



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

In cooperation with the Pediatric Infectious Disease Society of the Philippines

Funded by the Philippine Pediatric Society

EVIDENCE SUMMARY

What preventive interventions should be used in school settings to reduce transmission of COVID-19?

Evidence Reviewers: Carolina Linda L. Tapia, MD, MPH, Gina S. Eubanas, MD, FPDS, DipCE, Ma. Lucila M. Perez, MD, MSc, FPPS, Maria Teresa S. Tolosa, MD, FPDS, DipCE; Leonila F. Dans, MD, MS

Recommendation

We recommend a multi-layer approach using multiple non-pharmacologic interventions* in school settings to limit transmission of COVID-19 in schools.

**The non-pharmacologic interventions (NPIs) are wearing of masks of students, physical distancing, engineering controls (ventilation, personal hygiene and handwashing, disinfection of surfaces), administrative controls (blended learning, phased reopening, no/reduced mixing of classes, restriction of class size, minimized or staggered breaks, symptom monitoring, self-quarantine, contact tracing, and early testing). Please see Appendix 1 for the Glossary of Non-Pharmacologic Interventions.*

Certainty of Evidence: Very low

Strength of Recommendation: Strong

Consensus Issues

The recommendation is based on 17 studies done in first-world countries during the earlier phase of the pandemic. Although the evidence was judged to be very low due to issues on indirectness and risk of bias (descriptive), the consensus panel was unanimous in deciding that the burden of the problem and the equity of the issue deserved a strong recommendation for the use of multi-layer approach coupled with multiple NPIs. The specific NPIs noted above were voted on individually by the consensus panel members and only those that reached a vote of at least 75% were included. The panel noted that these NPIs were the minimum preventive measures for schools to open considering the equity, accessibility and feasibility of the interventions.. Despite the low to moderate certainty of evidence favoring the HEPA filters and carbon dioxide monitors respectively, these NPIs did not reach consensus vote due to issues on cost and accessibility especially for public schools in more rural areas. However, the panel noted that these devices are indirect ways to ensure that there is adequate air exchange in enclosed spaces.

Key Findings

Conducted in several countries, 16 cross-sectional and 1 intervention studies on the impact of school re-opening on transmission of COVID-19 were included in this review. All countries put in place multiple-layered prevention strategies - from community to school to classroom to individual level. Multiple preventive measures were instituted in all the schools with the minimum health protocols of masking, personal hygiene and physical distancing mentioned as NPIs in only 7 studies, which were done in 4 countries (including 2 US counties). Variable combinations of NPIs were used.



Outcomes measured also varied among countries with all studies showing a decrease in transmission in terms of number of cases, transmission rates, number of outbreaks per week, number of cases per outbreak, attack rate, incidence and/or prevalence rates. Two studies found low transmission even in a setting of high community incidence. One study reported a major outbreak due to a breach in the NPI protocols.

Introduction

Nearly 2 years into the COVID-19 pandemic, schools in around 30 countries remain fully closed from February to May 2021 [5]. In the Philippines, as of January 20, 2022, schools have been closed for 61 weeks [6], with 24.9 million pre-primary to upper secondary students having missed three-fourths or almost all classroom instruction time from March 2020 to September 2021 [5]. Because several studies have shown the negative effects of limited in-person instruction on learning, mental and emotional well-being [7], ways by which schools can open safely are of paramount concern.

Although the association between the use of NPIs such as personal protective measures and physical distancing and the reduction of the incidence of COVID-19 have been suggested by systematic reviews and meta-analyses [8], there is a lack of studies investigating the impact of NPIs used in school settings on transmission of COVID-19 in schools and among students, teachers and staff. This review was done to determine the evidence for interventions that could be used for the safe opening of schools.

Review Methods

Search for existing clinical trials, systematic reviews, clinical practice guidelines (WHO, UNICEF, UNESCO, NICE, CENTRAL) and observational studies on COVID-19 databases, publications (PubMed, Google Scholar, HERDIN), pre-print databases (bioRxiv.org, medRxiv.org) and trial registries (WHO, ICTRN, EU) was done. The following keywords were used in MeSH and free text search: “school reopening”, “Return to school”, “kindergarten”, “daycare,” “pre-school”, “K-12”, “return of students,” “primary school,” “secondary school,” mitigation strategies,” “systematic reviews,” “clinical trials,” “RCT,” and COVID-19 related terms in the search strategy, without language restrictions. Hand search and cross-referencing were also done. [last search January 21, 2022]. Reference lists were reviewed for inclusion. Two reviewers independently screened titles and abstracts initially then selected and retrieved the eligible full text articles.

Included were studies that dealt with school opening or reopening among the pediatric age group in school settings, i.e. early childhood education, primary, secondary and high school or K-12 levels, and those which implemented NPIs. Excluded were studies on modeling, school closures, no NPIs mentioned nor outcomes relevant to mitigating measures. Critical appraisal using the Newcastle Ottawa Scale (NOS) was done. Subgroup analyses were planned for age and for outcomes such as viral load, adverse effects and subgroups. However, no data on these could be obtained from the studies.

Results

Characteristics of Included Studies

There were 17 studies included in this review, 16 cross-sectional studies and one (1) intervention study done in ten (10) countries in Europe, Asia, Australia, Middle East and North America (USA). Populations examined were students, teachers and staff of educational settings – early childhood education and schools (primary and secondary). Of the 17 studies, only three (3) had comparators - number of outbreaks before school closure and after re-opening [9], transmission rates among



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

children and their families who attended school and those who stayed home [10] and incidence rates of COVID-19 in school children and staff and the general population. [11]. (Appendix 3A)

The 17 studies were heterogeneous in terms of NPIs used - with masking, personal hygiene and physical distancing (ex. limited class sizes, cohorting, canceling of extra-curricular activities, distance between desks, physical barriers) common to only seven of the 17 studies. Per individual NPI, physical distancing measures were mentioned in all 17 studies, masking in 12 studies, and personal hygiene in 11 studies. (Appendix 3B, 3C) However, it was uncertain if non-mention of a specific NPI (ex. hand or personal hygiene or masking), meant that it was not being implemented. Other NPIs reported were cleaning and disinfecting, use of HEPA filters, ventilation, daily health reports and symptom monitoring, regular testing for COVID-19, contact tracing (using a proximity tracking device in one study), isolation and quarantine protocols in variable combination with other common NPIs. In England, masks are not required in classrooms and communal areas of schools except for close contacts. [12]

As the studies were done from February to December 2020, with only one study extending to January 2021 [13], vaccination was not included as a preventive measure in any of the studies. The countries covered by the studies all had surveillance, contact tracing and testing as intervention measures as national guidelines.

The studies varied in the outcomes measured – number of primary and secondary cases (n=15), transmission rate (n=12), incidence rate (n=4), number of cases per outbreak (n=2), and number of outbreaks per week, prevalence rate and attack rate in one study each.

Overall Summary of Methodological Quality of the Studies

All studies were assessed to have very low to low certainty of evidence mainly because all were descriptive studies. None of the studies compared the presence of NPIs against no NPIs. Studies also had a high risk of selection and measurement bias. Other reasons are heterogeneity in the exposure variable (NPIs) and outcomes measured, as well as indirectness. There was no measurement of the direct impact of the NPIs on transmission of COVID-19 in school settings except for three (3) studies [10,14,15] which reported the implementation of specific NPIs in the included schools. (Appendix 4B) Other studies reported instead their respective government recommendations on NPIs to use in schools. Therefore, information on the use of NPIs in these studies were obtained at the country level (not school level), whereas the outcomes were measured at the school level.

Summary of results of Included Studies

Number of Cases

From the 16 studies that measured the number of cases, the median number of cases was 68 (range 1-825 cases). The follow-up period ranged from 1.57 weeks to 30.86 weeks (median = 10.29 weeks). In a 14-week study done in New Jersey, USA [15], only 2/27 (7%) cases were due to on-campus transmission. During the 12-week study in Wisconsin, USA [11], only 7/191 (3.7%) cases among students and staff were actually linked to in-school transmission.

Transmission Rates

Two studies found low transmission of COVID-19 cases in schools despite increased community incidences - 0.7% [13], 2.0% (2/102) [14] transmission rates. Furthermore, a nationwide surveillance study of all educational settings in England [16] and study conducted in two major cities of Norway [17] found that child-to-child transmission was found to be very low at 0.5/100 000 and 0.85% (2/234), respectively.



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Secondary transmission was absent in 11 studies. [10,15,18] to very low [4,13,15,16,17,19,20,21,22] However, although the overall transmission was found to be low in Italy [20], transmission in the middle to high school was found to be non-negligible (6.64%). The utility of prompt testing was demonstrated by this study as the possible reasons given for the higher transmission in the middle to high school students were delayed testing and not all classmates of the cases were isolated immediately.

Number of Outbreaks

Two studies done in Germany [9] and England [16] assessed the number of outbreaks in schools and reported 48 and 55 outbreaks, respectively. In these studies, outbreak was defined as the occurrence of at least two cases in the same school. The number of outbreaks, however, was not significantly different from pre-closure outbreak occurrences. [9] The 48 outbreaks in Germany occurred within five months (March to Aug 2020) when the period of reopening schools coincided with relaxing of prevention measures in settings outside of the schools. Some schools were closed for the summer break within the period of the outbreak. The rates of COVID-19 infection and outbreaks were low across all educational settings but an association between outbreaks and regional incidence was found, with the risk increasing by 72% (95%CI: 28 - 130) for every 5 cases per 100 000 population increase in community incidence. [16]

Only one study in Israel [3], reported a major outbreak with high attack rates among students (13.2%) and the staff (16.6%) in one high school, ten days after school-reopening. Upon investigation, non-compliance to the NPIs (large classes, no distancing, poorly ventilated classrooms, use of air-conditioners and suspension of masking policy) was seen as contributors to the SARS-CoV-2 transmission. This resulted in the school's closure.

