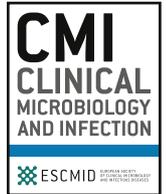




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## Letter to the Editor

## A well-controlled Covid-19 cluster in a semi-closed adolescent psychiatry inpatient facility

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## To the editor.

Children are less frequently ill due to SARS-CoV-2 compared to adults [1]. However, the role of asymptomatic children and adolescent in disease transmission is still unknown and represents a major question in time of schools reopening.

We report a pauci-symptomatic SARS-CoV-2 positive 14-years-old boy in a semi-closed child psychiatry inpatient facility. This unit welcomes 15 young people aged from 8 to 15 years old, in crisis for an average period of 6 weeks to 3 months. They are admitted for different purposes: suicidal attempt, depression, anorexia, behavior disorders, psychotic disorders.

On Day 0, the patient complained of a runny nose with no other symptoms. On day 1, SARS-CoV-2 antigenic test returned positive on a naso-pharyngeal swab a week after a contact with a SARS-CoV-2 positive and hospitalised parent. The patient could neither be sent home nor transferred to a paediatric ward for reason linked to his symptomatology. After team discussions, we decided to keep the patient in our facility and enforce strict infection prevention measures to protect both inpatients and

health-care workers (Table 1). From day 8 to day 43, a total of 14 patients were tested per protocol twice a week for SARS-CoV-2 in their nasopharynx. All remained asymptomatic. The inpatient length of stay ranged from 1-5 weeks. All patients stayed in the facility all the time once admitted. The index case was tested twice a week. He tested positive from day 1 to his discharge on day 13 and an asymptomatic 14-years-old girl was also positive from day 8 to day 29. Given the 4-12 days incubation period, we do not know whether the transmission to the secondary case occurred before or after the implementation of infection control measures. None of the 12 other patients were ever positive during the 5 weeks follow-up and none of the health-care workers declared any symptom.

Some data suggest children are less susceptible to acquire, and eventually to transmit, the virus than adults. A study in China including 105 cases and 392 household contacts showed 20.5% secondary transmission in adults (60/292) compared to 4.0% in children (4/100) [2]. A symptomatic SARS-CoV-2 positive nine-years-old child did not infect any of his 112 school contacts in 3 schools and ski class despite transmission of other viruses [3] and children are the first to develop SARS-CoV-2 symptoms in only 8% (3/39) of family clusters [4]. Other studies reported non-differential attack rates in all age categories (around 6-7%) in the follow-up of 244 patients and 1286 close contacts [5].

Managing SARS-CoV-2 paediatric risk and health-care workers protection in an objective way is complicated. We described a successful multidisciplinary management of two positive cases in a semi-closed child psychiatry inpatient facility. No further contaminations occurred after implementation of appropriate infection control measures still allowing social life for children.

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**Table 1**  
Enforced infection prevention measures implemented in the Child Psychiatry Unit. SARS-CoV-2 diagnostic tests realised in the hospitalised patients from first patient's positive test result to 10 days after last positive test

Enforced infection prevention measures implemented in the Child Psychiatry Unit													
Unit description		Infection control measures in place since day 1							Contacts still allowed after day 1				
<ul style="list-style-type: none"> <li>• Semi-closed inpatient psychiatry unit with 15 patients</li> <li>• 10 bedrooms (5 Individual and 5 double bedrooms)</li> <li>• 19 members of staff with 8 staff present in the unit during the day and 2 during the night</li> <li>• Common living, dining and play area</li> <li>• 4 toilets and 3 bathrooms</li> </ul>		<ul style="list-style-type: none"> <li>• Positive patient bedroom was individual and considered as a contaminated space</li> <li>• Health-care workers had to wear a protection gown and gloves to go into that bedroom.</li> <li>• Access to the bedroom was not granted to other children.</li> <li>• Infected patient had to wear a surgical mask at any moment outside the bedroom.</li> <li>• Infected patient had to disinfect the hands with hydroalcoholic solution before leaving the bedroom and at each time he touched his mask or his face.</li> <li>• Infected patient had an own bathroom and toilet which could not be used by other patients</li> <li>• Social distancing (1.5 meter) was required between all inpatients and with the health-care workers</li> <li>• The infected patient had non reusable cutlery and plate, which were thrown away after use in a contaminated garbage can.</li> <li>• Group activities were adapted to be preferably undertaken outside, with no shared materials</li> <li>• Each patient had a personal locker with his craft material, pencils</li> <li>• Cards play, books exchanges were not allowed but board games through connected tablets were promoted</li> <li>• Home visits were cancelled</li> </ul>							<ul style="list-style-type: none"> <li>• Meals were taken together, with the positive patient, in the kitchen with 2 meters between each other's.</li> <li>• Social activities were maintained in groups with all patients</li> <li>• The parents, one at a time, were allowed to visit their child for a few hours each day with surgical mask and hand hygiene</li> </ul>				
SARS-CoV-2 diagnostic tests realised in the hospitalised patients from first patient's positive test result to 10 days after last positive test													
	Age	Day 1	Day 8	Day 12	Day 15	Day 19	Day 22	Day 26	Day 29	Day 33	Day 36	Day 40	Day 43
1	13·8	Ag	PCR	PCR	—	—	—	—	—	—	—	—	—
2	13·8	—	neg	neg	neg	—	—	—	—	—	—	—	—
3	12·8	—	neg	neg	neg	neg	neg	neg	neg	neg	neg	neg	neg
4	14·5	—	Ag	PCR	PCR	PCR	PCR	neg	PCR	neg	neg	neg	neg
5	14·8	—	neg	neg	neg	neg	neg	—	—	—	—	—	—
6	11·3	—	neg	neg	neg	neg	neg	neg	neg	neg	neg	neg	neg
7	10·8	—	—	neg	neg	neg	neg	neg	neg	neg	neg	neg	neg
8	11·4	—	—	—	—	—	neg	neg	neg	neg	neg	neg	neg
9	13·8	—	—	—	—	neg	neg	neg	neg	—	—	—	neg
10	14·3	—	—	—	—	neg	neg	neg	neg	neg	neg	neg	neg
11	13·5	—	—	—	—	—	—	—	—	neg	neg	neg	neg
12	13·5	—	—	—	—	—	—	—	—	neg	neg	neg	neg
13	9·9	—	—	—	—	—	—	—	—	neg	neg	neg	neg
14	11·3	—	—	—	—	—	—	—	—	—	—	neg	neg

Ag = SARS-CoV-2 antigenic test positive; PCR = SARS-CoV-2 PCR test positive; neg = SARS-CoV-2 PCR test negative.

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Authors have nothing to disclose.

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### Authors' contributions

AT and PS were in charge of the infection prevention policies. MA, GL and VD were in charge of the child psychiatric unit. GD helped in the measure's implementation. AT and PR wrote the letter. All authors provided critical conceptual input and critically revised the letter.

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