UGANDA NATIONAL ACADEMY OF SCIENCES

The Significance of COVID-19 Vaccination Prioritisation to the Safe Re-Opening and Management of Schools in Uganda

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Recommendation Report

By

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EXECUTIVE SUMMARY

The government of Uganda has kept schools closed since March 2020 as a measure to manage COVID-19 health risks to learners and teachers. Accordingly, schools will remain closed until teachers and learners aged 18 and above are vaccinated. However, by September 21 2021, Uganda had only managed to acquire a very limited supply of 2,152,840 doses of COVID-19 vaccine. Of the targeted priority group of 550,000 teachers, only 17.6% had been fully vaccinated. Only 4.7% of the targeted 3,348,500 elderly aged 50 years and above had been fully vaccinated in the same priority group. Moreover, only 2.1% of the 500,000 targeted people with co-morbidities had been vaccinated.[1]

The Ministry of Health is guided by a values framework for prioritising use of COVID-19 vaccines in a scenario of very limited vaccines supply, to maximise benefit and minimise risks associated with COVID-19 related challenges affecting the population health, economy, social and educational functioning.

The UNITAG: COVAX working group assessed the Ministry of Health's COVID-19 vaccines prioritisation values framework to establish its significance to schools' safe re-opening and management. The initiative also involved examining other related reports from the World Health Organization[2], the European Union[3], as well as several research papers on the subject of burden to learners during COVID-19 related schools' closure. The working group drew the following conclusions:

a. The guidelines provided by the Ministry of Health in COVID-19 vaccines prioritisation values framework are broad enough to direct interventions for safe re-opening and management of schools.
b. The low risk of severe COVID-19 cases among children under age 18 makes them a low priority group for COVID-19 vaccination, save for those with co-morbidities.
c. As more vaccines become available, enough to cover 10% to 20% of the eligible population, consideration should be made to vaccinate learners 18 years and above if evidence indicates that they are susceptible to COVID-19 severe disease. In the absence of this evidence, learners above 18 years should be vaccinated based on the precautionary principle.
d. Teachers and support staff should be vaccinated before re-opening schools to minimise COVID-19 related health burdens.
e. To guard against amplification of severe illness due to COVID-19 in communities, including parents, the targeted priority group of the elderly aged 50 years and above should be vaccinated.
f. Vaccination and adherence to protective and risk mitigation measures are complementary.

[1] Dr. Driwale Alfred. 22nd September 2021. COVID-19 Vaccination Update – NCC Meeting. Ministry of Health: Government of Uganda

[2] WHO. September 2020. Consideration for School-related public health measures in the context of COVID-19.

[3] EUR /WHO (June 20210 – Schooling during COVID-19: Recommendation from the European Technical Advisory Group for Schooling during COVID-19.

INTRODUCTION

The second upsurge of the COVID-19 pandemic in Uganda necessitated the imposition of a second lockdown, including closure of schools by the Head of State, in his address to the Nation on June 06, 2021.[4] In a follow-up address, on July 30, 2021, the Head of State emphasised that vaccination of learners was key to the re-opening of schools during the pandemic. He stated that "schools will remain closed until sufficient vaccination of the eligible population and children aged 12-18 years old, has taken place."[5] In a press release on August 16, 2021, the Ministry of Education and Sports reported that the Ministry had engaged with the Ministry of Health to align efforts to get teachers and learners above 18 years of age vaccinated (as a key condition for re-opening of schools).[6]

The link between vaccination and continuation of learners' education was not unrelated to the World Health Organization's guidance that the decisions to close, partially close, or re-open schools should be guided by a risk-based approach that aims at: preventing a new outbreak of COVID-19 in the community; maximising the educational, well-being and health benefits for students, staff, and the wider community.[7]

At the onset of the vaccination campaign in the early months of 2021, the Ministry of Health developed a values framework for prioritising the use of COVID-19 vaccines in the context of limited supplies. The objective of vaccines prioritisation was to minimise epidemiological risks, maximise health benefits, and ensure the continuation of society's economic and social functioning. Vaccines that have received the WHO's emergency validation and listing are currently in use in Uganda and have been proven to prevent progression to severe disease and death.

Therefore, it was incumbent upon the Uganda National Immunization Technical Advisory Group (UNITAG) to reflect on the significance of the link between the vaccines prioritisation framework and the safe re-opening and management of schools to provide guidance to policy makers.

