

COVID-19 in schools and early childhood education and care services – the Term 3 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 4 July 2020 and 25 September 2020 (school term 3 of the academic year).
- 39 individuals (32 students and 7 staff members) from 34 educational settings (28 schools and 6 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.
- 3,824 individuals (3,439 students [90%] and 385 [10%] staff members) were identified as close contacts of these 39 primary cases.
- 33 secondary cases (28 students and 5 staff members) occurred in 10 educational settings (5 high schools, 3 primary schools, 2 ECEC services).
- For details on Term 1 and Term 2 data, refer to NCIRS report [here](#) or view our publication in The Lancet Child and Adolescent Health [here](#).

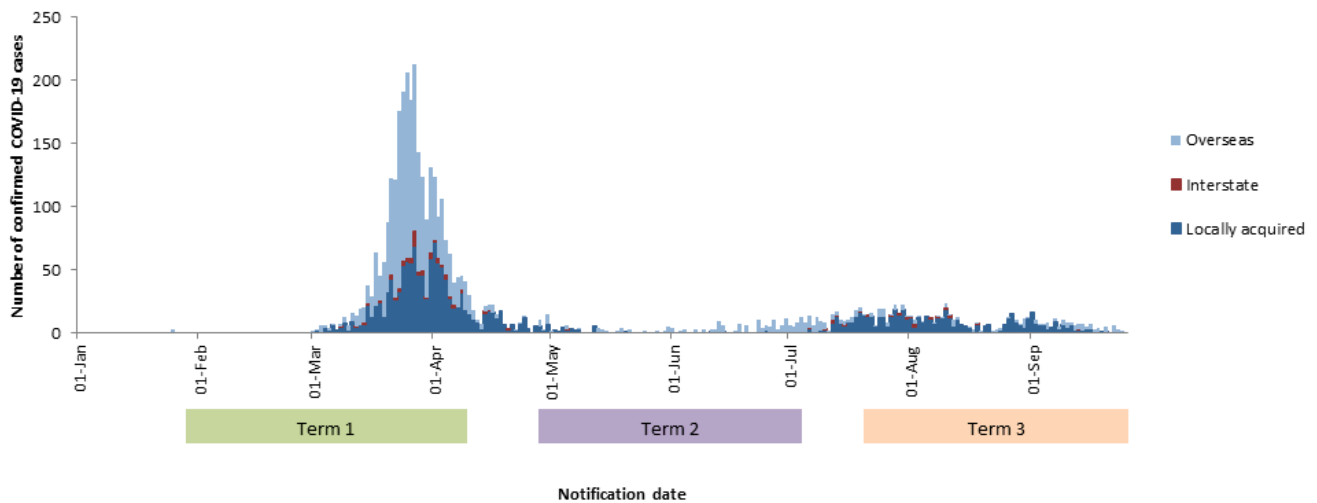
Background

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). School term 1 (28 January to 9 April 2020) coincided with the start of the COVID-19 pandemic and the first wave in NSW. During term 2 (27 April to 3 July 2020), there was minimal community transmission of COVID-19.

From 6 July 2020 just prior to Term 3 commencement, there was an increase in locally acquired COVID-19 cases in NSW, initiated by interstate travellers from the adjacent state of Victoria which was experiencing a large outbreak¹ (refer to [Figure 1](#)).

In Term 3 (4 July to 25 September 2020), there were 774 cases across NSW, with 555 cases locally acquired of which 106 (19%) were aged <18 years. Schools remained open for face-to-face learning, while implementing COVID-19 safe practices (refer to [Appendix](#)), and recorded high attendance rates (88%). ECEC services also remained open throughout the winter school holidays and all of Term 3.

Figure 1: COVID-19 cases by likely infection source and notification date, NSW 2020²



Methods

Laboratory-confirmed paediatric (aged ≤ 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](#).³

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 ≥ 2 secondary cases in a school or ECEC service.