Prevalence Rate

The study done in Switzerland [23], found very low prevalence of COVID-19 in children at 0-0.2%.

Incidence Rates

Four studies, which were done in counties in the US - Missouri, New Jersey, Wisconsin - and England showed lower incidence rates in schools than in the community. The 2-week pilot investigation done in Missouri [14], approximated the incidence of COVID-19 in schools to be 8/100 000 persons, when the community incidence ranged from a high 711-996/100 000 persons. The study done in New Jersey [15] did twice weekly testing for 14 weeks. In a 7-day period, the incidence of COVID-19 ranged from 74-300/100,000, lower than the county incidence of 17-402/100 000 persons. In Wisconsin [11], the study showed that the incidence rate in schools was 37% lower than that in the community for a period of nearly 13 weeks. Weekly COVID-19 incidence was 72-699 cases per 100,000 students and staff versus 34-1,189 per 100,000 persons in the community. The England [16] survey, done in 7 weeks, showed that staff had higher incidence than students, 27 cases/100 000 per day compared with 18 cases in early years students, 6.0 cases in primary schools students, and 6.8 cases in secondary school students.

Other Considerations (Evidence to Decision)

There were no studies that reported cost of resources, i.e. NPIs used, including surveillance and screening. One study [15] adopted biweekly screening and the use of proximity tracing devices to monitor strict adherence to physical distancing rules. It commented that these additional measures may not be as feasible in other settings. No studies provided evidence of acceptability of NPIs to the students, teachers and staff. Only one study investigated non-compliance by the school with NPIs after an outbreak. [3].



The WHO, UNICEF, UNESCO and World Bank developed checklists and essential actions for reopening schools and possible resurgences and recommended that the interventions used should be based on the countries' analysis of context-specific risks and benefits, financial capacity and logistics and implemented in all levels, national, subnational and school levels. [24,25,26]

Recommendations from Other Groups

Table 1. Summary of recommendations from other groups

<p>CDC (updated Feb 7, 2022) [33]</p>	<ul style="list-style-type: none"> • The use of multiple prevention strategies, including indoor face masking, is emphasized, regardless of vaccination status. • Forgo quarantine for those with completed vaccine series (even without boosters) to minimize disruption of in-person learning.
<p>WHO [24]</p>	<ul style="list-style-type: none"> • Plans to reopen schools should be based on assessments and analyses of context-specific risks and benefits and should be for the best interests of the students and public health considerations. • Checklist has 38 essential actions for reopening and potential resurgences, 15 should be implemented at school level reopening. (See Appendix 8 : Glossary of NPIs)
<p>UNICEF [25]</p>	<ul style="list-style-type: none"> • Six key dimensions used to assess the state of readiness of identified schools for reopening: policy, financing, safe operations, learning, reaching the most marginalized and wellbeing/protection.
<p>UNESCO – World Bank Framework [26]</p>	<ul style="list-style-type: none"> • Implement context-appropriate health and hygiene protocols based on capacity and resources, to consider cost implications and include symptom screening, handwashing, use of protective equipment and cleaning procedures for facilities.
<p>UK [32]</p>	<ul style="list-style-type: none"> • None mentioned on preparing for school reopening. • Does NOT recommend wearing of masks or face covering in classrooms and communal areas of school, except for close contacts. • Daily testing of close contacts for 5-7 days or until tested positive.
<p>AUSTRALIA [27]</p>	<ul style="list-style-type: none"> • Schools should open and remain open whenever possible. • Multiple interventions can reduce the likelihood of infection in school. • When there is increased community transmission, screen students and teachers before attendance.
<p>DOH [28-30]</p>	<ul style="list-style-type: none"> • DepEd-DOH JMC No. 01 adopts the UNESCO-UNICEF-World Bank Framework for Reopening Schools and DepEd Shared Responsibility Principle. • Schools to set up physical structures, wash facilities and supplies, health and safety protocol, and adjusted class programs.



PSMID- Philippine Adult Living Clinical Practice Guidelines [31]	<p>Recommend against use of: ionizing air filters, UV lamps, foot baths and misting tents, face shields in addition to face masks in non-health settings. (Low to very low QoE; Strong Recommendation)</p> <p>Recommends use of the following: Well-fitted cloth mask or medical mask in the community setting, preferably ≥ 2 layers of cloth mask. (Very low CoE, Strong) HEPA filter in indoor spaces with inadequate ventilation. (Low CoE, Conditional) Face shields by the general public in areas with sustained community transmission. (Very low CoE, strong recommendation) Protective physical barriers in areas where physical distancing cannot be adhered to. Very low CoE, Conditional) Cleaning and disinfection surfaces ≥ 3x a day, especially high touch high traffic areas. (Very low CoE, strong recommendation) Carbon dioxide (CO₂) monitors in enclosed space to guide actions to improve ventilation. (Moderate CoE, strong recommendation)</p>
---	---

* Details of the recommendations above can be seen in Appendix 7 with corresponding links to the actual documents.

Research Gaps

There are no reported ongoing or registered clinical trials on the adoption of NPIs in preventing COVID-19 in schoolchildren. There is a protocol of a systematic review published by Lopez-Junior, et al on school reopening and the risks accelerating the COVID-19 pandemic, which will include school children of all educational levels.

Issues to be addressed by future studies are: 1) direct impact of use of the NPIs by the schools on COVID-19 transmission rates in schools; 2) adherence of schools to the NPIs; 3) comparison of specific NPIs, on top of the minimum health protocols, in reducing transmission; 4) comparison of attack rates in schools that are open during low community transmission periods versus high community transmission periods and 5) effect of NPIs in transmission in schools, considering the vaccination rates in children and adolescents



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

In cooperation with the Pediatric Infectious Disease Society of the Philippines

Funded by the Philippine Pediatric Society

References

- [1] WHO. Considerations for school-related public health measures in the context of COVID-19. annex to considerations in adjusting public health and social measures in the context of COVID-19. [Internet]. 14 September 2020 [cited 2022 Jan 22]. Available from <https://www.who.int/publications/i/item/considerations-for-school-related-public-health-measures-in-the-context-of-covid-19>
- [2] Yoon Y, Kim KR, Park H, Kim S, Kim YJ. Stepwise School Opening and an Impact on the Epidemiology of COVID-19 in the Children. *J Korean Med Sci* [Internet]. 2020 Nov [cited 2022 Jan];30:35(46):e414. Available from: doi: 10.3346/jkms.2020.35.e414. PMID: 33258334; PMCID: PMC7707922.
- [3] Stein-Zamir C, Abramson N, Shoob H, Libal E, Bitan M, Cardash T, et al. A large COVID-19 outbreak in a high school 10 days after schools' reopening, Israel, May 2020. *Euro Surveill* [Internet]. 2020 Jul [cited 2022 Jan];25(29):2001352. Available from: doi:10.2807/1560-7917.ES.2020.25.29.2001352. PMID: 32720636; PMCID: PMC7384285.
- [4] UNESCO. Education disrupted: the second year of the COVID-19 pandemic and school closures [Internet]. 2021 September [cited 2022 January 20]. Available from <https://data.unicef.org/resources/education-disrupted/>
- [5] UNESCO. COVID-19 impact on education as of Jan 20, 2022 [Internet]. 2022 January 20 [cited 2022 January 20]. Available from: <https://en.unesco.org/covid19/educationresponse>
- [6] Centers for Disease Control and Prevention. Transmission of SARS-CoV-2 in K-12 schools [Internet]. 2021 December 17 [cited 2022 January 21]. Available from https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/transmission_k_12_schools.html
- [7] Talic S, Shah S, Wild H, Gasevic D, Maharaj A, Ademi Z, et al. Effectiveness of public health measures in reducing the incidence of covid-19, SARS-CoV-2 transmission, and covid-19 mortality: systematic review and meta-analysis. *BMJ* [Internet]. 2021 Nov 17 [cited 2022 Jan];375:e068302. Available from: doi: 10.1136/bmj-2021-068302. Erratum in: *BMJ*. 2021 Dec 3;375:n2997. PMID: 34789505.)
- [8] Kampe EOI, Lehfeld A-S, Buda S, Buchholz U, Haas W. Surveillance of COVID-19 school outbreaks, Germany, March to August 2020. *Euro Surveill* [Internet]. 2020 [cited 2022 Jan]; 25: 2001645. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7533620/>
- [9] Kriger, O., Lustig, Y., Cohen, C., Amit, S., Biber, A., Barkai, G., et al. The Sheba Medical Center healthcare workers' children's school: can we open schools safely? *Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases* [Internet]. 2020 Dec [cited 2022 Jan]; 27(3), 474.e1–474.e3. Available from <https://doi.org/10.1016/j.cmi.2020.11.030>
- [10] Falk A, Benda A, Falk P, Steffen S, Wallace Z, Høeg TB. COVID-19 Cases and Transmission in 17 K–12 Schools — Wood County, Wisconsin, August 31–November 29, 2020. *MMWR Morb Mortal Wkly Rep* 2021;70:136–140. [cited 2022 March 10]. Available from DOI: <http://dx.doi.org/10.15585/mmwr.mm7004e3>
- [11] Gov.UK [Internet]. What parents and carers need to know about early years providers, schools and colleges during COVID-19. England: Department of Education; Updated 20 January 2022 [cited 25 January 2022]. Available from <https://www.gov.uk/government/publications/what-parents-and-carers-need-to-know-about-early-years-providers-schools-and-colleges-during-the-coronavirus-covid-19-outbreak?priority-taxonomy=774cee22-d896-44c1-a611-e3109c8eae>
- [12] Hershov RB, Wu K, Lewis NM, et al. Low SARS-CoV-2 Transmission in Elementary Schools — Salt Lake County, Utah, December 3, 2020–January 31, 2021. *MMWR Morb Mortal Wkly Rep*