[4] The President's address to the nation on COVID-19 pandemic response, 6th June 2021
[5] The President's address to the nation on COVID-19 pandemic response, 30th July 2021
[6] The Ministry of Education and Sports Press Release 16th August – No. MES/ADM/7
[7] WHO. September 2020. Coronavirus disease COVID-19

DISCUSSION

1. General Principles

The World Health Organization (WHO, 2020) set four general principles underlying the consideration for school-related public health measures to prevent and minimise COVID-19 transmission in school settings[8]:

i. Ensuring safe, adequate and appropriate educational and social learning and development of children.
ii. Minimising the risk of COVID-19 transmission within schools and school-associated settings among children, teachers and other school staff.
iii. Guarding against the potential for schools to act as amplifiers for transmission of COVID-19 within communities.
iv. Ensuring school-related public health social measures are integrated into and support the broader measures implemented at the community level.

2. Key Considerations for the necessity to vaccinate learners, teachers, and parents

Vaccination of learners and teachers should be guided by the goal of preventing severe COVID-19 and support for safe continuity of education for learners for their overall well-being, health and safety. For this purpose, the key considerations should be: epidemiological factors, limited vaccines supply and access, risk mitigation, protective measures, resource implication, feasibility, ethical considerations, and communication/community engagement.

a) Epidemiological factors (burden of disease)

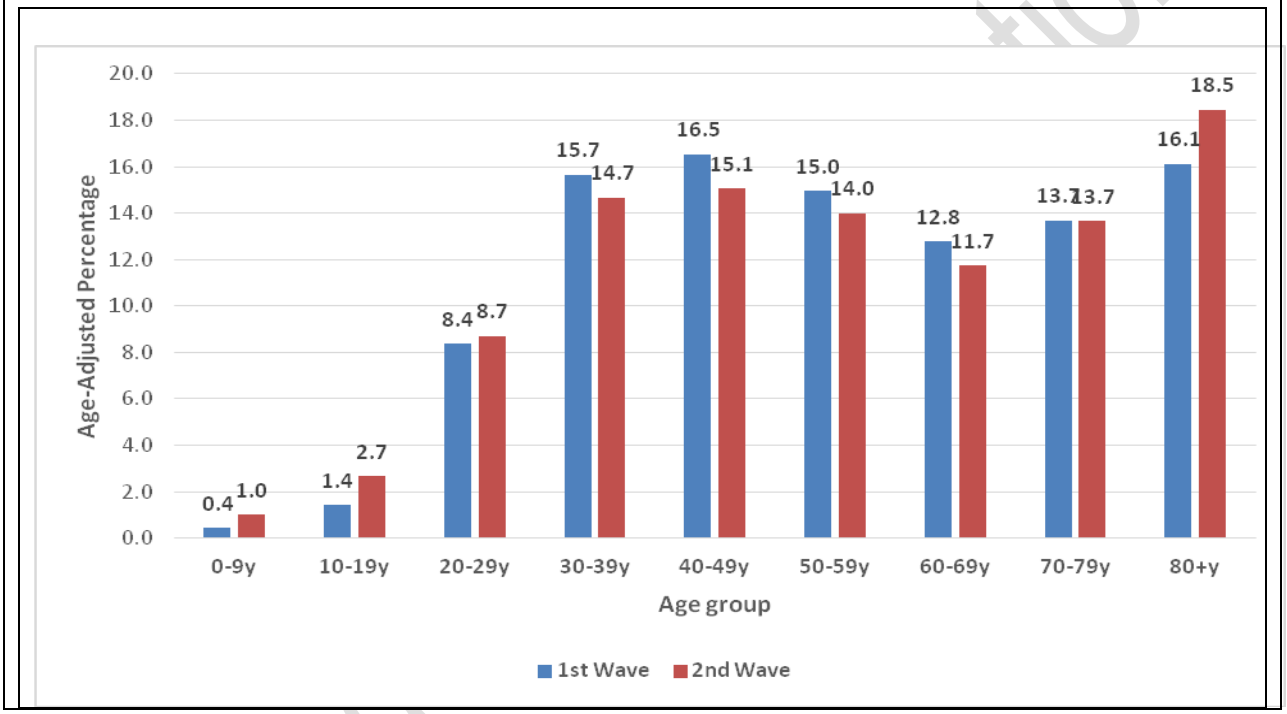
One of the ways to mitigate the burden of COVID-19 mortality and morbidity and enabling the continuation of community functioning is vaccination of the eligible populations. The Public Health strategy for COVID-19 vaccination is to reduce mortality and morbidity by preventing severe disease and death.