Results

In Term 3, 34 educational settings (16 high schools, 12 primary schools and 6 ECEC services) were investigated for having a case with COVID-19 in staff member or student who attended while infectious.

There were 39 primary COVID-19 cases (32 students and 7 staff members; [Figure 2](#)), all of whom acquired infection via local transmission. The majority of cases (22 students and 3 staff members; 64%) acquired COVID-19 through household contacts, followed by community non-household contacts (6 students and 3 staff members; 23%) and five cases (13%) had no known contact source and had not travelled (4 students and 1 staff member).

Public health staff identified 3,824 close contacts of the 39 primary cases (3,439 students and 385 staff members), of whom 3,641 (95.2%) contacts were tested: nose/throat swabs for nucleic acid testing (NAT) were taken from 3,631 (95.0%) of contacts and antibody testing was performed on 278 (7.3%) contacts.

Thirty-three secondary cases (28 students and 5 staff members) occurred in 10 settings (5 high schools, 3 primary schools, 2 ECEC services), with an overall secondary attack rate of 0.9% (33/3,641). All students and staff cases had mild infection and did not require hospitalisation.

High schools

A total of 20 COVID-19 primary cases (19 students and 1 staff member) who attended 16 high schools while infectious were identified. Three schools had co-primary cases (siblings) and one school had two separate clusters (2 separate student index cases).

The total number of close contacts in these 16 high schools was 2,526 (2,291 students and 235 staff members). Of these, 2,466 (97.6%) contacts were tested: nose/throat swabs for NAT were taken from 2,460 (97.4%) of contacts and antibody testing was performed on 211 (8.4%) contacts. Of these 2,466 contacts, 27 tested positive (26 students and 1 staff member) in five schools, as shown in [Figure 3](#).

Outbreaks were identified in four high schools. The secondary attack rate in high schools was 1.1% (27/2,466).

<u>High school outbreak 1</u>	<u>High school outbreak 2</u>
The index case (first identified case) was a student whose source of infection was unknown. Contact tracing and testing revealed a further four cases in students. Of these, one tested positive on antibody testing and may have been the primary case and one was a sibling who likely acquired the infection within the household.	The index case was a student. Contact tracing and testing revealed further 14 cases (13 students and 1 staff member). One student was a previous close contact of a household member and may have been the primary case. Transmission occurred during an out of school retreat and in a school music group.
<u>High school outbreak 3</u>	<u>High school outbreak 4</u>
The primary case was a student whose source of infection is unknown. Contact tracing and testing revealed further six cases in students.	The primary case was a student who acquired infection via household transmission. There were further two cases (in siblings) identified within the school.

Primary schools

A total of 13 primary cases (11 students and 2 staff members) were identified in 12 primary schools. One school had co-primary cases (siblings).

The total number of close contacts in these primary schools was 859 (779 students and 80 staff members). Of these, 754 (87.8%) contacts were tested: nose/throat swabs for NAT were taken from 750 (87.3%) of contacts and antibody testing was performed on 64 (7.5%) contacts.

There were no outbreaks within the primary school setting. Overall, as shown in [Figure 4](#), three individuals (2 students and 1 staff member) in three schools were identified as infected following close contact with a school case. SARS-CoV-2 antibodies were not detected in any of the 64 contacts.

ECEC services

Six primary cases (2 children and 4 staff members) were identified in six ECEC services.