- 2021;70:442–448. [cited 2022 Jan 30]. Available from DOI: <http://dx.doi.org/10.15585/mmwr.mm7012e3>
- [13] Dawson P, Worrell MC, Malone S, et al. Pilot Investigation of SARS-CoV-2 Secondary Transmission in Kindergarten Through Grade 12 Schools Implementing Mitigation Strategies – St. Louis County and City of Springfield, Missouri, December 2020. *MMWR Morb Mortal Wkly Rep* 2021;70(12): 449-455. doi:10.15585/mmwr.mm7012e4
- [14] Volpp KG, Kraut BH, Ghosh S, et al. Minimal SARS-CoV-2 Transmission After Implementation of a Comprehensive Mitigation Strategy at a School – New Jersey, August 20–November 27, 2020. *MMWR Morb Mortal Wkly Rep* 2021;70(11): 377-381. doi:10.15585/mmwr.mm7011a2
- [15] Ismail SA, Saliba V, Lopez Bernal J, Ramsay ME, Ladhani SN. SARS-CoV-2 infection and transmission in educational settings: a prospective, cross-sectional analysis of infection clusters and outbreaks in England. *Lancet Infect Dis*. 2021 Mar;21(3):344-353. doi: 10.1016/S1473-3099(20)30882-3. Epub 2020 Dec 8. PMID: 33306981; PMCID: PMC7833602.
- [16] Brandal LT, Ofitserova TS, Meijerink H, et al. Minimal transmission of SARS-CoV-2 from paediatric COVID-19 cases in primary schools, Norway, August to November 2020. *Euro Surveill* 2021;26(1). doi:10.2807/1560-7917.Es.2020.26.1.2002011
- [17] Yung, C. F., Kam, K. Q., Nadua, K. D., Chong, C. Y., Tan, N., Li, J., et al. Novel Coronavirus 2019 Transmission Risk in Educational Settings. *Clinical Infectious Diseases* [Internet]. 2021 Mar 15 [cited 2022 Jan]; 72(6), 1055–1058. Available from <https://doi.org/10.1093/cid/ciaa794>
- [18] Ehrhardt J, Ekinci A, Krehl H, Meincke M, Finci I, Klein J, et al. Transmission of SARS-CoV-2 in children aged 0 to 19 years in childcare facilities and schools after their reopening in May 2020, Baden-Wuerttemberg, Germany. *Euro Surveill* [Internet]. 2020 Sep 10 [cited 2022 Jan]; 25(36):pii=2001587. Available from: DOI: [10.2807/1560-7917.ES.2020.25.36.2001587](https://doi.org/10.2807/1560-7917.ES.2020.25.36.2001587)
- [19] Larosa E, Djuric O, Cassinadri M, Cilloni S, Bisaccia E, Vicentini M, et al. Secondary transmission of COVID-19 in preschool and school settings in northern Italy after their reopening in September 2020: A population-based study. *Euro Surveill* [Internet]. 2020 Dec 10 [cited 2022 Jan]; 25: 2001911. Available from <https://doi.org/10.2807/1560-7917.ES.2020.25.49.2001911>
- [20] Macartney K, Quinn E, Pillsbury A, Mphil A, Koraila A and Deng L. Transmission of SARS-CoV-2 in Australian educational settings: a prospective cohort study. *The Lancet* [Internet]. 2020 Nov 01 [cited 2022 Jan]; 4(11), 807-816. Available from [https://doi.org/10.1016/S2352-4642\(20\)30251-0](https://doi.org/10.1016/S2352-4642(20)30251-0)
- [21] National Center for Immunization Research and Surveillance 2020 Reports. [Internet]. 2020 [cited 2022 Jan]. Available from: https://ncirs.org.au/sites/default/files/2020-08/COVID-19%20Transmission%20in%20educational%20settings%20in%20NSW%20Term%20%20report_0.pdf 2020.
- [22] Kriemler, S., Ulyte, A., Ammann, P., Peralta, G. P., Berger, C., Puhan, M. A., et al. Surveillance of Acute SARS-CoV-2 Infections in School Children and Point-Prevalence During a Time of High Community Transmission in Switzerland. *Frontiers in Pediatrics* [Internet]. 2021 Mar 01 [cited 2022 Jan]; 9, 645577. Available from <https://doi.org/10.3389/fped.2021.645577>
- [23] World Health Organization. Checklist to support School re-opening and preparation for COVID-19 resurgence or similar public health crises. Geneva. 2020. License: CC BY-NC-SA 3.0 IGO. ISBN 978-92-4-001746-7 (electronic version)
- [24] UNICEF, UNESCO, World Bank. Framework to reopening schools. France. June 2020. <https://unesdoc.unesco.org/ark:/48223/pf0000373348>
- [25] UNESCO, UNCF, World Bank. Supplement to Framework for reopening schools: Emerging lessons from country experiences in managing the process of reopening schools. France. Sept 2020. <https://unesdoc.unesco.org/ark:/48223/pf0000373348>
- [26] Australian Health Protection Principal Committee (AHPPC) on COVID-19, schools and early childhood care. Australian Department of Health. Published 15 Nov 2021. [cited 25 January 2022] Available from : <https://www.health.gov.au/news/australian-health-protection-principal-committee-ahppc-statement-on-covid-19-schools-and-early-childhood-education-and-care> [Accessed 25 January 2022]
- [27] Department of Education, Department of Health. Operational Guidelines on the Implementation of Limited Face-to-face Learning Modality. Joint Memorandum Circular No. 01, s.2021. Manila. Published 27 September 2021. pp. 27.



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

- [28] Department of Education. Preparations for the implementation of the Expanded Phase of Face-to-face Classes. DepEd Memorandum No. 085, s. 2021. Manila. Published 09 December 2021. pp. 3.
- [29] DOH.gov.ph. [Internet]. Manila: Department of Health; DOH issues guidelines on expanded COVID-19 testing. Published June 11, 2020. [cited 29 January 2022] Available from : <https://doh.gov.ph/press-release/DOH-ISSUES-GUIDELINES-ON-EXPANDED-COVID-19-TESTING>
- [30] Philippine Society of Microbiology and Infectious Diseases [Internet], Manila. Philippine COVID-19 Living Recommendations. Updated January 10, 2022. [cited February 3, 2022] Available from: <https://www.psmid.or/philippine-covid-19-living-recommendations/>
- [31] Gov.UK. [Internet] Schools COVID-19 operational guidance. England: Department of Education; Published January 2022. pp 18. (Accessed 25 January 2022). Available from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1050624/Schools_COVID-19_operational_guidance_Jan_2022.pdf
- [32] Centers for Disease Control and Prevention. Schools, Child Care and Colleges: Guidance for COVID-19 Prevention. [Internet]. 2022 February 7 [cited 2022 February 14]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/index.html#:~:text=CDC%20recommends%20universal%20indoor%20masking,layered%20prevention%20strategies%20in%20place.>
- [33] Herzog, R., Álvarez-Pasquin, M.J., Díaz, C. et al. Are healthcare workers' intentions to vaccinate related to their knowledge, beliefs and attitudes? a systematic review. BMC Public Health 13, 154 (2013). <https://doi.org/10.1186/1471-2458-13-154>



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

In cooperation with the Pediatric Infectious Disease Society of the Philippines

Funded by the Philippine Pediatric Society

Appendix 1. Glossary of Non-pharmacologic Interventions

Non-pharmacologic interventions (NPIs) for COVID-19, as distinguished from vaccination and treatment, are public health interventions that help prevent the transmission and control the spread of the virus.

The multi-layered approach as recommended by WHO, refers to implementation of prevention measures at different levels – community, school, classroom and individual at high-risk levels. The measures per level are described in the table below:

Community level	<p>Recommended broader community level measures in communities where schools are reopening: ³</p> <ul style="list-style-type: none"> • Early detection of suspected cases, test suspect cases; identify and trace contacts; quarantine contacts • Investigation of clusters to implement and communicate localized measures to limit gatherings and reduce mobility • Physical distancing of at least 1 metre, hand and other personal hygiene practices and age-appropriate wearing of masks when physical distancing cannot be achieved⁹ • 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 organizing “walking buses” and safe cycling routes • Other PHSM, as appropriate.
School level	<ul style="list-style-type: none"> • 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, meal and end times; alternate physical presence (e.g. alternate days, alternate shifts) • Infrastructure: Reorganization of the physical space or its use, identifying entry/exits and marking direction of walking, handwashing facilities, building environmental design clues (“nudging”) to facilitate appropriate use of space • Maintaining clean environment: frequent cleaning of surfaces and shared objects • 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 • The age-appropriate use of masks where physical distancing cannot be maintained; this includes ensuring the availability of masks • Symptom screening by parents and teachers, testing and isolation of suspected cases, as per national procedures; stay-at-home when sick policies • Reorganization of school transportation and arrival/departure times • Clear accessible sharing of information, and feedback mechanisms established with parents, students and teachers • Continuation of essential school-based services such as mental health and psychosocial support, school feeding and nutrition programmes, immunization and other services.
Classroom level	<ul style="list-style-type: none"> • Physical distancing where appropriate • Wearing of masks, where recommended • Frequent hand hygiene • Respiratory etiquette • Cleaning and disinfection • Adequate ventilation • Spacing of desks or grouping of children if required.
Individuals at high-risk	<ul style="list-style-type: none"> • 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 • Adoption of a coordinated and integrated approach to ensure vulnerable children’s holistic needs (protection, mental health and psychosocial support, rehabilitation, nutrition and other issues) • Maintenance of physical distancing and use of medical masks • Frequent hand hygiene and respiratory etiquette.



