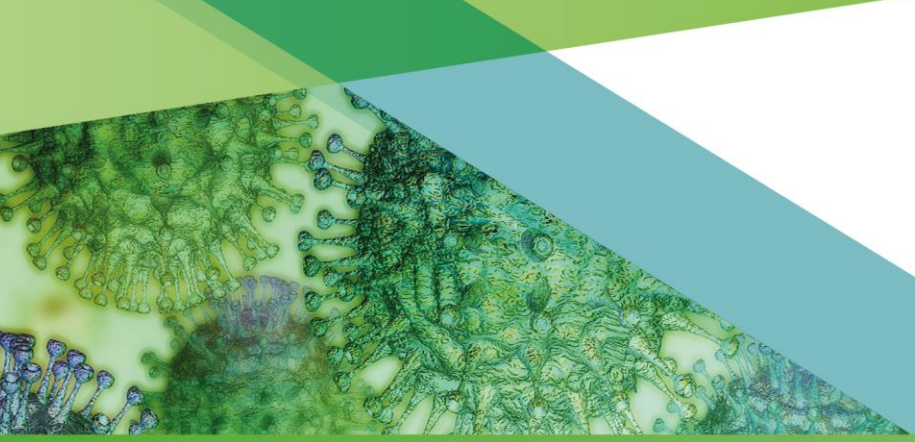

Objectives for COVID-19 testing in school settings

10 August 2020

Objectives for testing in school settings

- To ensure early identification of cases among students and staff in order to conduct contact tracing and initiate prevention and control measures, thereby reducing further transmission.
- To identify infection in students and staff at high risk of developing severe disease due to underlying conditions.
- To support investigations and studies concerning the role of children in the transmission of COVID-19.

Scope of this document

The aim of this document is to provide an overview of major aspects of testing, contact tracing, contact identification and contact follow-up in school settings within the EU/EEA countries and the United Kingdom (UK).

Target audience

The target audience for this technical report is public health experts working in school settings and public health authorities in EU/EEA countries and the UK.

Glossary

The school structures within the EU/EEA Member States and UK are heterogeneous, with children entering and moving through educational establishments at different ages [1]. Given this variation, it is not possible to define the age of attendance in EU education establishments with full consistency. Therefore, for the purposes of this document, the following classification has been used:

Schools	The generic term used to define all educational establishments within the scope of the document.
Staff	Includes teachers, administrators and management, school nurses, janitors, cleaning and kitchen personnel and other adults working in childcare and educational settings.

Background

School settings bring children and young adults of different age groups together at close quarters. They share teaching rooms, and sports and other community facilities. It has been shown that children have a higher number of social contacts than adults, which is also related to school settings [2]. Similarly, school staff have a large number of contacts with pupils as well as other staff. These contacts may result in transmission of infectious

Suggested citation: Objectives for COVID-19 testing in school settings - 10 August 2020. Stockholm: ECDC; 2020.

diseases. Many countries have closed schools and kindergartens to reduce transmission and mitigate the impact of the COVID-19 pandemic. However, even if there is increasing evidence of the low impact of COVID-19 in children [3], the overall role that children play in transmission and spread of SARS-CoV-2 remains unclear [4]. Furthermore, a recent study suggests that the viral load in children under five years with mild to moderate COVID-19 symptoms is higher than in older children and adults [5]. Although schools and educational settings do not seem to play an important role in transmission of COVID-19 in general, virus transmission by asymptomatic and pre-symptomatic children is possible. Therefore, a well-implemented testing strategy in school settings might play an important role in preventing virus transmission within the school setting and to the community.

Objective of testing in schools

The current document proposes guidelines for testing for SARS-CoV-2 in schools based on the ECDC surveillance strategy objectives for COVID-19 [4,6,7] and ECDC's publication 'COVID-19 in children and the role of school settings in COVID-19 transmission'. The following objectives could be considered relevant for testing in school settings:

- to ensure early identification of cases among students and staff in order to conduct contact tracing and initiate prevention and control measures, thereby reducing further transmission;
- to identify infection in students and staff at high risk of developing severe disease due to underlying conditions;
- to support investigations and studies concerning the role of children in the transmission of COVID-19.

A protocol for the investigation of COVID-19 transmission in schools and other educational institutions is available as part of the World Health Organization's Unity studies [8].

Testing guidance

All students and staff showing symptoms compatible with COVID-19 should be tested for SARS-CoV-2 in accordance with ECDC's testing strategy [6] and current laboratory testing guidance [9]. The symptoms include acute respiratory tract infection (sudden onset of at least one of the following: cough, fever, shortness of breath) or sudden onset of anosmia, ageusia or dysgeusia.

Contact tracing should be initiated promptly following identification of a confirmed case and should include contacts in the school (students, teachers and other staff), household and other settings as relevant, in accordance with ECDC or national guidance [10].

Asymptomatic persons identified as high-risk exposure (close) contacts of cases (Table 1) during contact tracing could be considered for SARS-CoV-2 testing. This allows for prompt isolation of new potential cases and early contact tracing of the contacts of these new cases.