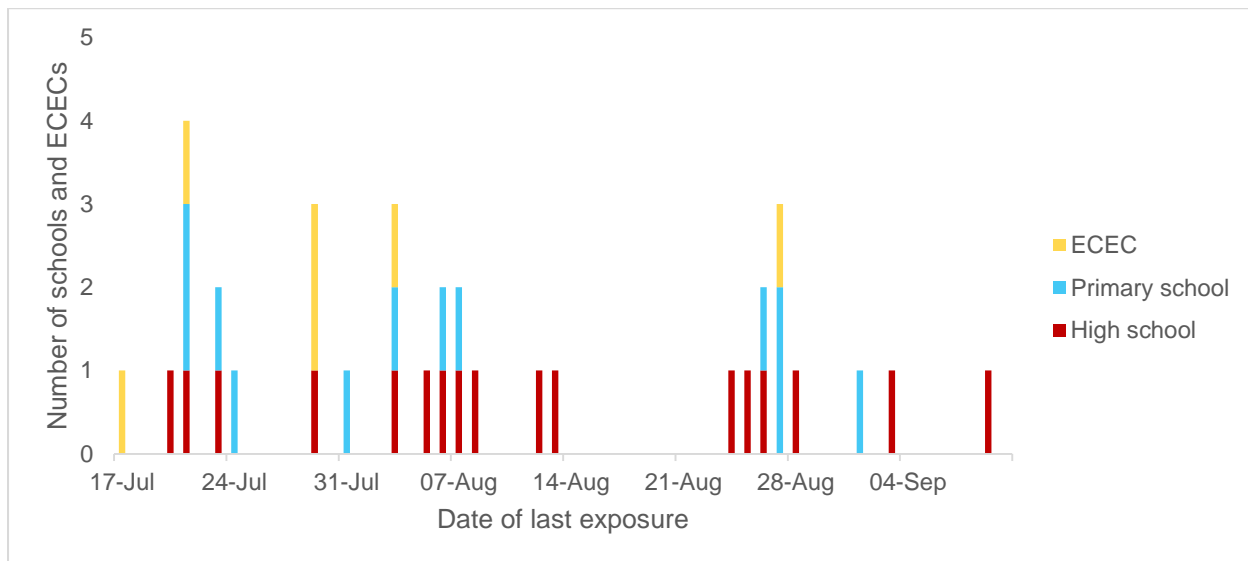
The total number of close contacts was 439 (369 children and 70 staff members). Of these, 421 (95.9%) contacts were tested: nose/throat swabs for NAT were taken from 421 (95.9%) of contacts and antibody testing was performed on 3 (0.7%) contacts.

Overall, as shown in [Figure 5](#), three individuals, all staff members, were infected following close contact with an ECEC case. An outbreak occurred in one setting.

ECEC service outbreak

The primary case (staff member) acquired infection via household transmission. Contact tracing and testing revealed two secondary cases in staff members.

Figure 2: NSW schools and ECEC services with a COVID-19 primary case(s) in Term 3*



*One high school had 2 separate unrelated primary cases.

Figure 3: Cases and close contacts among staff members and students in 16 NSW high schools in Term 3

