<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Purpose/notes</th>
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<tr>
<td>13:00 – 13:05</td>
<td>Welcome</td>
<td>Reminder and Update on Action points agreed from 9th TAG – WHO on behalf of the co-chairs</td>
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<td>Adoption of agenda</td>
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<td>13:05– 13:10</td>
<td>Declarations of Interest – WHO</td>
<td>Compliance</td>
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<td>13:10 – 13:20</td>
<td>Variants of Concern in school age children: an update on what we know</td>
<td>Presentation</td>
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<td>Presentation by Laura Espenhain, Epidemiologist, Statens Serum Institut, Denmark</td>
<td>UNICEF moderating chat</td>
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<td>Discussion</td>
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<td>13:20 – 13:50</td>
<td>Feasibility of implementing recommended public health and social measures in schools: how the reality check shall influence the current guidance</td>
<td>Presentation</td>
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<td>Presentation by Mary Metcalfe, Senior Research Associate, University of Johannesburg, CEO of PILO (Programme to Improving Learning Outcomes)</td>
<td>UNICEF moderating chat</td>
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<td>Discussion</td>
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<td>13:50 – 14:20</td>
<td>Anticipating an increase in COVID-19 vaccine availability: under which conditions immunizing children becomes an effective strategy?</td>
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<td>Vaccination modeling workplans in LMICs, Brian Wahl, Johns Hopkins Bloomberg School of Public Health</td>
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<td>A perspective from the Western Pacific region – Nick Scott, Burnet University, Australia</td>
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<tr>
<td>14:20 – 14:25</td>
<td>Update from the research working group</td>
<td>Valentina Baltag, WHO</td>
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<td>Presentation, WHO Chair,</td>
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<td>UNICEF moderating chat</td>
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<td>14:25 – 14:30</td>
<td>Wrap up and reminder of date of next meeting</td>
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<td>Concluding remarks</td>
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1. Action points from the 9th TAG meeting that took place on 18th February 2021

<table>
<thead>
<tr>
<th>Action point</th>
<th>Status</th>
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<tbody>
<tr>
<td>None</td>
<td>N/A</td>
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2. Approval of the agenda

- Agenda approved.

3. Variants of Concern in school age children: an update on what we know

Presentation by Laura Espenhain, Epidemiologist, Statens Serum Institut, Denmark

- Age-specific incidence data show a similar pattern among all age groups within Denmark (increasing incidence from about week 48-51, followed by decline). This trend is least pronounced among young children (<5 years) but most pronounced among adolescents and younger adults (10-24 years), who show a trend higher than that of working adults.

- Sequencing data show that the testing capacity has increased dramatically with a majority of confirmed cases being sequenced in recent weeks. Sequencing results show that B.1.1.7 has quickly become the dominant variant within Denmark, account for over 80% of sequenced cases.

- There is limited experience with B.1.1.7 in school settings as well as in other settings where there is gathering/or where it is difficult to practice distancing (e.g., workplace, pre-school). Current data suggest that children and adolescents generally account for a
similar proportion of total cases when comparing cases due to B.1.1.7 to cases due to other variants.

- Transmission is presently in a low-level, stable state, but many restrictions remain in place or have only recently been lifted (e.g., only at week 6 [prior to winter holidays] were children allowed to return to school). The complete re-opening of schools remains pending and is likely to be associated with younger age groups accounting for an increased proportion of overall cases.

- May still be too early to evaluate effect of B.1.1.7 and school opening as many restrictions, including school closures, are still in place.
  a. It is expected that children in open schools will make out a higher proportion of diagnosed cases
  b. There is currently no indication that size of possible outbreaks in schools have changed, though this should be interpreted with caution and may relate to increased testing among older students and teachers.

Open discussion:

A. The proportion of cases occurring within specific age groups were discussed (Slide 4). It was noted that the dotted horizontal line on each graph represents the age group’s proportion of the total population. Consequently, bars above the line represent higher incidence among the age group relative to the size of the population (and the inverse for bars below the dotted line).

B. Cases included in the presentation represent those that have been confirmed through testing. This will include cases detected through routine testing (e.g., older students and teachers) and those who were tested because they were either symptomatic or had close contact with a positive case. Data do not allow for disaggregation by the reason for test (e.g., routine vs. symptomatic). Certain test types may be more common among routine testing (i.e., antigen test) and this could be extracted.

C. It was also asked whether there were data on symptomatic disease among the different age groups. These data were not available within the presentation and may generally not be available. V Barnekow noted that it is not standard practice in Denmark to inquire about symptoms when visiting a rapid testing facility – rather, there is a general expectation that one would test regularly with or without symptoms.

D. S Karmin noted that WHO and UNICEF had an informal brainstorm with clinicians in the UK, South Africa, US, Brazil on 17th March to discuss what they’re seeing in children on the ground including with the variants of concern. Overall it seems these data confirm variants are not more severe among children.