The World Health Organization emphasises that although new variants seem to be able to affect children, the available evidence to date suggests that children and adolescents may be less susceptible to COVID-19 and present with less severe clinical course than adults.[9] New research has also shown that vaccines can be effective in children,[10] but the risk of COVID-19 is not as significant as in adults. The Global Alliance for Vaccines and Immunisation (GAVI) recommends that in a situation of very limited vaccines supply, priority should be given to those most at high risk of death from the disease, such as the elderly, health workers, and those with co-morbidities.[11]

[8] WHO. September 2020. Consideration for School-related public health measures in the context of COVID-19.
[9] *WHO-2019-nCoV-Schools_transmission-2020.1-eng*
[10] Pfizer for children12 years to <18)
[11] GAVI - *Frequently asked questions about COVID-19 vaccines – Do kids need vaccines* - https://www.gavi.org/covid19-vaccines?gclid=EAIaIQobChMIwtbV4_7a8gIVFZzVCh2xCgMoEAAYASAAEgL6wvD_BwE, accessed 31 August 2021.

Data from the first and second waves provided by the Ministry of Health Incident Management Team in Uganda indicates that children and adolescents below age 19 were less infected by COVID-19, representing 1.8% in the first wave and 3.7% in the second wave. Yet COVID-19 cases among young adults aged between 20 to 49 were as high as 40.6% in the first wave and 38.5% in the second wave, while the elderly (50 years and above) accounted for 57.6% in the first wave and 57.8% in the second wave.[12]

Graph showing Age-adjusted Age distribution of COVID-19 cases in the first and second waves in Uganda[13].



b) Limited vaccines supply and access

The low risk of severe COVID-19 cases and death in children and the scenario of very limited vaccines supply does not make children and adolescents a high priority for vaccination, save for those with co-morbidities and respiratory complications. On the other hand, the non-availability of data on the number of mild and severe cases among the COVID-19 cases in young people aged 20 to 49 years[14] complicated the decision on whether they should be considered a priority population for vaccination.

As of October 01, 2021, Uganda was still in the vaccines supply scenario of Stage I: very limited supply, which covers 1-10% of the eligible population. Other stages are: stage II – limited supply

[12] Data collected from the Ministry of Health by Roy Mayiga *et al* for UNITA September 2021
[13] Mayega, Roy *et al*. September 2021. Presentation to UNITAG COVAX Working Group.
[14] Data availed to UNITAG on 9th September 2021

which covers 11-20%; and stage III moderate supply which covers 21-50% of the corresponding priority population. The initial focus in stage1 is to directly reduce morbidity and mortality and maintain the most critical services.[15]

As identified by the Ministry of Health in the allocation framework, the priority groups in Stage I are health care workers, security officers, teachers, persons 50 years of age and above, essential workers, and those with co-morbidities. The children and the youth are only considered for vaccination, if they fall within any of these categories.

The table below is adopted, with adjustment, from the Ministry of Health showing the COVID-19 priority groups for vaccination and updates of vaccines uptake in the scenario of very limited vaccines supply (as availed to UNITAG as of September 21 2021):

Ministry of Health COVID-19 priority groups vaccination updates availed to UNITAG as of September 21 2021

Priority groups	Target	No. Vaccinated with 1st Dose	No. Vaccinated with 2nd Dose	Proportion (1st dose)	Fully Vaccinated (2nd dose)
Health workers*	150,000	112,129	56,687	74.8%	37.8%
Security**	250,000	145,389	48,493	58.2%	19.4%
Teachers*	550,000	269,455	96,653	49.0%	17.6%
Elderly (>=50yrs)*	3,348,500	309,592	135,799	9.2%	4.1%
People with Co-morbidities*	500,000	27,698	10,347	5.5%	2.1%
Others*					

Actions for consideration:

i. Vaccinate teachers and support staff.
ii. Vaccinate 18-year-olds and above with underlying conditions.
iii. The low risk of severe COVID-19 cases among children under age 18 makes them not a high priority for COVID-19 vaccination. However, children with underlying conditions

[15] SAGE, WHO. 2020. Prioritization Roadmap for COVID-19 Vaccines; Uganda Ministry of Health, Vaccines prioritization plan.

