high schools while infectious were identified. The total number of close contacts in these high schools was 243 (200 students and 43 staff members). Of these, 242 (99.6%) contacts underwent NAT and returned negative result. There was no secondary transmission. Refer to [Figure 3](#).

**Figure 3: Cases and close contacts among staff members and students in 3 NSW high schools in Term 4**

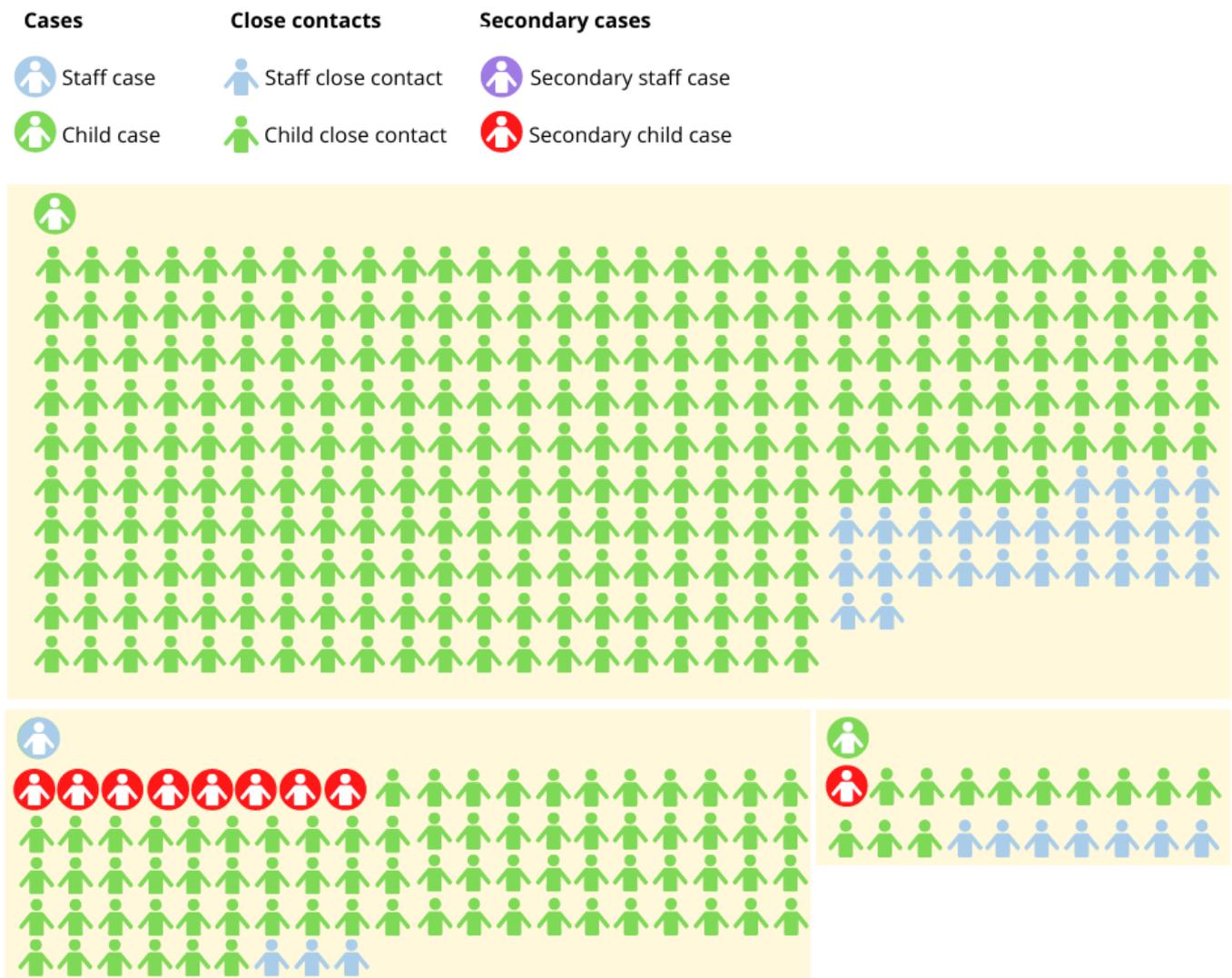


## Primary schools

A total of 3 primary COVID-19 cases (2 students and 1 staff member) were identified in 3 primary schools. The primary case in one school was identified on serology testing.

The total number of close contacts in these primary schools was 390 (354 students and 36 staff members). Of these, 384 contacts were tested: nose/throat swabs for NAT were taken from 384 (98.5%) contacts and antibody testing was performed on 9 (3%) contacts. Nine students (0.3%) returned a positive NAT result. Refer to [Figure 4](#).