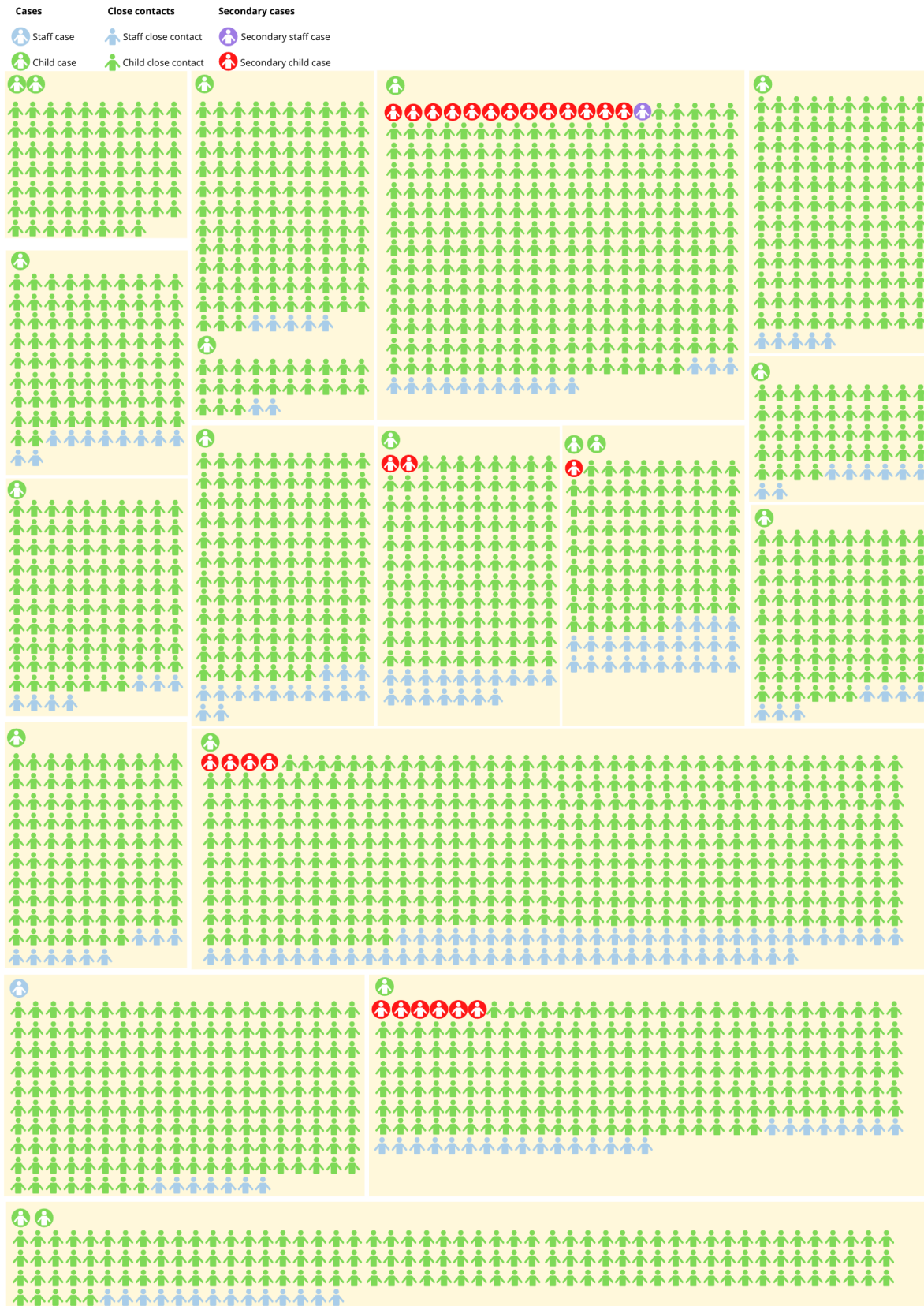
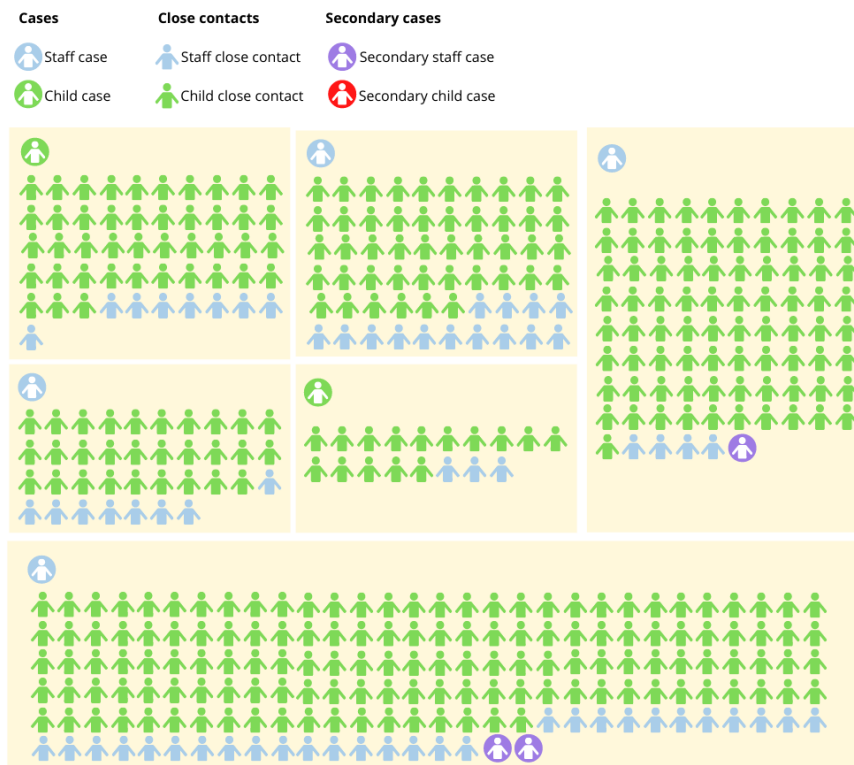