4. Feasibility of implementing recommended public health and social measures in schools: how the reality check shall influence the current guidance

Presentation by Mary Metcalfe, Senior Research Associate, University of Johannesburg, CEO of PILO (Programme to Improving Learning Outcomes)

- Key take-aways:
  a. **Necessary Resources**: Reliable information to inform decision-making; PPE Material and the capability to use the material
  b. **System capabilities to**: Inform timeously; Provide the necessary resources; Support schools to solve problems
  c. **Enablers/ Assets: Technical and Adaptive Leadership**: Evidence-based Guidelines are Tools (not compliance-driven rules divorced from principles);
Clear Principles that can inform decision-making adapted to different contexts; Ability to lead in, and respond to, uncertainty; Work with key stakeholders such as teacher unions to communicate key information through trusted leaders

d. **Social imperative to get children back to school**: School routines can be a barrier to infection; Social needs – such as school nutrition programme, structured environment of care

e. **Deepening Inequality: Danger signs**

- The presentation reviewed the decision-making flow in South Africa, a schematic of which is included within the PowerPoint slides.
- South Africa began a hard lockdown and abrupt school closure in March 2020. Many grade levels remained closed through late August (exceptions are Grades 7 and 12, the final years of primary and secondary school)
  a. Phased re-opening allowed for multiple levels of readiness to be in place (*material readiness, school procedure readiness, and readiness to teach*); very different context across provinces
- Review of WHO Guidelines/checklist showed various assumptions about school-health system integration and capability and assumptions about sub-national administrative/school support capability that may not be valid for the South African context. Many of the assumption in the essential actions depend on effective school management.
- What needs to be in place for these components of readiness? What is the reality – South African case study.
  b. Assessed material readiness, school procedure readiness, and readiness to teach
- **Provincial variations in material readiness**
  a. A week before reopening (29th May), material readiness was generally below 50%. This was especially low for facemasks and needed water tanks.
  b. Additionally, cleaning of classrooms was an issue. This relates to the science, which at the time said that classrooms should be defogged. This was unlikely to be necessary given that classrooms had been empty.
  c. Provincial differences are clear. For instance, Western Cape has readiness above 80% for many of the listed items while Eastern Cape, Mpumalanga, and Limpopo are below 50% for many items.
    - Further consideration: Eastern Cape, KwaZulu-Natal, and Limpopo account for 62% of all schools. These provinces are large and poor.
  d. Reviewing the same chart one week later (5th June) shows marked improvement but persistent issues with needed water tanks. Similar dominance of Western Cape and Guateng in high readiness.
- **Provincial variations in institutional/management readiness** (e.g., confidence in ability to follow protocols)
  a. A week before reopening (29th May), poor readiness scores across all items (with exceptions for high-performing provinces noted above). Principals may have received equipment by this date but institutional readiness to use these materials was not present. One week later (5th June), levels of confidence had improved markedly.
  b. Some persistent issues regarding systems to dry and discard paper towels after washing hands entering/leaving classrooms (complicated as students are often moved between classrooms for classes).
- **Provincial variables in readiness for teaching**
a. South Africa has a system of alternating attendance daily to accommodate for physical distancing. This has significant implications for planning for teaching.
b. Levels of readiness for teaching were extremely low, remained low (through 6th July), and continue to be a struggle.

➢ Challenges/learning: 1) Recognizing agency; 2) Responsiveness in a dynamic pandemic; 3) Public confidence; 4) Government support capability is key; 5) Educations inequalities are exacerbated

  a. **We must approach the pandemic with the perspective of addressing existing deficiencies and building long-term capability and collaboration**

➢ South Africa and the continent: a report examining the experience in eight countries suggests that policy responses may not have been rooted in the best available evidence and that these responses were limiting and incomplete.

Open discussion:

A. D Ross asked whether there was any resistance from parents and/or teachers for being told to go back to school, noting that this has occurred in other contexts (e.g., Europe). D Edwards also asked about parental hesitancy and measures that have been effective for building trust for parents to send their children back to school.

  a. Parental resistance could be viewed in terms of international inequalities. Resistance may be more common in settings where home-based learning is possible and where it is easier to keep children at home (e.g., UK/US), though this is not the case in South Africa. As such, there may have been greater support in South Africa to get children back in school.

  b. Union involvement may have helped to reduce resistance among teachers.

B. H Zar asked whether there has been any differentiation between children in secondary school contexts and children in primary or pre-school contexts, noting that risk of infection is different in these age groups.

  a. From education advisory group perspective, this keeps being raised and from cautious perspective they are not differentiating between age groups. This may not always be ideal but it represents the scientific viewpoint of those on the advisory group.

  b. Additional scientific inputs on physical distancing would be appreciated, especially if it would be possible to reduce the distancing requirement without negative impact on transmission. Is there a strong evidence base to support the distancing requirement of 1.5-2 meters?

