Letter to the editor:

IMPLEMENTING DISTANCING IN CASE OF SCHOOL REOPENING AMID COVID-19 PANDEMIC: RECOMMENDATIONS

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Dear Editor,

Since December 2019, Coronavirus disease 2019 (COVID-19) began its journey worldwide, and compulsory changes were imposed on our daily life. Attempts to reduce the burden of this pandemic are mostly limitation measures, including imposing curfews, restricting public gatherings, limiting social interactions, imposing travel bans, and closing schools.

The rationale for closing schools was based on past experiences from Influenza, which were reported to be effective (Litvinova et al., 2019; Jackson et al., 2014). Due to the remarkable dearth of related data and uncertainty regarding the transmissibility and morbidity factors of the Severe Acute Respiratory Syndrome-Coronavirus 2 (SARS-CoV-2), school closures as a preemptive action to protect school-aged children seemed to be compelling and was thought to be likely beneficial for impeding the virus transmission chain.

School closure was first implemented across China after the new year holidays (Tian et al., 2020). On March 18, 2020, the United Nations Educational, Scientific and Cultural Organization (UNESCO) estimated that 107 countries had implemented a school closure strategy and predicted that roughly half of all students –approximately 862 million- will be affected by the COVID-19 (Viner et al., 2020). Apart from the mental health problems that were imposed on children, school closure has led to the elimination of routine programs such as free nutrition and programs, school-based vaccination programs, school nursing, etc. Such programs are to promote equity amongst marginalized communities (Armitage and Nellums, 2020).

Apart from the mentioned consequences, the effectiveness of such policy should be subjected to criticism. If we take a look at the Severe Acute Respiratory Syndrome (SARS) outbreak, the effectiveness of school closure policies is debatable. Most of the studies showed that it did not contribute to curbing the outbreak (Viner et al., 2020). In the current pandemic, several studies, mostly from mainland China reported that measures ranging from quarantine to social distancing were effective, and school closure was part of these measures (Tian et al., 2020; Lai et al., 2020). However, in the aforementioned studies, the clear impact of school closure was not identified. By contrast, a population-based analysis from the United States showed that school closure had led to a significant decline in the incidences and the consequent mortality rates (Auger et al., 2020).

On the other hand, a noticeable number of studies revealed that the COVID-19 outbreak rate is lower amongst children. The role of transmission in schools is limited, and students do not act as the disease's reservoir (Munro and Faust, 2020). Does this raise the question as to how long schools should stay closed?

Some disease transmissions within schools are inevitable. Hitherto, it was stated that the pathogenesis and the natural course of this disease are less profound amongst the pediatric population than adults and that the risk of severe illness is greatly diminished in the younger age groups unless they have other comorbidities and underlying disease (CDC, 2020). Since schools play a major role in the education and nurturing of the students, their reopening with special considerations, including better hygiene practices and social distancing measures, appears to be logical. Therefore, going back to school with elevated levels of precaution and proactive initiatives to restrict a person-to-person transmission will be the new norm, at least for the time being. Executing distancing seems to be the most challenging measure, as it may necessitate additional funds and resources. Besides, vaccine approval for adolescents is another issue, and only a few developed countries like the US have recently given green light for children to be vaccinated (CDC, 2021). Having said that, the continuation of precautionary measures such as social distancing seems to be the only tool at the disposal of policymakers and community health experts.

To find the recommendations related to guidelines on distancing in the school setting for reopening in the COVID-19 pandemic era, we conducted a focused review of 22 roadmaps or frameworks of school reopening published by other countries or the US states on November 28, 2020 [Supplementary information]. To find the mentioned papers, we had to search *via* Google, since these are government documents and there is no related paper in the name of school reopening roadmap, guideline, or framework in the databases of PubMed, Scopus, and EMBASE. Two authors extracted the recommendations independently, and the senior author resolved the differences. Then, the extracted recommendations were summarized and categorized into six subgroups, as provided in Table 1. Of note, this study was approved by the institutional board review and research ethics committee with the following numbers, respectively: 23595 and IR.SUMS.MED.REC.1399.331.

Finally, implementing distancing is of major importance in the process of school reopening to ensure students' health and safety as well as teachers and staff. We believe that our findings will shed light on the school reopening challenges, and the students can be protected if appropriately implemented.

Table 1: Recommendations on implementing distancing retrieved from school reopening roadmaps