If testing capacity is limited, the following groups should be prioritised for testing:

- symptomatic students and staff that are at high risk of developing severe disease due to age or pre-existing conditions (e.g. such as lung disease, cancer, heart failure, cerebrovascular disease, renal disease, liver disease, hypertension, diabetes, and immunocompromising conditions) [9];
- symptomatic students and staff in regular contact with people who are at high risk of developing severe disease due to age, living in long-term care facilities or having the aforementioned pre-existing conditions [6].

In a situation where a nasopharyngeal or other upper respiratory specimen is not acceptable and/or to increase the acceptance of children being tested, saliva could be considered as an alternative specimen [11,12].

Contact tracing

Contact tracing [10,13] is a public health measure aiming to rapidly identify people who have been in contact with a case. The purpose of identifying and managing the contacts of probable or confirmed COVID-19 cases is to rapidly identify secondary cases, which may arise after transmission from the primary known cases, in order to intervene and interrupt further onward transmission. This is achieved by:

- promptly identifying contacts of a confirmed case of COVID-19;
- providing contacts with information on self-quarantine, proper hand hygiene and respiratory etiquette measures, and advising them on what to do if they develop symptoms;
- ensuring timely laboratory testing for SARS-CoV-2 detection among all contacts with symptoms and asymptomatic high-risk exposure (close) contacts.

A contact of a COVID-19 case is any person who has had contact with a COVID-19 case within a timeframe ranging from 48 hours before the onset of symptoms of the case to 14 days after the onset of symptoms. If the case had no symptoms, a contact person is defined as someone who has had contact with the case within a timeframe ranging from 48 hours before the sample leading to confirmation was taken, and until the case was isolated, at most 14 days after the sample was taken.

The associated risk of infection depends on the level of exposure (Table 1), which will in turn determine the type of management and monitoring.

Table 1. Classification of a contact based on level of exposure [10]

High-risk exposure (close contact)	Low-risk exposure
A person: • having had face-to-face contact with a COVID-19 case within two metres for more than 15 minutes; • having had physical contact with a COVID-19 case; • having had unprotected direct contact with the infectious secretions of a COVID-19 case (e.g. being coughed on); • who was in a closed environment (e.g. household, classroom, meeting room, hospital waiting room, etc.) with a COVID-19 case for more than 15 minutes; • travelling together (less than 2 metres proximity) with a COVID-19 case in any mode of transport for more than 15 minutes.	A person: • having had face-to-face contact with a COVID-19 case within two metres for less than 15 minutes; • who was in a closed environment with a COVID-19 case for less than 15 minutes; • travelling together (less than 2 metres proximity) with a COVID-19 case in any mode of transport for less than 15 minutes.

Longer duration of contact is assumed to increase the risk of transmission; the 15-minute limit is arbitrarily selected for practical purposes. Public health authorities may consider some persons who have had a shorter duration of contact with the case as having had high-risk exposure, based on individual risk assessments.

In the context of school settings, high-risk exposure (close) contacts are defined as follows:

- Students and staff who have shared a classroom with the confirmed case and during the same time period.
- Other students and staff with whom the confirmed case has spent time, according to the definition in Table 1 ' High risk exposure' (e.g. students with whom the confirmed case have been in close proximity during breaks or sport activities, in the cafeteria, gym or school playground).
- Students and staff in boarding schools/residential schools - also those sleeping in the same room or sharing a common kitchen, social space and/or bathroom.

Low-risk exposure contacts are defined as follows:

- Other students and staff with whom the confirmed case had contact, according to the definition in Table 1 'Low-risk exposure'.
- Public health authorities may consider some children with a low-risk exposure to a case as having had high-risk exposure, based on individual risk assessments.

Public health authorities should define contacts in these circumstances in conjunction with the school authorities and ensure that any decisions are clearly translated and understood by staff, students and guardians.

Contact identification and follow up

Contact tracing should begin immediately after a confirmed case has been identified to avoid any delays in reducing transmission through public health action, regardless of whether the confirmed case is a child, teacher or other member of school staff. Contact tracing should be carried out by local public health authorities, who may need to work closely with school authorities when the contact tracing involves a school. Contacts should be managed based on their exposure category, as outlined in the ECDC guidance on contact tracing, and this includes quarantine for high-risk exposure contacts [10]. Information should be given to parents about the symptoms to look out for in children, as well as where to access testing and medical advice. If symptoms occur in contacts they should immediately be isolated and provided with medical attention and promptly tested.

Children who live in a household where someone has been confirmed as having COVID-19 should quarantine and not attend school.

- If the household case is isolated or managed in hospital, quarantine for the child should be for 14 days following his/her last exposure to the case.
- If the case is managed at home and not isolated, the 14 days of quarantine for the child should be counted from the day when all three of the following criteria are met for the case: eight days after the onset of symptoms AND resolution of fever AND clinical improvement of other symptoms for at least for three days [14].

Consulted experts (in alphabetical order)

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