Figure 4: Cases and close contacts among staff members and students in 12 NSW primary schools in Term 3



Figure 5: Cases and close contacts among staff and children in 6 NSW ECEC services in Term 3



Excluded cases/settings

One primary school had a staff member who had a false positive nucleic acid test for SARS-CoV-2 on a throat swab. A public health response occurred (closure and cleaning of school, contact tracing and self-isolation of close contacts). All 29 close contacts (100%) underwent NAT and returned negative result.

Repeat NAT and antibody testing on the case were also negative. As a result, the staff member and all their close contacts returned to school before the end of the isolation period.

Conclusion

In July 2020, NSW experienced a rise in COVID-19 cases, stemming from imported interstate cases and several cascading chains of transmission. Between 4 July and 25 September, rate of infection in NSW was 10 per 100,000 population.² Local community transmission was responsible for the majority of cases (71%) in Term 3, compared with Term 1 (37%). Implementation of COVID-19 safe practices, including limiting parents and visitors onsite, increased cleaning and hygiene measures and other measures (refer to [Appendix](#)) continued into Term 3. Schools and ECEC services remained open with high attendance rates (88%).

The overall secondary transmission rate was 0.9% (33/3,641) for all settings: 1.1% in high schools, 0.4% in primary schools and 0.7% in ECEC services. The highest rate of transmission in primary schools and ECEC services was among adults, at 6.6%.

Three larger outbreaks occurred, all in high school settings. Factors that may have contributed to these outbreaks include attending school while symptomatic, a non-school-related overnight retreat and participation in a music group. All outbreaks were rapidly contained with NSW public health response strategy.

The likelihood of cases in educational settings is related to the level of community transmission of SARS-CoV-2. This is consistent with findings from Victoria, Australia⁴ and from international studies.⁵⁻⁷

Data from Term 3 in NSW show that even with increased rate of testing (>95%), and consistent with our previous [reports](#) and [publication](#), secondary transmission within schools and ECEC services was low. We found that the overall rate of transmission was the lowest in primary schools and there was no transmission among children in ECEC services. This is consistent with other evidence that shows younger children appear less likely than adults to transmit SARS-CoV-2.⁸⁻¹²

Closure of schools has a direct impact on learning, increasing educational disparities and exposing children to vulnerabilities at home.¹³⁻¹⁴ The key to keeping schools and ECEC services open and maintaining face-to-face learning in NSW has been compliance with COVID-19 safe practices, flexibility to implement and ease restrictions on activities (especially those that carry increased risk of transmission such as music groups, overnight stays, parent gatherings) depending on rates of infection in the community, widespread access to SARS-CoV-2 testing and a comprehensive coordinated public health strategy of contact tracing and isolation that has resulted in low rates of community transmission.

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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 encouraged¹⁵

Mitigations measures implemented by schools from May 2020:¹⁶

- 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 26 September 2020¹⁷

- 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.

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