Physical distancing

At school and between groups

- Administrative measures to keep groups apart:
 - o Cohorting - no or reduced mixing of classes ^{2,3}
 - o Phased reopening - - school re-opening is done on a staggered schedule, with different grade levels going back to school at different dates, more commonly re-opening earlier for higher grade levels ex. started with graduating classes only of secondary schools, then grad classes of primary schools before all classes. ⁴⁻⁶
 - o Staggering of schedules of classes and breaks - includes breaktime/recess is scheduled at different times for different grade levels ^{3, 7}
 - o Hybrid learning - educational approach where the online components are intended to replace a portion of face-to-face class time. Instructors and facilitators teach remote and in-person learners at the same time using technology like video conferencing. ^{8,9}
 - o Blended learning – Educational strategy where face-to-face class sessions are accompanied by online materials and activities--essentially a “blend” of both live and online learning. A fundamental component is that these online materials are not intended to “replace” face-to-face class time; rather, they are meant to supplement and build upon the content discussed in the classroom. ⁹
 - o Limiting class sizes – classes in the study of Krieger limited students to 10/class and Falk’s study 11-20 students, without reference to the regular (normal) class sizes. ^{2,8}
 - o Limit mixing of classes and after-school activities - only students from 1 grade level and mixing of students from different grade levels is avoided as much of possible by measures such as suspension of extra-curricular activities, sports and having staggered mealtimes. ^{2,3}
 - o Suspension of extra-curricular activities,
 - o Crowd control during drop-off and pick-up periods,
 - o Identification of entry and exit points, marked directions for walking

Individual physical distancing¹

- Maintaining a distance of at least 1 meter between all individuals, outside and inside the classroom

Masking ¹

- Risk-based approach to required use of mask: based on age and where physical distancing is not feasible

Ventilation¹

- Either natural ventilation by opening windows or use of air-conditioning systems coupled with regular inspection, maintenance (especially of filters) and cleaning

Hygiene¹

- Personal hygiene: frequent hand hygiene, respiratory etiquette, use of mask
- Regular cleaning of school environment with water and soap/detergent and disinfectant, including frequently touched surfaces
- Respiratory and hand hygiene and physical distancing measures in transportation, e.g school buses



Screening and management of sick students, teachers and staff¹

- “Stay at home if unwell” policy
- Daily symptom screening/monitoring
- Quarantine of contacts
- Notification of public health authorities in case of positive COVID-19
- Contact tracing (use of clear protocols to notify, interview, and advise close contacts to patients with confirmed or probable COVID-19.
- Early testing to identify current infections with clinical manifestations of COVID-19, or asymptomatic with recent close exposure to SARA-CoV-2

Reference:

1. WHO. Considerations for school-related public health measures in the context of COVID-19. annex to considerations in adjusting public health and social measures in the context of COVID-19. [Internet]. 14 September 2020 [cited 2022 Jan 22]. Available from <https://www.who.int/publications/i/item/considerations-for-school-related-public-health-measures-in-the-context-of-covid-19>
2. Falk A, Benda A, Falk P, Steffen S, Wallace Z, Høeg TB. COVID-19 Cases and Transmission in 17 K–12 Schools — Wood County, Wisconsin, August 31–November 29, 2020. *MMWR Morb Mortal Wkly Rep* 2021;70:136–140. [cited 2022 March 10]. Available from DOI: <http://dx.doi.org/10.15585/mmwr.mm7004e3>
3. Yung, C. F., Kam, K. Q., Nadua, K. D., Chong, C. Y., Tan, N., Li, J., et al. Novel Coronavirus 2019 Transmission Risk in Educational Settings. *Clinical Infectious Diseases* [Internet]. 2021 Mar 15 [cited 2022 Jan]; 72(6), 1055–1058. Available from <https://doi.org/10.1093/cid/ciaa794>
4. Kampe EOI, Leheld A-S, Buda S, Buchholz U, Haas W. Surveillance of COVID-19 school outbreaks, Germany, March to August 2020. *Euro Surveill* [Internet]. 2020 [cited 2022 Jan]; 25: 2001645. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7533620/>
5. Yoon Y, Kim KR, Park H, Kim S, Kim YJ. Stepwise School Opening and an Impact on the Epidemiology of COVID-19 in the Children. *J Korean Med Sci* [Internet]. 2020 Nov [cited 2022 Jan];30;35(46):e414. Available from: doi: 10.3346/jkms.2020.35.e414. PMID: 33258334; PMCID: PMC7707922.
6. Ehrhardt J, Ekinici A, Krehl H, Meincke M, Finci I, Klein J, et al. Transmission of SARS-CoV-2 in children aged 0 to 19 years in childcare facilities and schools after their reopening in May 2020, Baden-Wuerttemberg, Germany. *Euro Surveill* [Internet]. 2020 Sep 10 [cited 2022 Jan]; 25(36):pii=2001587. Available from: DOI: [10.2807/1560-7917.ES.2020.25.36.2001587](https://doi.org/10.2807/1560-7917.ES.2020.25.36.2001587)
7. Hershov RB, Wu K, Lewis NM, et al. Low SARS-CoV-2 Transmission in Elementary Schools — Salt Lake County, Utah, December 3, 2020–January 31, 2021. *MMWR Morb Mortal Wkly Rep* 2021;70:442–448. [cited 2022 Jan 30]. Available from DOI: <http://dx.doi.org/10.15585/mmwr.mm7012e3>
8. Steele C. Hybrid vs Blended Learning: the difference and why it matters. April 16, 2022. Available from <https://www.leadinglearning.com/hybrid-vs-blended-learning/>
9. Siegelman A. Blended, Hybrid and Flipped Courses: What is the difference? Center for Advancement of Teaching. Available from: <https://teaching.temple.edu/edvice-exchange/2019/11/blended-hybrid-and-flipped-courses-what%E2%80%99s-difference>



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

In cooperation with the Pediatric Infectious Disease Society of the Philippines

Funded by the Philippine Pediatric Society

Appendix 2. Search Yield and Results

Search number	Query	Sort By	Filters	Search Details	Results	Time
5	#1 AND #2 AND #3		Systematic Review	(("Schools"[MeSH Terms] OR "school*" [Title/Abstract] OR "nurse*" [Text Word] OR "kindergarten" [Text Word] OR "preschool" [Text Word] OR "pre school" [Text Word] OR "day care" [Text Word] OR "daycare" [Text Word]) AND ("SARS-CoV-2" [MeSH Terms] OR "SARS CoV2" [Text Word] OR "SARS" [Text Word] OR "severe acute respiratory syndrome" [Text Word] OR "coronavirus*" [Text Word] OR "coronavirus infections" [Text Word] OR "2019-nCoV" [Text Word] OR "SARS-CoV-2" [Text Word]) AND ("Child" [MeSH Terms] OR "child*" [Title/Abstract] OR "infant" [Text Word] OR "pediatric" [Text Word])) AND (systematic review [Filter])	94	21:59:10
4	#1 AND #2 AND #3			("Schools"[MeSH Terms] OR "school*" [Title/Abstract] OR "nurse*" [Text Word] OR "kindergarten" [Text Word] OR "preschool" [Text Word] OR "pre school" [Text Word] OR "day care" [Text Word] OR "daycare" [Text Word]) AND ("SARS-CoV-2" [MeSH Terms] OR "SARS CoV2" [Text Word] OR "SARS" [Text Word] OR "severe acute respiratory syndrome" [Text Word] OR "coronavirus*" [Text Word] OR "coronavirus infections" [Text Word] OR "2019-nCoV" [Text Word] OR "SARS-CoV-2" [Text Word]) AND ("Child" [MeSH Terms] OR "child*" [Title/Abstract] OR "infant" [Text Word] OR "pediatric" [Text Word])	4,858	21:36:10
3	"Child"[Mesh] OR child*[tiab] OR infant[tw] OR pediatric[tw]			"Child"[MeSH Terms] OR "child*" [Title/Abstract] OR "infant" [Text Word] OR "pediatric" [Text Word]	3,150,270	21:35:28
2	"SARS-CoV-2"[Mesh] OR "SARS CoV2"[tw] OR SARS[tw] OR "severe acute respiratory syndrome"[tw] OR coronavirus*[tw] OR "coronavirus infections"[tw] OR 2019-nCoV[tw] OR SARS-CoV-2[tw]			"SARS-CoV-2" [MeSH Terms] OR "SARS CoV2" [Text Word] OR "SARS" [Text Word] OR "severe acute respiratory syndrome" [Text Word] OR "coronavirus*" [Text Word] OR "coronavirus infections" [Text Word] OR "2019-nCoV" [Text Word] OR "SARS-CoV-2" [Text Word]	182,473	21:34:52
1	"Schools"[Mesh] OR school*[tiab] OR nurse*[tw] OR kindergarten[tw] OR preschool[tw] OR "pre school"[tw] OR "day care"[tw] OR daycare[tw]			"Schools"[MeSH Terms] OR "school*" [Title/Abstract] OR "nurse*" [Text Word] OR "kindergarten" [Text Word] OR "preschool" [Text Word] OR "pre school" [Text Word] OR "day care" [Text Word] OR "daycare" [Text Word]	1,336,578	21:34:09