**Figure 4: Cases and close contacts among staff members and students in 3 NSW primary schools in Term 4**



**Primary school outbreaks**

<u>School 1</u>	<u>School 2</u>
The primary case (staff member) acquired infection via community transmission. There were 8 secondary cases, all of them students.	The primary case (child) acquired infection via household transmission. Contact tracing and testing revealed one secondary case (child).

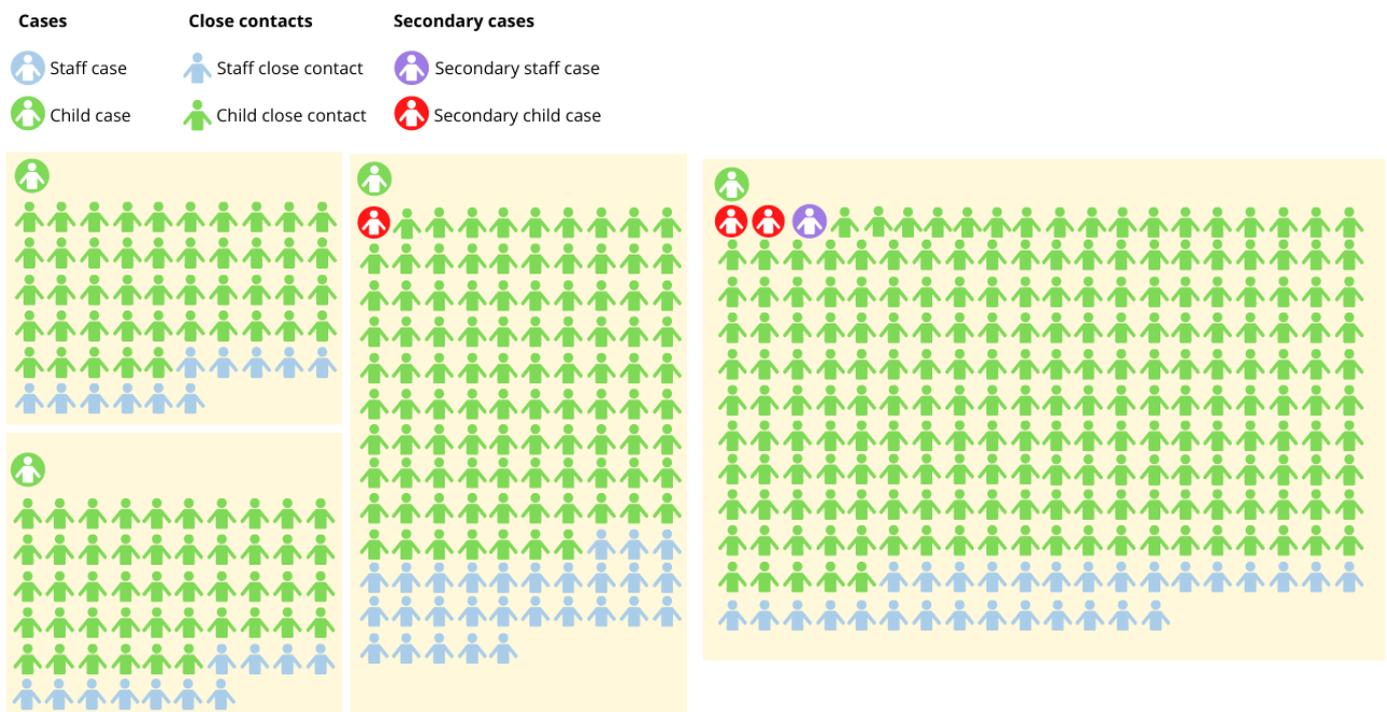
**ECEC services**

Four primary COVID-19 cases (all in children) were identified in 4 ECEC services.

The total number of close contacts was 480 (399 children and 81 staff members). Of these, 472 (98.3%) contacts were tested by nose/throat swabs.

Overall, as shown in [Figure 5](#), 4 individuals (3 children and 1 staff member) were infected following close contact with an ECEC case. An outbreak occurred in one setting.

**Figure 5: Cases and close contacts among staff and children in 4 NSW ECEC services in Term 4**



**ECEC service outbreak**

The primary case (child) acquired infection via household transmission. Contact tracing and testing revealed three secondary cases (2 children and 1 staff member).

### School holiday period

One primary COVID-19 case was identified in 1 ECEC service. The total number of close contacts of this case was 16 (11 children and 5 staff members). Of these, 16 (100%) contacts were tested by nose/throat swabs.