C. H Zar asked whether there are ancillary systems necessary to support school functioning (e.g., transport, cleaning).

  a. This is critical. The science may tell us that children are less at risk, but teachers are working in contexts of great risk and should be considered front-line workers. In South Africa, they are prioritized in phase 2.

D. D Edwards asked about teacher burnout/wellbeing and any supports the government implemented in this regard.

  a. Principals were asked whether they had the resources they needed to cope with levels of anxiety and whether they had somewhere to turn for help. Half of principals reported that they did not have these resources. This suggests that burnout will be an issue and the learning backlog will be worse this year than it was last year.

E. E Maughan asked for suggestions on building back better to address infrastructure.
a. Assumptions made about capabilities should be made explicit. It should also be noted that in certain contexts (e.g., LMICs), these assumptions may not be valid.
b. Additionally, L Jones shared a link to GADRRRES ([https://www.gadrrres.net/](https://www.gadrrres.net/))

5. Anticipating an increase in COVID-19 vaccine availability: under which conditions immunizing children becomes an effective strategy?
Presentation by Raymond Hutubessy, WHO

- Presentation on behalf of the SAGE Working Group on COVID-19 vaccines, Impact modelling subgroup. This subgroup considers the effectiveness of various scenarios, the outputs of which inform the development of a draft SAGE position.
- The presentation includes plans for modeling. Results will be available at a later stage.
- Vaccine modeling subgroup is organized around three main activities:
  a. Requests for information (RfI) and commissioning of work (RfP)
  b. Ad hoc presentations from modelling groups (weekly)
  c. Summary of findings for SAGE/SAGE WG & systematic review of literature
- The subgroup has reviewed models based on nine geographical areas – these are primarily country-specific but have included several models with multi-country/regional focus. The majority of experience to-date has focused on high-income countries.
- Which questions in the July 2020 RfI have been addressed, which questions are still outstanding?

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<thead>
<tr>
<th>Question</th>
<th>HIC</th>
<th>LMIC</th>
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<tr>
<td>1. What would be the impact of vaccinating each of the following target groups on SARS-CoV-2 infections, COVID-19 deaths, and COVID-19 years of life lost, for vaccines given during 2020-21 when vaccination is added to counterfactual scenarios of: (i) no interventions, or (ii) continued implementation of non-pharmaceutical interventions (NPIs)?</td>
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<td>a. older adults (50+, 65+ or 75+ years)</td>
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<td>b. younger adults (18-49 years)</td>
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<td>c. school-age children (5-17 years)</td>
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<tr>
<td>a. those at high risk of severe disease because of their underlying health conditions (e.g., cardiovascular disease, kidney disease; see section III)</td>
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<tr>
<td>a. key workers (e.g., workers in health and social care, teachers; see section III)</td>
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<tr>
<td>a. groups at high risk of infection (e.g., dense urban slums/informal settlements, health workers; see section III)</td>
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<tr>
<td>2. What are the optimal vaccination strategies in terms of target groups under different possible supply scenarios for COVID-19 vaccine during 2020-21 to achieve the</td>
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maximum reduction in SARS-CoV-2 infections, COVID-19 deaths or years of life lost?

3. How would health impacts be distributed across country income groups (high, middle, low) and within countries across household wealth quintiles for the different vaccination targeting approaches described in Questions 1-2?

+ (across countries)  + (across countries)

- RfP issued to address outstanding priority modelling questions identified by SAGE WG (issued 8 Jan with 31 Jan deadline – for more info see here). The RfP includes 18 questions under 5 topics.

I. Vaccination strategies to maximize in-person schooling provision
   - **Health impacts on teachers/staff and students:** Vaccinating teachers/staff vs. students vs. other adults: what would be health impacts on teachers/school staff, students, households of teachers, staff, and students, broader community?
   - **Impacts on use of school-based mitigation measures:** Would vaccinating teachers/staff vs. students vs. other adults permit reduction of any school-based mitigation measures while not increasing SARS-CoV-2 infections?
   - **Economic impacts of use of remote learning:** If vaccinating teachers/staff vs. students vs. other adults would permit reduction of remote learning, what would be the economic impacts on parents and students?