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Search number	Query	Sort By	Filters	Search Details	Results	Time
	clinicaltrials.gov			COVID-19 AND school reopening OR return to school OR re-entry OR restart	Jan 22, 2022 6:54:30	0
	https://covid-nma.com/			COVID-19 AND school reopening OR return to school OR re-entry OR restarting school	Jan 22, 2022, 9:05:00	0
	COAP Living Evidence on COVID-19			((school reopening) OR (return to school) AND (COVID-19))	4	Jan 22, 2022, 9:12:00
	CDC			COVID-19 and school guideline to open	1	Dec 30, 2021; 17:05:00 GMT+8
	UNICEF			COVID-19 and guideline for school reopening	1	Dec 30, 2021; 17:20:00 GMT+8
	Australian HPPC			COVID-19 and guideline for school reopening	1	Dec 30, 2021; 17:32:22 GMT+8
	UK			COVID-19 and guideline for school reopening	1	Dec 30, 2021; 18:00:00 GMT+8
	UNESCO https://planipolis.iiep.unesco.org/		by continent	COVID-19 and guideline for school reopening	60	Dec 30, 2021; 20:50:00 GMT+8



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

In cooperation with the Pediatric Infectious Disease Society of the Philippines

Funded by the Philippine Pediatric Society

Appendix 3A. Characteristics of Included Studies

Author, Year	Study Design	Setting	Population	Intervention	Comparison	Outcome/s
Kriemler, 2021	Cross-sectional	Switzerland	N = 641 students and 66 teachers of 14 Primary and secondary schools; randomly selected Students and teachers	<p>masks for teachers and children >12-years-old</p> <p>tapering of school breaks</p> <p>no mixing of classes</p> <p>ban of group gatherings such as excursions and camps beyond class units,</p> <p>no parents on school grounds (varies among schools)</p> <p>keep children at home when sick</p> <p>Facemasks for adults in the school from October 19 and for children of secondary schools (>12-years-old) from October 29, 2020.</p>	none	<p>No. of cases in children and teachers</p> <p>No. of students and teachers with symptoms</p> <p>Prevalence of COVID-19 in children and teachers</p>
Yung et al, 2021	Cross-sectional	Singapore	1 Pre-school, 1 Secondary school	<p>Terminal cleaning of the schools</p> <p>Suspension of extracurricular or sports activities</p> <p>Staggered recess breaks</p>	none	<p>No. of Primary cases</p> <p>No. of contacts that become symptomatic</p> <p>No. of secondary cases</p> <p>Transmission rate</p>
Kruger et al, 2020	Cross-sectional	Israel	Alternative primary school for children 3-12 y/o of HCW; 70 attended school vs 30 stayed at home	<p>Small class size, daily disinfecting and temperature check, face mask used by staff, handwashing</p>	none	<p>No. of cases and transmission rate among children and their families who attended school and those who stayed home</p>



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Author, Year	Study Design	Setting	Population	Intervention	Comparison	Outcome/s
Stein-Zamir et al, 2020	Cross-sectional	Israel	N= 1,161/1,190 students (12-18 y.o); 152/162 staff member	Masks, personal hygiene, social distancing daily health reports	none	No. of index cases No. of secondary cases Transmission rate, students and staff
Yoon et al, 2020	Cross-sectional	S Korea	N > 13 000 diagnosed COVID-19 cases students and staff; (K-12)	Masks, personal hygiene, restricting class size, staggered breaks, plastic barriers, symptom monitoring, online classes	none	No. of primary and secondary cases among students
Kampe et al, 2020	Cross-sectional	Germany	Diagnosed COVID-19 cases among schoolchildren 6-20 y/o and contacts	Masks, personal hygiene, restricting class size, staggered timetables	before school closure	No of cases before school closure and after re-opening No of school outbreaks per week No of cases per outbreak per week
Ehrhardt 2020	Cross-sectional	Germany	Cases and contacts of primary and secondary schools, and Emergency child care facilities	Phased opening; Face masks, Hand hygiene, reduced class size, Disinfecting, Physical distancing, cohorting, cancellation of activities (sports and music), cleaning ventilation	none	No. of primary and secondary cases among students Transmission rate



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Author, Year	Study Design	Setting	Population	Intervention	Comparison	Outcome/s
Larosa et al, 2020	Cross-sectional	Italy	COVID-19 cases in 36 schools with possible contact exposures in school; 0-19 y/o; N=1 248 contacts (only 1,200 were tested)	Masks, social distancing, physical distancing	none	No of primary and secondary cases among students and teachers Transmission rate (primary, secondary and overall)
Macartney, 2020	Cross-sectional	NSW, Australia	4 600 ECEC 3 103 primary and secondary schools ~ 143 084 school staff ~1.2M enrolled students 633/1448 contacts tested	Physical distancing (cohorting) Surveillance tracing	none	No of primary and secondary cases among students and teachers/staff Transmission rate
National Center for Immunization Research and Surveillance (NCIRS), 2020	Cross-sectional	NSW, Australia	Students and staff of ECE, primary and secondary schools	Surveillance of close contacts Physical distancing, hand hygiene, phased reopening cleaning, surveillance tracing	none	No of primary and secondary cases among students and teachers, per school term Transmission rate
Ismail 2020	Cross-sectional	England	ECE, K-12 N = median 928 000 (630 000 – 1 230 000) daily student attendance; 38 000 (IQR 35 500 – 41 500) ECEs, 15 600 (13 450 – 17 300) primary schools; 4000 (3700 – 4200) secondary schools	Smaller classes separated into bubbles; physical distancing and hand washing [Bubble setting (staff and children performing activities together without interaction with other bubbles); outbreak 2 linked cases within 14 days]	none	Event rates, case rates, transmission rate, Outbreaks



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Author, Year	Study Design	Setting	Population	Intervention	Comparison	Outcome/s
Brandal 2021	Cross-sectional	Norway	Index cases aged 5-13 y/o in 2 counties of Norway with highest incidence of C19 13 cases and 292 school contacts	Preventive measures physical distancing, strengthened hygiene measures, stay home if symptomatic; no face masks	none	Child to child and child to adult transmission rate
Dawson 2021	Prospective	Missouri, USA	N=21 342 in-person students from Springfield (22 schools) and St Louis/Springfield (57 : 12 SL and 45 Sf)	Face masks, physical distancing, ventilation, contact tracing, hand washing or sanitizer; isolation	none	No. of Primary and secondary cases
Volpp 2021	Cross-sectional	NJ, USA	G9-12 boarding school N=520 resident and 255 commuter students, 405 faculty/staff	Masking, testing, ventilation, physical distancing, proximity tracing devices, limit class, quarantine, isolation protocols with 2x weekly screening, webinars/sanctions/motivational contracts	none	no of primary and secondary cases among students and faculty
Falk 2020	Cross-sectional	Wisconsin, USA	17 rural K-12 schools 4,876 students, 654 faculty/staff	Masking within 6 feet outdoors and at all times indoors; cohorting; social & physical distancing (no mixing of classes, small class size, limit time in shared indoor spaces, distance of 6 ft from each other); classes and lunch periods held indoors	general population of the county	no. of cases/study pop'n Incidence rate in schools vs incidence rate in county



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Author, Year	Study Design	Setting	Population	Intervention	Comparison	Outcome/s
Hershow 2021	Cross-sectional	Utah, USA	20 elementary schools 10,171 students 1,214 faculty /staff	Masking, physical distancing, restriction of school-related extra-curricular activities & large group gatherings, non-essential extracurricular activities (e.g. sports, assemblies, performance, field trips) held virtually, cohorting, staggered lunch, gym classes, special activities (e.g. library use, art classes), mixed classes by grade levels during recess in some schools	none	no. of index and primary cases 2 ^o attack (transmission) rate
Zimmerman 2021	Intervention (no unexposed group; no pre-intervention outcomes)	North Carolina, USA	11 school districts >90,000 students, faculty/staff	Program: (1) education of leaders, staff and community; 2) peer-to-peer support for public health prevention measures, with sharing of lessons; 3) evaluation of secondary transmission 3Ws: wear mask, wait 6 ft apart, wash hands; daily screening, staggered classes cleaning, daily symptom screening	none	no. of primary and secondary cases case clustering



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Appendix 3B. Summary of Non-Pharmacologic Interventions and corresponding outcomes based on Countries Included in 17 observational studies

Countries	Context	Non-pharmacologic interventions	Outcomes	Management of outbreak / resurgence
Switzerland (Kriemler, 2021)	Closed from March 16 – May 10, 2020 Continuous operation, Aug 17 – end of 2020 Study done when incidence rate for SARS-CoV-2 was high for Zurich	Masks for teachers and children >12-years-old Physical distancing rules Tapering of school breaks No mixing of classes Ban of group gatherings such as excursions and camps beyond class units No parents on school grounds Requirement to keep children at home if sick	Even in a setting of high incidence of SARS-CoV-2 infections, unrecognized virus spread within schools was very low.	N/A
Singapore (Yung, 2021)	Schools not routinely closed Opened until April 8, then closed due to outbreak	Terminal cleaning of the schools Suspension of extracurricular or sport activities Staggered recess breaks	No evidence of SARS-CoV-2 transmission among children in schools SARS-CoV-2 transmission in children is significantly lower than that observed for other respiratory viruses	All close contacts quarantined for 14 days; admitted if developed symptoms; Non-close contacts continued classes 1 pre-school closed for 14 days, following increasing number of staff members with COVID-19 detection Single NP swab screening among asymptomatic children attending the school
Israel (*Kriger, 2020; *Stein-Zamir, 2020)	Closed from March 13-May 17, 2020 *Opened an alternative primary school for HCWs of a medical center, during the 9-week lockdown *Outbreak on May 26, 2020	*Small class size, daily disinfecting and temperature check; face mask used by staff; frequent handwashing *Masks; personal hygiene; *social physical distancing; daily health reports	*No evidence of increased infection in those who attended school and those who stayed *Outbreak occurred due to non-compliance with protocols [large classes of 35-38 students; no distancing in poorly ventilated classrooms were likely contributors to spread; air conditioners used bec. of heat wave (Min. of Health exempted school children from facemasks for 3 days)]	* Isolated children exposed to positive teacher; did PCR testing twice (7* & 14* day from exposure); none tested positive to PCR; return to school after 14 days *School Isolating Testing of the school community
South Korea (Yoon, 2020)	Closed until April 6, 2020 Stepwise opening for online and off-line learning, depending on grade level	Masks Personal hygiene Restricting class size Staggered breaks Online classes for Music Plastic barriers between desks Symptom monitoring	No significant school-related outbreak from school closure to online and off-line opening	N/A
Germany (*Kampe, 2020; *Erhardt, 2020)	Closed from March 16 to April 19, 2020 Phased reopening for secondary and primary levels	Phased reopening Face masks Hand hygiene Reduced class size	* Only few and small school outbreaks occurred * low child to child transmission	School closure not deliberate, happened because of summer break during June to Aug (part of study period).