(such as asthma, diabetes, obesity, and respiratory complication) should be vaccinated using the approved vaccines for children.

iv. As more vaccines become available (as we move to Stage II of Limited Supply), consider vaccination of learners of 18 years and below if evidence indicates that they are susceptible to COVID-19 severe disease. In the absence of this evidence, learners below 18 years should be vaccinated based on the precautionary principle which states that "if a product, an action, or a policy has a suspected risk of causing harm to the public or to the environment, protective action should be supported before there is complete scientific proof of a risk."[16]

c) Risk Mitigation (education, social, psychological, and emotional)

Several studies have linked the closure of schools, due to COVID-19, to adverse psychological and emotional effects on children. These challenges include; child labor, limited access to basic needs such as food and health care, increased exposure to physical and sexual abuse. Additionally, the absence of reproductive health services that children were provided with in schools has led to the exploitation of children and increased the number of early pregnancies and sexually transmitted diseases.[17]

As observed by WHO, prolonged school closures during COVID-19 pandemic may result in a reversal of educational gains, limiting children's educational and vocational opportunities, as well as their social and emotional interactions and development.[18] Multiple sources have reported that teenage pregnancies have drastically increased in Uganda during the COVID-19 period. Between June 2020 and June 2021, Luweero Hospital recorded 1,400 teen pregnancies raising concerns among District authorities and stakeholders about the prolonged lockdown.[19] In Kamuli District, a Health Official reported that 187 primary seven pupils got pregnant during the first COVID-19 lockdown of March 2020.[20] In Masaka District, 1064 school going children aged from 12 to 19 years old became pregnant between March 2020 to November 2020.[21]

The situation of refugee children during schools' closure is even direr. UNHCR (December 2020) reported that during the lockdown, 40 percent of the surveyed children lacked materials to engage in distance education (online). Moreover, loss of household income led to more women

[16] N. Veflen Olsen, Y, Morturjenmin, in Encyclopedia of Food Safety, 2014.
[17] *Sserwanja et al. Increased Child Abuse in Uganda amidst COVID-19 Pandemic. Journal of Pediatrics and Child Health, 57 (2021) 188-191* – see footnotes, 23&24.
[18] WHO – Checklist to support schools re-opening and preparation for COVID-19 resurgences or similar public health crises, https://www.who.int/publications/i/item/9789240017467, accessed 1st September 2021.
[19] Wandera Dan. 23 July 2021. "1400 teens conceive in Luwero in one year." Daily Monitor Newspaper: Kampala.
[20] Opio Sam. 16th March 2021. "At least 180 pupils get pregnant in lockdown-RDC." Daily Monitor Newspaper: Kampala.
[21] Katumba Wilson. 23 August 2021. "Masaka records 1000 teenage pregnancies in lockdown." Daily Monitor Newspaper: Kampala.

and girls aged 18-24 adopting risky coping mechanisms such as survival sex and sale of alcohol. Fifty-three per cent (53%) of girls and women reported an additional unpaid work burden.[22]

A study by Balikoowa *et al.* (2020) established that children were not involved in decisions regarding the COVID-19 response plans in Uganda. Their needs were hardly considered at the onset of the COVID-19 pandemic outbreak. When schools were abruptly closed, children suffered traumatic experiences, including violence, exposure to uncensored COVID-19 pandemic media broadcast and uncertainty about the continuation of their education. Moreso, children in rural areas lacked access to authentic and well-packaged information for homeschooling as programmed on radio and television stations.