II. Vaccination strategies to keep health system use below maximum capacity
III. Importation into settings with no cases and outbreak response vaccination
IV. Extent to which vaccination can allow non-pharmaceutical interventions to be lifted
V. Strategies to maximize impact of available supply of vaccines

Vaccination modeling workplans in LMICs, Brian Wahl, Johns Hopkins Bloomberg School of Public Health

- Presenting on behalf of team, including S Krishna (NCBS – Bengaluru, India), B Wahl (JHSPH – Baltimore, USA), and G Menon (IMSc – Chennai, India)
- Proposal will address Topics I, II, and IV using previously developed models (see below). Topics III and V not addressed.
Network-based model includes different locations (homes, schools, workplaces, and community) and allows for individuals’ movement between locations

a. Model was previously applied to consider daily rate of testing and peak infection as well as the total fraction infected. The model could similarly be applied to consider different vaccination strategies to see the different relative impact on COVID-19 disease outcomes.

b. Model applies age- and cohort-specific transmission probabilities and location-specific force of infection. Allows for varying teacher-to-student ratios, age-mixing within schools, and other characteristics (e.g., ventilation) to evaluate the impact of different vaccine strategies both within and outside of the school settings.

Compartimental model to address Topics II and IV. This model was previously applied to model impact of various vaccine strategies on symptomatic infections and cumulative deaths under conditions of sterilizations and non-sterilizing immunity.

A perspective from the Western Pacific region – Nick Scott, Burnet University, Australia

Covasim model is an individual-based model that simulates household, school, work, and community contacts. Model can account for:

a. Demographics (e.g., population size, age structure, household structure)

b. Epidemiology (COVID-19 cases and deaths)

c. Interventions (testing, contact tracing, isolation, quarantine, masks)

d. Restrictions and policies that have been implemented (sector closures [including schools], density limits)

School modeling is done at the classroom level (students grouped by age). Key variables to approximate different policies in schools: closures or partial closures; interventions to reduce transmission risk; and density limits.

Primary outcomes (infections, hospitalizations, deaths) under different scenarios, including varying vaccine protection against infection and protection against disease

a. SQ: Status quo

b. S1: Vaccination of teachers/school staff

c. S2: Vaccination of teachers/school staff + students

d. S3: Vaccination of teachers/school staff + wider community (equal to number of students for comparability)

e. [S2 and S3 intended to assess how best to spend limited vaccine supply]

Also interested in exploring the impact of vaccination in combination with changes in remote learning and/or other non-pharmaceutical interventions
a. Which vaccine scenario would allow return to classroom or removal of other restrictions without increasing infections (or hospitalization/deaths)?
   - Other considerations: SARS-CoV-2 strain, vaccine characteristics, epidemic stage

Open discussion:

A. A Banerjee asked about the timeline, specifically when modeling results might become available. R Hutubessy noted that some results are anticipated by the middle of 2021. Both presenters noted that the models in question are largely developed and draft results may be available soon (e.g., perhaps 4-6 weeks for Covasim).

6. Update from the research working group
   Presentation by Valentina Baltag

   ➢ The group met yesterday (17th March) to hear about experiences from LMICs. The meeting focused on research that can better inform about experiences in these countries.
   ➢ An update from UNESCO noted that the global average for full or partial school closures is 26 weeks, which corresponds to two thirds of an academic year. The most affected regions in terms of duration of school closure are Latin America and the Caribbean, followed by North Africa and Western Asia. (Oceania and Europe were the least affected.)
   ➢ PopCouncil presented the results of studies in Bangladesh and Kenya
     a. **Bangladesh:** A survey of adolescent girls (three rounds) considered schooling, marriage, and mental health impact.
        - Findings show an increase in proportion of girls NOT studying at all and a similar increase in the percent of those not following government teaching by TV.
        - There is also an increase in reporting of child marriage within community, which was high at baseline (52%) but has increased to 100%.
        - Conclusion: adolescent girls have become even more isolated and the impact on education and schooling is alarming.
     b. **Kenya:** Longitudinal study using phone-based surveys. What is the effect of COVID-19 on social, health, and economic outcomes?
        - From Round 1 (schools closed): 36% of adolescent participants reported depressive symptoms (similar by sex); High economic loss – 48% of adults lost partial employment, 33% lost full employment; Over 1 in 10 adolescents had foregone needed health services in previous month and over half reported skipping meals
        - Girls have lower rate of re-enrollment in two of the four regions (boys are lower in one of four). School fees were the main barrier. Fees have not increased but one explanation is that the economic challenges have made school fees comparatively more expensive than they were previously. Pregnancy could be another reason.
     c. **Georgia:**
        - An example of a setting that used to be highly centralized, moved to be non-centralized in 2005, and was re-centralized in 2010. The pandemic was litmus test for centralized governance.
        - Teacher Professional Development Centre (TPDC) was late in responding.
Social media was a helpful tool to compensate for the lack of an organized response. Platforms included Facebook groups, Microsoft Teams.

Teachers felt lots of freedom, though this could not always be good. For example, freedom without adequate support may cause increased stress.

7. Wrap and closing

- Next meeting will be 15th April 2021
- Action items:
  a. Share presentations made today
  b. Share presentations from the research group meeting (where possible)