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

		Disinfecting Physical distancing Cohorting Cancellation of activities (sports and music)		
Italy (Larosa, 2020)	Closed from March 10 2020 Reopened Sept 15, 2020	Masks Suspension of extracurricular activities Dividing into class groups (alternate attending school and remote learning) Single desks Physical distancing bet. Students Separate school entrance and exits	Non-negligible transmission, particularly in 10-18 years old	Prompt isolation Investigation Testing of contacts
Australia (Macartney, 2020; NCIRS, 2020)	Schools kept open March 23, 2020 – online learning implemented April 29 – schools reopened May 25 – full face-to-face teaching	Enhanced Surveillance of close contacts Early testing Hand hygiene Physical distancing Phased reopening Cleaning	Limited transmission in educational settings	N/A
England (Ismail, 2020)	Closed from Mar 20, 2020 Reopened June 1, 2020 for summer school. Study done during summer half term (jun 1 – Jul 17) Public health England initiated national surveillance in educational settings 1.6M/ 8.9M attended in-school that summer	Small classes separated into distinct social bubble (do not mix with other bubbles) Physical distancing Handwashing Masking not mentioned	Rates were low across all educational settings with highest risk in primary schools. There was strong association between outbreaks and regional C19 incidence, with risk increasing by 72% for every 5 cases /100 000 pop'n increase in community incidence, even during a period of low community incidence. Very little transmission between students noted.	Strengthen infection control measures at 2 levels : adult staff to be more vigilant for exposure outside of educational settings; and stringent infection control between staff. Real time reporting, risk assessment and national initiatives.
Norway (Brandal, 2020)	Study done when cases were highest in Oslo and Viken during 28 Aug to 11 Nov, 2020.	Strengthened hygiene measures Physical distancing Stay home if symptomatic NO face masks	Minimal child-to-child (0.9%) and child-to-adult (1.7%) transmission Household transmission is a considerable source of infection in children. Teachers are not at higher risk for C19 compared with other professions.	Strengthened hygiene measures Physical distancing Stay at home if symptomatic Adjust IPC measures according to community transmission level rather than closing schools.

^a Krieger et al, 2020

^b Stein-Zamir et al, 2020

^c Kampe et al, 2020

^d Ehrhardt et al, 2020



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

USA

Counties	Context	Non-pharma interventions	Outcomes	Mgt of outbreaks/ resurgence
Wisconsin (Falk, 2020)	For whole of US: only ½ of students receiving online instruction since March 2020 For Wood County, at time of study (Aug 31-Nov 29, 2020): only ~12.4% of children were attending virtually Widespread community transmission (7-40% positivity rates) Masking compliance = 92.1 to 97.4%	Masking within 6 feet outdoors and at all times indoors Cohorting Physical distancing (no mixing of classes, small class size, limit time in shared indoor spaces, distance of 6 ft from All classes and lunch periods held indoors No systematic screening done in school or in community	No in-school transmission between separate classroom cohorts	Infection source
Utah (Hershow, 2020)	Aug 4, 2020, reopened for in-person learning High community transmission (290-670 cases/1000) Mask use = 86% Median distance bet. students' seats = 3 ft Dec 17, 2020: change in definition of school contact for quarantine (only quarantined when index case or contact did not wear a mask during the interaction vs previously, all school contacts regardless of mask use, were quarantined After change in quarantine rules: 158 contacts continued school	Masking Restriction of school-related extra-curricular activities & large group gatherings; non-essential extracurricular activities (e.g. sports, assemblies, performance, field trips) held virtually Cohorting Staggered lunch, gym classes, special activities (e.g. library use, art classes) Some schools mixed classes by grade levels during recess	School-associated SARS-CoV-2 transmission is low No school. Related outbreaks Tertiary transmission in households of school-associated cases	Contact tracing Quarantine Testing Investigation of NPI compliance (social and physical distancing and masking)
North Carolina (Zimmerman 2020)	March 14, 2020: Closed pre-kindergarten to Grade 12 public schools, to in-person instruction July 15, 2020: re-opened via remote or hybrid learning	ABC Science Collaborative Program: (1) education of leaders, staff and community; 2) peer-to-peer support for public health prevention measures, with sharing of lessons; 3) evaluation of secondary transmission 3Ws: wear mask, wait 6 ft apart, wash hands Daily screening Staggered classes (50% in-person, 2 days each week; other 50% on different days) Cleaning Daily symptom screening Transparency in public reporting of cases	773 community-acquired SARS-CoV-2 infections 32 infections in contacts 3 clusters of cases (5 cases of within-school transmission): causes: exemptions of mask wearing in pre-kindergarten; eating together in close proximity Extremely limited within-school secondary transmission No instance of child-to-adult transmission	Contact tracing Testing encouraged but not required Quarantine Closing of schools with cluster of cases (5 cases of within-school transmission) Developed policies: 1) use of face shields if wearing of masks not feasible; 2) specialized plans for lunch and breakfast: outdoor eating, distancing, food preparation before taking masks off, limiting



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

		Close collaboration with health dept. Regular updates with principals and staff to encourage adherence to NPIs and report secondary transmission and breaches in safety protocols		mask-off time to 15 minutes for eating, no talking while eating and while masks are off
Missouri (Dawson, 2020)	December 7-18, 2020; at the time, the cumulative community incidence at St Louis was 711/ 100 000 and 996 / 100 000 at Springfield 57 K-12 schools with all but one offering full- or part-time virtual learning 70% (21 342/ 30 558) students attended in-person school at least part-time Modified quarantine policy adopted by Springfield, MO allowing student close contacts \leq 18 y/o of C19+ students with proper mask requirements to continue in-person learning	100% mask mandate Desk spacing \geq 3-6 ft apart Physical barriers between students and teachers Hand washing or hand sanitizing stations at school entrances, dining areas, restrooms and classrooms Increased ventilation (open windows or doors, fans, reduced occupancy, 5% updated heating/air con systems and ventilation)	56 confirmed C19+ persons with 270 school-based exposure contacts = 326 193 (59%) agreed to participate (37 primary and 156 contacts) 24/37 (65%) and 137/156 (88%) of which were students Only 102/156 contacts agreed to testing. 2% (2/102) tested C19+ None of those who underwent modified quarantine had C19+ results 2-week school incidence is 8/ 100 000 or $<$ 1% of the average community incidence	Follow CDC-recommended mitigation measures on isolation and quarantine guidance Contact tracing
New Jersey (Volpp, 2021)	During fall 2020, many K-12 schools closed to limit in-school transmission Aug 20-Nov 27, 2020, a private boarding school implemented comprehensive mitigation strategy for all incoming students and staff members for the SY. Included 2-week quarantine for all arriving students, upon arrival and At time of study, 7-day community incidence ranged from low 17 (late Aug) to 402 /100 000 (Nov 24)	Included 2-week quarantine for all arriving students, upon arrival and a (-) RT PCR w/in 10 days of arrival. Isolation protocols Universal masking Testing, mandatory biweekly screening Upgraded air-handling equipment to improve ventilation Physical distancing \geq 6 ft Contact tracing : (In Nov, the definition of closed contacts was changed to include persons within 15 minutes (before 10 mins) of cumulative exposure within 6 ft of a C19+ person during the 48 hours before testing.) Proximity tracing devices to be worn at all times on campus "Strike" system : consequences for students who do not comply	8 995 saliva specimen from 405 faculty/staff 12 494 nasal swab from 775 students 4% of Faculty/staff and 1% students were C19+, 7 mild, no hospitalizations, rest asymptomatic 93% (25/27) were infected by off-campus contacts Despite the increased incidence by Nov, the school did not experience any epidemiologically linked cases leading to clusters or outbreaks.	Persons with newly identified cases should be rapidly isolated to reduce transmission. Strict regimen of physical distancing and universal masking Behavioral reinforcement Improved air filtration and frequent testing