The Government of Uganda devised alternative teaching methods during COVID-19 via teaching on television, radios, school WhatsApp groups, coaching by teachers, school websites, and YouTube teaching. A study by Mutenyo *at al* (2021) established that there was a significant difference in access to ICT facilities among the urban and rural schools with students in urban schools having more access compared to their counterparts in rural schools.[23] According to Bukirwa (2020), only 51.57% of learners accessed materials via radios, among whom 84.97 indicated that learning materials were not adequate.[24]

Justice also demands that special consideration be made for the health of children with disabilities, pre-existing conditions, refugees, children living in conflict areas, forcibly displaced persons and those living in poor or rural areas.[25]

Actions for consideration

Re-opening of schools should factor in the need for psycho-social and career interventions as essential protective measures. These interventions could include:

i. Repackaging all information on prevention and spread of COVID-19 so as to be inclusive and less abstract as possible.
ii. Provide guidance and counselling to learners in communities and school centres.
iii. Government should consider additional financial support to schools in deprived areas and for children living in vulnerable situations.
iv. Schools should implement additional measures to protect children in socially vulnerable situations further.

[22] UNHCR. Dec 2020. Inter-agency report: refugee women and girls in Uganda disproportionately affected by COVID-19. Kampala
[23] Mutenyo *et al* (2021), Provision and uptake of alternative learning materials in Uganda's secondary schools in periods of shocks.
[24] Bukirwa *et al* (2020), Information seeking behavior of secondary schools' students during lockdown in Uganda.
[25] EUR /WHO (June 20210 – Schooling during COVID-19: Recommendation from the European Technical Advisory Group for Schooling during COVID-19.

v. Children with pre-existing health conditions should individually be assessed for their specific risk.
vi. Protective measures should be tailored to categories of age groups of children.
vii. E-learning needs to be effectively integrated into the schools' teaching methods to enable a more inclusive learning method.
viii. Trainings for teachers and students should be enhanced to update capacity for e-Learning.
ix. Government should make internet access more available to learners.

d) Protective Measures

Protective measures relate to: 1) hand hygiene and respiratory etiquette; 2) physical distancing; 3) use of masks in schools; 4) environmental cleaning and ventilation; 5) respecting procedures for isolation of all people with symptoms. Notably, measures to control the transmission of COVID-19 in school settings should be specific to the needs of different age groups.[26]

Table showing WHO's (September 2020) Comprehensive, multi-layered measures to prevent introduction and spread of COVID-19 in educational settings[27]

Community Level	Recommended broader community level measures where schools are re-opening: i. Early detection of suspected cases, test suspect cases; identify and trace contacts; quarantine contacts ii. Investigation of clusters to implement and communicate localised measures to limit gatherings and reduce mobility iii. Physical distancing of at least 1 metre, hand and other personal hygiene practices, and age-appropriate wearing of masks when physical distancing cannot be achieved. iv. Community-led initiatives for risk reduction (e.g., addressing incorrect and misleading information, rumours and stigma) and protection/shielding of vulnerable groups and safe public transportation, including organising "walking buses" and safe cycling routes v. Other public health social measures, as appropriate.
School level	i. Administrative policies: setting attendance and entry rules; cohorting (keeping students and teachers in small groups that do not mix, also referred to as bubble, capsule, circle, safe squad); staggering the start of school, breaks, bathroom, meals and end times; alternate physical presence (e.g. alternate days, alternate shifts). ii. Infrastructure: Reorganisation of the physical space or its use, identifying entry/exists and marking the direction of walking, hand washing facilities, building environmental design clues ("nudging") to facilitate the appropriate use of space.

[26] WHO – Checklist to support schools re-opening and preparation for COVID-19 resurgences (file:///C:/Users/Hp/Downloads/9789240017467-eng%20(4).pdf).
[27] WHO. September 2020. Consideration for School-related public health measures in the context of COVID-19.

	iii.	Maintaining a clean environment: frequent cleaning of surfaces and shared objects
	iv.	Ensuring adequate and appropriate ventilation with priority for increasing fresh outdoor air by opening windows and doors, where feasible, as well as encouraging outdoor activities as appropriate
	v.	The age-appropriate use of masks where physical distancing cannot be maintained; includes ensuring the availability of masks
	vi.	Symptom screening by parents and teachers, testing and isolation of suspected cases, as per national procedures; stay-at-home when sick policies
	vii.	Reorganisation of school transportation and arrival/departure times.
	viii.	Clear accessible sharing of information and feedback mechanisms established with parents, students and teachers.
	ix.	Continuation of essential school-based services such as mental health and psycho-social support, school feeding and nutrition programmes, immunisation and other services.
Classroom level	i.	Physical distancing where appropriate.
	ii.	Wearing of masks, where recommended.
	iii.	Frequent hand hygiene.
	iv.	Respiratory etiquette.
	v.	Cleaning and disinfection.
	vi.	Adequate ventilation.
	vii.	Spacing of desks or grouping of children if required.
Individuals at risk	i.	Identification of students and teachers at high risk of severe illness – those individuals with pre-existing medical conditions; develop appropriate strategies to keep these individuals safe
	ii.	Adoption of a coordinated and integrated approach to ensure vulnerable children's holistic needs (protection, mental health and psycho-social support, rehabilitation, nutrition and other issues)
	iii.	Maintenance of physical distancing and use of medical masks
	iv.	Frequent hand hygiene and respiratory etiquette.