Category	Recommendations
Minimizing direct contacts	• Providing physical guides, such as tape coloring on floors or walls, to help ensure that staffs and students remain at least six feet apart (e.g. guides for creating "one-way routes" in hallways). • Provide flow in one direction only or one direction on each side of the hallway. • Limit people's movement in incremental intervals, if feasible, to minimize the number of people in the hallways. • Schedule arrival and drop-off times or locations by cohorts • Establish separate and multiple entrances and exits to the school wherever possible. • Restrict visitors and activities involving groups or organizations.
Class grouping or cohorting	• Creating small groups and keeping them together (cohorting) to ensure that student and staff groupings are as static as possible by having the same group of children stay with the same staff (all day for young children, and as much as possible for older children). • Limit mixing between cohort groups as much as possible (during recess, lunch in the cafeteria, arrival and dismissal, etc.). • Consider allowing small groups to enter school prior to reopening to give them time to understand the new policies and protocols and practice the changes in their routines and rules. • Develop a system for cohorting and logging for the purposes of tracing if there is an interaction between different cohorts. • Ensure that cohorts are not based on any specific demographic or disability criteria. • Notify their families so that they can use the information when scheduling activities, carpooling, or other engagements outside the school. Educate students, families, and staff on the value of cohorts. Ensure they understand that other health and safety guidelines remain important to minimize the risk of infection. • If possible, have the teachers rotate instead of student groups. • Maximize other safety precaution measures where cohorts might be in contact, such as closely monitoring the use of face masks, hand wash and sanitizing between cohorts. • In the case where schools have different entrances, assign cohorts a specific entry and exit. Consider assigning designated restrooms, classrooms, and outside space where it is possible to restrict primary use to a single cohort or consistent group of cohorts.
Keeping social distance	• Schools and districts must allow for social distancing to the maximum extent possible. This can be achieved by ensuring students are seated at least 6 feet apart and considering student traffic flow around the room. Face coverings are required when social distancing is difficult or impossible, and face coverings are always required for visitors and staff unless it will inhibit the individual's health. • Turning desks to face the same direction (rather than facing each other) or having students sit on only one side of the table, spaced apart. • Avoid close group learning activities like reading circles. • Larger rooms (i.e. auditorium, cafeteria, gym) can be used as classrooms to allow for social distancing. • When feasible and appropriate (for example, in physical education classes as weather permits), it is preferable for students to gather outside rather than inside. The evidence is strong that transmission is lower in outdoor spaces because of

	increased ventilation and rapid inactivation of the virus by sunlight. Outdoor exercise and play could be beneficial for students' general physical health and for decreased risk of transmission. • Provide frequent reminders for students, teachers, and staff to stay at least 6 feet apart from one another when feasible. • Maximize space between the teacher and students due to the risk of increased droplets from teachers during instruction. If a teacher removes the face-covering mask during instruction, spacing should be increased beyond six feet. For teachers who stay seated, a physical barrier may be an effective option. • If feasible, install physical barriers, such as sneeze guards and partitions, particularly in areas where it is difficult for individuals to remain at least 6 feet apart (e.g., reception desks). • When the weather allows, windows should be opened to allow for greater air circulation.
Considerations at bus	• School districts are strongly encouraged to maintain social distancing on school buses; if it is not feasible or prohibitively burdensome or expensive to maintain physical distancing, students must wear face coverings. • Limit possible physical interaction among students, require students to board the school bus by filling the back rows first and then progressing forward. When leaving the bus, students should exit in the opposite order. Assigned seating for students may assist in ensuring that such practices are followed consistently. • The CDC recommends that school districts modify the manner students are seated on a school bus such that there is one student seated per row, skipping a row between each child. • Open windows if possible. • Keep doors and windows open when cleaning the vehicle and between trips to let the vehicles thoroughly air out. • Drivers should practice all safety actions and protocols as indicated for other staff (e.g., hand hygiene, face coverings). • Hang signs to reinforce social distancing and hygiene rules. When possible, a staff person should accompany the driver on all transportation routes to ensure safety and social distancing. • Assign seating for all passengers (if feasible). Students with medical concerns, allergies, asthma should be assigned seating at the front of the bus with windows up. • School systems should encourage families to drop students off or walk with their students to school to reduce possible virus exposure on buses. • Active forms of travel (for example, walking and cycling) and private transportation by parents and caregivers are encouraged where possible to ease pressure on transportation demand. • Students should be assigned seats, and a record of the seating plan should be kept to assist with contact tracing in the case of a student or driver contracting COVID-19.
Limit sharing belongings	• School districts must also minimize the use of shared objects. Keep each child's belongings separated from others' and in individually labelled containers, cubbies, or areas. • Indoor weight rooms and physical conditioning activities that require shared equipment need to be suspended. • Choose physical education activities that limit the use of shared equipment, and any close contact between students during those activities is limited and brief. • Develop protocols to minimize the need to have multiple students sharing high touch materials to the extent possible. These materials include but are not limited

	to books, computers, calculators, writing utensils, computer keyboards/head-phones, and art supplies.
	• Schools should arrange for additional cleaning and disinfecting of surfaces that are touched in common throughout the day. This would include objects such as door handles, common tables/desks, shared supplies such as art supplies, and high touch devices such as shared laptops or tablets.
Limit communal meal periods or at least in cohorts	• If cafeterias or other group dining areas are in use, school districts must stagger eating times or limit their cohort to ensure chances of contact and transmission are minimized.
	• Districts must suspend family-style, self-service, and buffet-style dining and maintain social distancing.
	• Consider serving meals in classrooms or outside when possible instead of group dining. Ensure that students are not sharing their food.
	• Serve individually plated meals or meals in pre-packaged boxes or bags. Use disposable food service items (e.g., utensils, dishes). If disposable items are not feasible or desirable, ensure that all non-disposable food service items are handled with gloves and washed with dishwashing soap and hot water or in a dishwasher.
	• Suspend sharing tables, microwaves and self-service buffets for food and condiments.
	• If cafeterias are used, assign seats and cohort students so that the same students sit together every day.

Conflict of interest

The authors declare no conflict of interest.

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