Appendix 3C. Table of Non-Pharmacologic Interventions per Study

Non-Pharmacologic Interventions (NPIs)	Total count	Norway	Germany	BW, Germany	Italy	Switzerland	England	NC, USA	MI, USA	UT, USA	WI, USA	NJ, USA	SMC, Israel	Jerusalem, Israel	NSW, Australia	NCIRS, NSW, Australia	Singapore	SKorea
Classification based on DOH-DEPED Guidelines on Safe Reopening (JMC No. 1) ¹	TOTAL PER NPI	Primary schools in Oslo and Viken, Norway	National surveillance of school outbreaks fr Jan to Aug 2020	0-19 y/o +COVID-19	41 classes in 36 educ ¹ settings (~31 000)	15 of 55 schools nested from Ciao Corona study	National surveillance in all educational settings : med 928 000 (630 000 - 1 230 000)	> 90 000 students & staff of 11/56 school districts	K-12 schools in St. Louis and Springfield, MI	20 K-6 schools in Salt Lake, UT	4476 K-12 students in 17/18 schools in Wood County, WI	775 Gr 9-12 and 406 staff of boarding school	435 3-12 y/o children of HCW working in Sheba MC	1190 students (12-18 y/o) and 162 staff of a public HS	3103 PS to HS schools & 4600 ECEC in NSW (N > 1 376 451)	10 educational settings (1 ECEC, 6 PS, 3 HS)	National surveillance of preschool to secondary schools	K-12 cases from the Korean CDC
I. SAFE OPERATIONS																		
Physical Distancing ²	17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Masking ³	12	X	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓				
Face Shields ⁴	0																	
Single desks ⁵	1				✓													
Reduced class size ⁶	7		✓	✓			✓		✓		✓		✓					✓
No / reduced mixing of Classes	7				✓	✓	✓	✓		✓	✓						✓	
Ventilation ⁷	5		✓	✓				✓	✓			✓						
HEPA filters	1											✓						
CO2 Monitoring devices ⁴	0																	
Separate entry/exits	1				✓													
No parents/guardians on school grounds	1					✓												
Sanitizing stations	1								✓									
Respiratory etiquette	2		✓	✓														
Personal Hygiene	11	✓	✓	✓			✓	✓	✓				✓	✓	✓	✓	✓	✓
Disinfection ⁸	6		✓	✓				✓					✓				✓	
Daily screening	2							✓				✓						
Daily symptom monitoring/ health report	4							✓	✓					✓				✓
Contact tracing ¹⁵	7					✓		✓		✓	✓	✓			✓	✓		
School Cleaning ⁹	2																	
Hybrid Learning ¹⁰	3		✓		✓						✓					✓	✓	
Cohorting ¹¹	4		✓				✓			✓	✓							
II. ENSURING TEACHING AND LEARNING																		
Phased reopening ¹²	3		✓	✓													✓	
Staggered/tapered school breaks, i.e. lunch	6		✓			✓		✓		✓							✓	✓
Suspend/reduce school-related extracurricular activities, i.e. excursion, gym, PE, music	5			✓	✓	✓				✓							✓	
Early testing ¹³	1																✓	
III. WELL-BEING AND PROTECTION																		
Temperature checks	3							✓					✓					✓
Stay home when sick	5	✓	✓	✓		✓										✓		
Surveillance of close contacts	3					✓					✓							
Quarantine and isolation protocols	3							✓	✓			✓						
Proximity devices ¹⁴	1											✓						
Plastic Barriers	2								✓									✓

LEGEND: BW= Baden-Wuerttemberg, NC= North Carolina, MI= Missouri, UT=Utah, WI= Wisconsin, NJ=New Jersey, SMC=Sheba Medical Center, NCIRS= National Center for Immunization Research and Surveillance, NSW=New South Wales ECEC= Early Childhood Education and Care, PS=primary schools, HS= high school.

¹ Categories are based on the DOH-DEPED Joint Memorandum Circular No. 1: Operational Guidelines on the Implementation of Limited Face-to-Face Learning Modality (Sept 27, 2021)

² Physical distancing Defined as being at 3 to 6 ft apart, depending on study

³ Masking Surgical masks for children at all times except when not tolerated anymore (especially in preschool or elementary)

⁴ CO₂ monitors & Face shields Found in Philippine Adult Living CPQ with evidence and recommendations but not mentioned as NPIs in the studies presented.

⁵ Single desks Soaced desks at 3-6 ft apart

⁶ Reduced class size Germany reported 50% reduction in all levels; S Korea based it on community alert levels reducing by 1/3 or 2/3 of class size and school closure with at least 1 confirmed case.

⁷ Ventilation Includes opening windows and doors, improving A/C circulation, use of fans, upgrading air vents and filters

⁸ Disinfection Surface disinfection in NC, USA

⁹ School Cleaning Done prior to school reopening after being closed due to confirmed +COVID-19 Cases

¹⁰ Hybrid learning Combination of in-person (on-site) school and online (remote) learning days in school

¹¹ Cohorting Group of students and staff who remain together throughout the school year

¹² Phased reopening Opening of specific levels at different times, i.e. Graduating classes first then regular levels.

¹³ Early testing Case-contact testing where enhanced investigations using surveys, RT-PCR tests and serologic tests are done on close contacts 5-10 days after last case contact

¹⁴ Proximity devices Devices worn by students and staff to monitor physical distancing. Worn in a boarding school in New Jersey, USA

¹⁵ Contact tracing Contact tracing was explicitly mentioned as NPI in 7 studies but transmission rates were reported in 12 studies indicating possible indirect evidence of contact tracing.



Appendix 4. Risk of Bias Assessment for cross-sectional Studies (Newcastle Ottawa Scale)³³

Study	Selection				Comparability based on design and analysis; control of confounders	Outcome		Quality
	Representativeness of sample	Sample size	Non-respondents	Ascertainment of exposure		Assessment	Statistical test	
Kriemler et al, 2021	*	*	*			**	*	poor
Yung et al, 2020	*					*	*	poor
Kruger et al, 2020								poor
Yoon et al, 2020				*				poor
Kampe et al, 2020	*			*			*	poor
Stein-Zamir et al, 2020	*					**		poor
Larosa et al, 2020	*					**		poor
Macartney et al, 2020		*		**		*		poor
Ehrhardt et al, 2020	*			**				poor
NCIRS, 2020	*	*		**		**		poor
Ismail 2021	**	*		**		**		poor
Brandal 2020	*			**		**		poor
Dawson 2020		*		**		**		poor
Volpp 2021	*	*		**		**	*	poor
Falk 2020		*			**	**		poor
Hershow 2021						**		poor
Zimmerman 2021				**		**		poor

Good quality: 3 or 4 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome domain
 Fair quality: 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome domain
 Poor quality: 0 or 1 star in selection domain OR 0 star in comparability domain OR 0 or 1 star in outcome domain



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Appendix 5. GRADE Evidence Profile

Author(s): Tapia, Carolina and Eubanas, Gina, Perz, Ma. Lucila, Tolosa, Ma. Teresa

Question: Non-pharmacologic interventions compared to no intervention for decreasing COVID-19 transmission in school settings

Setting: school

References: ¹Yoon, 2020; ²Stein-Zamir, 2020; ³Kriemler, 2020; ⁴Yung, 2021; ⁵Erhardt, 2020; ⁶Larosa, 2020; ⁷Macartney, 2020; ⁸NCIRS, 2020; ⁹Hershow, 2020; ¹⁰Zimmerman, 2021; ¹¹Falk; ¹²Brandal, 2020; ¹³Dawson; ¹⁴Volpp, 2021; ¹⁵Ismali; ¹⁶Kampe

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	NPIs	No intervention	Relative (95% CI)	Absolute (95% CI)		
number of cases												
15 ^k	observational studies	serious ^a	serious ^b	serious ^c	not serious ^d	all plausible residual confounding would reduce the demonstrated effect	2711 cases: 50 cases ¹ 180 cases ² 1 case ³ 3 cases ⁴ 15 cases ⁵ 86 cases ⁶ 45 cases ⁷ 119 cases ⁸ 786 cases ⁹ 825 cases ¹⁰ 191 cases ¹¹ 13 cases ¹² 24 cases ¹³ 27 cases ¹⁴ 130 cases ¹⁵ 216 cases ¹⁶ Median: 68 cases (range 1 to 825 cases) only 2 studies provided data on total population: 1/707 = 0.14% ³ 786/11385 = 6.9% ⁹ Duration of follow-up: median = 101.29 weeks (Range 1.57 to 30.86 weeks) Prevalence study (Kriemler, 2021) was excluded due to 2 days of testing only Overall, studies were from Feb 2020-Jan 31 2021 (11 months)				⊕○○○ Very low	CRITICAL
Transmission rate												
12 ^k	observational studies	not serious ^a	serious ^b	serious ^c	not serious ^e	all plausible residual confounding would reduce the demonstrated effect	0 to 6.64% ⁴⁻¹⁵	0/0	not estimable		⊕○○○ Very low	CRITICAL
number of outbreaks per week												
1 ^l	observational studies	very serious ^f	serious	not serious	not serious	all plausible residual confounding would reduce the demonstrated effect					⊕○○○ Very low	CRITICAL
number of cases per outbreak												
2 median of 57 600 schools ¹⁵	observational studies	very serious ^f	serious ^g	not serious ^h	not serious	all plausible residual confounding would reduce the demonstrated effect					⊕○○○ Very low	IMPORTANT