A study in Uganda by Nalwadda *et al.* (2020) established that majority (85%) of the students in the primary level education (age 10-13) who participated in the study in Hoima District had moderate knowledge about COVID-19 prevention measures. However, a very minimal number of students (2.2%) could correctly follow the WHO recommended six steps of handwashing and putting on or removing masks correctly.[28]

[28] Nalwadda *et al*, 2020, Children's understanding of COVID-19 and its preventive strategies in Uganda: a cross sectional study among children aged 10-13 years in Hoima District, Kampala: Makerere University.

Actions for Consideration:

i. Risk communication and training for COVID-19 preventive measures among children in primary level education should focus more on how to perform the recommended practices.
ii. Focus should be on simplified step by step communication of the procedures or more visual communication media.

e) Resource Implications

There should be a consideration of adjustments to budgetary allocations to schools (nationally and at individual schools levels) to support COVID-19 related measures and supplies (vaccination, sanitisers, masks, water, and support for counselling services) as well as other essential needs for learners.

f) Ethical Considerations: Equity (Protection of the vulnerable)

Promotion of human well-being and equity entails equitable allocations and access. This necessitates that one treat all people with equal respect and concern since all have equal dignity, rights, worth, and value.

Actions for consideration**:**

i. Treat the interests of all individuals and groups with equal consideration.
ii. Barriers to equitable access are mitigated through established allocation and prioritisation criteria at state, local and practice levels.
iii. Based on the approved equitable allocation framework, maximise benefits of vaccine by granting equal opportunity for vaccination to all individuals and across different socio-demographic groups in the population.
iv. Reduce negative societal impact due to the transmission of COVID-19 through ensuring continuity of social, economic, educational activities.

g) Community engagement

One way of ensuring that parents and the community participate in creating a safe learning environment for their children is by getting vaccinated themselves. Elderly parents or guardians age 50 and above have an opportunity to get vaccinated under the current risk population prioritisation initiatives.

CONCLUSION

In so far as the WHO-approved emergency use COVID-19 vaccines prevent progress to severe illness and death, it is necessary that adults who present a more severe clinical course than children be vaccinated for purposes of safe re-opening and management of schools. Within the context of very limited vaccines supply, this category of adults includes: teachers, support staff and parents/guardians who interact with learners. The available data indicates that the risk of COVID-19 infection in children and adolescents under twenty years of age is minimal compared to adults.

Data from the Ministry of Health indicates that during the first and second wave of COVID-19 young adults age 20 to 49 were at elevated risk of COVID-19. However, there was no data captured to establish the differences in statistics between mild and severe cases among this population category. In this case, based on the precautionary principle, learners in this age category should be vaccinated to prevent the occurrence of unknown risks. However, the prioritisation of these young adults should be considered within the second scenario of prioritising limited supplies, after covering 10% category of very limited vaccines supply.

The vaccination of parents and adults 50 years and above guarantees that severe COVID-19 illnesses and death in communities is uncommon. This situation enables not only the continuation of social economic functioning in communities, but also the continuation of education for non-boarding learner who reside in communities. However, the mitigation of the COVID-19 transmission in schools and communities is achieved mainly through protective and risk mitigation measures that include strict observance of COVID-19 standard operating procedures, not necessarily through vaccination.

RECOMMENDATION

The burdens on learners of keeping schools closed during COVID-19 pandemic outweigh the benefits. Once targeted priority groups of teachers and support staff, the elderly aged 50 years and above, and those with co-morbidities have been fully vaccinated and the recommended protective and risk mitigation measures have been duly put in place, schools can safely be opened and managed.

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