There were no secondary cases. Refer to [Figure 6](#).

**Figure 6: Cases and close contacts among staff and children in 1 NSW ECEC services during the school holiday period**



### Conclusion

Between 26 September 2020 and 18 December 2020, rate of infection in NSW was 7 per 100,000 population. Local community transmission was responsible for 28% of cases. Schools and ECEC services remained open with high attendance rates of 88%.

The overall secondary transmission rate was 1.2% (13/1,113) for all settings, with no transmission in high schools, 2.3% in primary schools and 0.8% in ECEC services.

As in previous terms, although SARS-CoV-2 transmission within educational settings in NSW remained low in Term 4, viral transmission can occur in close and confined spaces, with staff members having the highest risk of onward transmission. There was documented transmission within an ECEC service where the primary case was a child but because of adherence to COVID-19 safe practices, transmission was limited to 3 secondary cases. Introduction of the virus into two schools occurred through an outbreak in an indoor trampoline facility where transmission occurred during a 90-minute session among children playing in a small foam pit.

Transmission also occurred in a primary school setting from a staff member to 8 students. Transmission may have occurred within the school or on a school excursion (either on a relatively short bus trip or at a cinema). In addition, a parent who attended farewell activities at the school may have contracted COVID-19 from the staff member.

Adherence to public health mitigation strategies and a prompt public health response (consisting of early testing, contact tracing and isolating contacts) continue to be critical during periods of community transmission of SARS-CoV-2 within NSW. None of the primary cases were infected with the variant form of virus identified in the United Kingdom, South Africa or Brazil. Given these variant forms of SARS-CoV-2 are more transmissible, rates of transmission from future infections with these variants in educational settings may differ from our results and will need to be evaluated.

## Acknowledgements

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**Independent schools** – Robyn Yates

## Appendix 1

Community-based mitigation measures: physical distancing, widespread test availability, prompt contact tracing and expanded testing, quarantine; use of masks encouraged<sup>4</sup>

Mitigation measures implemented by schools from May 2020:<sup>5</sup>

- Regular hand washing/hand hygiene practices
- No parents/guardians and other visitors permitted onto school property
- Enhanced cleaning of high touch surfaces
- Limiting contact/mixing between different year groups
- Social distancing between staff
- Encourage mixing in outdoor settings, where appropriate

Additional measures implemented between 17 August 2020 and 25 September 2020<sup>6</sup>

- Limiting travel for school-based activities to within the local community or zone.
- Interschool sport and zone carnivals restricted to 100 people per venue and held within the local area.
- Not permitting group singing and or other chanting activities, as well as the use of wind instruments in group settings.
- Not permitting school social events such as formals, dances, graduation. Permitting end of school (Year 12) graduation at school without parents.

Ease of restriction from 27 September 2020<sup>1</sup>:

- Community languages school able to recommence face to face learning
- Interschool activities to recommence with COVID-19 Safety measures
- Use of reeded wind instruments, singing and chanting where the players keep a 1.5 metre distance from one another
- Use of non-reeded wind instruments where the players keep a 3 metre distance from one another.
- Graduation, Formals and school orientation permitted
- Excursion and overnight camps to recommence with COVID-19 Safety measures.

## References

1. NSW Government. School, sport and music restrictions relaxed. Available from <https://www.nsw.gov.au/news/school-sport-and-music-restrictions-relaxed>. Accessed 23 February 2021.
2. NSW Health. NSW Health open source COVID-19 notification data. 2020 [7 October 2020 – 9 October 2020]. Available from <https://data.nsw.gov.au/nsw-covid-19-data>. <https://data.nsw.gov.au/nsw-covid-19-data>. Accessed 23 February 2021.
3. Macartney K, Quinn HE, Pillsbury A, et al. Transmission of SARS-CoV-2 in Australian educational settings: a prospective cohort study. *The Lancet Child & Adolescent Health*, 2020;4:807-16.
- 4 NSW Health. Public health orders and restrictions. 2020. Available from: <https://www.health.nsw.gov.au/Infectious/covid-19/Pages/public-health-orders.aspx#gathering>. Accessed 23 February 2021.
5. NSW Education. Lessons from the COVID-19 pandemic January - July 2020. Available from: <https://education.nsw.gov.au/covid-19/lessons-from-the-covid-19-pandemic>. Accessed 23 February 2021.
6. NSW Government. Updated COVID-Safe guidelines for NSW schools. 2020 [17 August 2020 – 12 October 2020]; Available from: <https://education.nsw.gov.au/news/latest-news/updated-covid-safe-guidelines-for-nsw-schools>. Accessed 23 February 2021.