Incidence Rate



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	NPIs	No intervention	Relative (95% CI)	Absolute (95% CI)		
4 3 studies ^{11, 13-14}	observational studies	serious ⁱ	not serious ^b	not serious	not serious ⁱ	none	3,454/100 000 school children and staff (vs 5,466/100 000 in county) ¹¹ weekly IR: 72-699/100 000 students & staff ¹¹ 8/100,000 ¹³ Students: 74/100 000 ¹⁴ Staff: 300/100 000 ¹⁴ Staff: 27/100 000 per day ¹⁵ Students: 6-18/100 000 ¹⁵	0.0%	not estimable		⊕○○○ Very low	CRITICAL
Prevalence Rate												
1 14 schools; 641 students, 66 teachers ³	observational studies	not serious	not serious	not serious	not serious	none	1 case/641 students = 0.2% no case among teachers				⊕⊕○○ Low	CRITICAL
Attack rate (assessed with: rates)												
1 1 school; 1161 students, 152 staff ²	observational studies	not serious	not serious	not serious	not serious	none	students: 152/1161 (13.1%) staff: 25/152 (16.6%)	0.0%	not estimable		⊕⊕○○ Low	CRITICAL



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

CI: confidence interval

Explanations

- a. There is a high risk of bias due to selection of sample and measurement bias.
 - b. Inconsistency is due to heterogeneity of interventions, and age range of subjects.
 - c. There was no assessment of direct impact of the interventions on the outcome.
 - d. The number of cases reported in these studies were reported by counties, regions and school districts, with large enough populations. (Kampe, Ehrhardt, Larosa, Yoon, Brandal)
 - e. One study (Ismail) was a national surveillance effort involving all educational settings.
 - f. There was measurement bias (outcome measured in a different age group).
 - g. One study (Kampe) compared outbreaks before and after school closure. The other study (Ismail) studied association between outbreaks and regional C19 incidence.
 - h. The definition of an outbreak is the same for both studies.
 - i. There was measurement bias from use of google forms to monitor attendance and compliance with NPIs. Only 50% of teachers participated. No surveillance screening; may have missed asymptomatics.
 - j. The large population size came from the National surveillance done in England, including all educational levels.
- *total number of schools or participants cannot be computed as cases were obtained from national surveillance systems, their contacts traced and tested; in some studies not all contact were tested
no mention of total number of schools, students nor teachers/staff



Appendix 6. Table of Ongoing Studies

Author, Year	Title	Study design	Objectives	Population	Exposure	Comparison	Outcome/s
Lopes-Junior, 2021 (Prospero Reg no. CRD42021265283 PMID: 34788344 DOI: 10.1371/journal.pone.0260189	School reopening and risks accelerating the COVID-19 pandemic : A SRMA protocol	observational studies	synthesize and evaluate the potential risks of accelerating COVID-19 pandemic among children, adolescents, young adults and adults with school opening	infant, child, preschool, adolescents, young adult, adult (MeSH), all sexes, all ethnicity	school reopening	school lockdown	primary : risks accelerating COVID-19 pandemic secondary: viral load among children and teachers; transmission rate



Appendix 7. Detailed Recommendations from Other Groups

<p>CDC (updated Feb 7, 2022)</p>	<ul style="list-style-type: none">• Universal indoor masking, regardless of vaccination status.• Physical distancing (at least 1 meter). If this is not possible, layer it with multiple preventive strategies, i.e. screening, ventilation handwashing and respiratory etiquette, staying at home when sick, contact tracing, cleaning and disinfection.• Schools may consider foregoing quarantine for students 12-17 years old who completed their vaccine series (even without boosters) to minimize disruption of in-person learning.• For Early Care and Education (ECE), use of multiple prevention strategies is emphasized, including universal indoor masking for children ≥ 2 years old, regardless of vaccination status, as well as the other aforementioned preventive strategies.• Link : https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/index.html#:~:text=CDC%20recommends%20universal%20indoor%20masking,layered%20prevention%20strategies%20in%20place
<p>WHO</p>	<ul style="list-style-type: none">• Plans to reopen schools should be based on assessments and analyses of context-specific risks and benefits and should be for the best interests of the students and public health considerations. It should also aim to reduce inequalities and improve educational conditions and health outcomes for the most vulnerable and marginalized.• There are 38 essential actions in the checklist for reopening and potential resurgences, divided among decision-makers and stakeholders in the national, subnational and school levels. 15 essential actions at the school level should be implemented for reopening. Notable among these are: 1) establishing a school support team who will assess the feasibility of implementing protective measures (physical distancing, outdoor classes; handwashing facilities, staggered set-ups, multiple entrances); 2) promote wearing masks; 3) promoting hand hygiene and respiratory etiquette; 4) adequate ventilation; 5) health education; 6) raise awareness of importance of self-reporting of symptoms; and 6) record students' health status.• Link : https://www.who.int/publications/i/item/9789240017467



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

<p>UNICEF (21 September 2021)</p>	<ul style="list-style-type: none"> ● Six key dimensions used to assess the state of readiness of identified schools for reopening, one of which is safe operations. ● Provide clear national guidance on parameters for decision making on school opening, beginning with areas with low transmission rates and localized risks, and staging (few days a week, by grades or levels, etc) ● Develop detailed protocols on hygiene measures (hand washing, masks cleaning procedures and respiratory etiquette) ● Link : https://www.unicef.org/lac/en/guidance-notes-and-guidelines-safe-school-reopening ; <ul style="list-style-type: none"> ○ Guidelines for Philippines : https://www.unicef.org/heldsan/reopening-schools-safely ○ Checklist : https://www.unicef.org/lac/en/media/14591/file
<p>UNESCO-World Bank Framework (June 2020)</p>	<ul style="list-style-type: none"> ● With sufficient capacity and resources, schools can successfully implement context-appropriate health and hygiene protocols. These include symptom screening, handwashing, use of protective equipment and cleaning procedures for facilities. ● Multiple measures – with varying cost implications- can be used to reduce physical contact and limit transmission. These include improving indoor ventilation, moving classes outdoors, building additional classrooms, staggering start/end times, alternating shifts/days, hiring additional teachers to reduce class size, blending distance and in-person learning, and isolating class groupings from one another. ● Link : https://www.wfp.org/publications/framework-reopening-schools-report-unesco-unicef-world-bank-and-world-food-programme
<p>UK updated December 2021</p> <p style="text-align: right;">9</p>	<ul style="list-style-type: none"> ● None mentioned on preparing for school reopening. ● Latest update does not recommend wearing of masks or face covering in classrooms and communal areas of school of secondary schools and colleges, except for close contacts. Daily testing of close contacts for 5-7 days or until tested positive. ● Link : https://www.gov.uk/government/collections/guidance-for-schools-coronavirus-covid-19



AUSTRALIA updated November 2021	15	<ul style="list-style-type: none">• Schools are an essential service and should open and remain open whenever possible.• Multiple interventions can reduce the likelihood of infection in school, including: elimination (remote learning), substitution (screening and isolation); engineering (ventilation, cleaning, physical distancing); administrative (cohorting, altering routines); and PPE (surgical masks for adults and students)• When there is increased community transmission, screen students and teachers before attendance• Link : https://www.health.gov.au/news/hielidsan-health-protection-principal-committee-ahppc-statement-on-covid-19-schools-and-early-childhood-education-and-care
DOH		<ul style="list-style-type: none">• DepEd-DOH JMC No.01 adopts the UNESCO-UNICEF-World Bank Framework for Reopening Schools and DepEd Shared Responsibility Principle.• Schools to set up physical structures, wash facilities and supplies, PPEs, health and safety protocol, adjusted class programs (blended learning, staggered class hours, etc) as required by the Joint Memorandum Circular between DepEd and DOH.• Other requirements include screening the vaccination records of children (routine immunization), well-fitted face masks and face shields, physical distancing, adequate ventilation, large learning spaces, well-marked entrances, and contact tracing procedures.• Link : https://www.deped.gov.ph/wp-content/uploads/2021/09/DEPED-DOH-JMC-No.-01-s.-2021.pdf



Philippine Pediatric COVID-19 Living Clinical Practice Guidelines

Appendix 8. Evidence to Decision Framework

Table 1. Summary of initial judgements prior to the panel discussion (N = 9)

FACTORS		JUDGEMENT (N = 9)						RESEARCH EVIDENCE/ADDITIONAL CONSIDERATIONS
Problem	No	Yes (9)		Varies		Uncertain		<ul style="list-style-type: none"> 24.9M students missed ¼ or all face-to-face classroom instruction for more than 60 weeks.
Benefits	Large (3)	Moderate (6)	Small	Trivial	Varies		Uncertain	<ul style="list-style-type: none"> Lower transmission with multi-layered prevention strategies
Harm	Large	Moderate (3)	Small (4)	Trivial (1)	Varies (1)		Uncertain	
Certainty of evidence	High	Moderate		Low (4)		Very low (5)		
Balance of effects	Favors intervention (1)	Probably favors intervention (7)	Does not favor intervention or no intervention	Probably favors no intervention	Favors no intervention		Varies	Uncertain
Values	Important uncertainty or variability (1)	Possibly important uncertainty or variability (3)		Probably no important uncertainty or variability (5)		No important uncertainty or variability		<ul style="list-style-type: none"> All studies are done in first world countries.
Resources required	Uncertain (1)	Varies	Large costs (5)	Moderate costs (3)	Negligible costs or savings (1)		Moderate savings	Large savings
Certainty of evidence of resources required	No included studies (7)		Very low	Low (2)	Moderate		High	
Cost-effectiveness	No included studies (7)	Varies	Favors the comparison	Probably favors the comparison	Does not favor the comparison or the intervention		Probably favors the intervention (2)	Favors the intervention
Equity	Uncertain (5)	Varies	Reduced	Probably reduced (1)	Probably no impact		Probably increased (3)	Increased
Acceptability	Uncertain (2)	Varies (2)	No	Probably no (1)	Probably yes (4)		Yes (1)	
Feasibility	Uncertain (4)	Varies (2)	No	Probably no	Probably yes (2)		Yes (1)	

Additional Comments

- The feasibility and equity will highly depend on whether the schools are in the private or public setting.