Reopening schools during the COVID-19 pandemic: A summary of strategies from other countries

Key messages

- As of October 1st, 2020, there is a lack of robust evidence on the impact of school re-openings on community transmission of SARS-CoV-2. The evidence on the effectiveness of different strategies to mitigate against transmission in schools is also scant.Reopening schools when community transmission is high may result in increased transmission: In Germany where community transmission was higher at the time of reopening, increased transmission among students was reported[1]. In South Africa where schools were opened before the peak, schools had to be shut down again for four weeks after a spike in local cases[2].
- Reopening schools when community transmission is low may be associated with reduced likelihood of increased transmission. In countries such as Denmark and Norway where schools were reopened when community transmission was low, reopening did not result in a significant increase in the number of COVID-19 cases[1]
- Most countries that have reopened have done so in a phased manner with some resuming classes for only older students or students sitting for final exams, and others asking students to come on alternate days/shifts, while others have maintained relatively normal school schedules
- Measures implemented to reduce transmission in school settings involve physical distancing measures (reduction of class size, increasing physical distance between students in classrooms, and keeping students in defined groups with limited interaction between groups), infection prevention and control (IPC) measures such as hand hygiene and mask wearing, and screening of students and teachers for COVID-19 symptoms

Introduction

As of October 1st, 2020, there have been over 34 million cases of COVID-19 and over 1 million deaths. As with other affected sectors, the pandemic has presented enormous challenges to education systems globally. The urgency to contain the spread of the virus led to immediate school closures with no time to develop strategies on when and how to reopen schools. By March 29th 2020, 183 countries had closed schools with over 1.5 billion learners affected (90% of enrolled students) globally. In Kenya, 15,257,191 learners have been affected[14] (Table 1). As the pandemic evolves, Governments must now decide whether to reopen schools and if they do reopen, how to ensure that they run safely. This brief presents examples of strategies adopted by some countries that have reopened schools and can be used as a guide by decision makers in Kenya.

Table 1: Number of learners affected by school closures in Kenya[14].

Kenya has a total of 15,257,191 learners affected	
Stage	Number of enrolled learners
Pre-primary	3,199, 841
Primary	8,290,450
Secondary	3,204,379
Tertiary	562, 521

Reopening schools: Weighing the risks and benefits

Decisions on school reopening need to be informed by best evidence (where present) and must take into consideration the public health risks of reopening schools, the effect of continued long-term school closures on students and their families, and the intricacies involved in mitigating the spread of SARS-CoV-2 in schools (Table 2). So far, evidence suggests that children and adolescents are at low risk of severe disease and death due to COVID-19[3].

In addition, school children may play a relatively small role in the transmission of coronaviruses[4-6]. However, there is little evidence on the role of schools in contributing to transmission and even less on mitigation strategies that are effective in school settings. Given this uncertainty, it may be useful to learn from other countries that have reopened schools and explore the guidelines that they have put in place to ensure safety and limit transmission.

Table 2: The benefits and risks involved in reopening schools

BENEFITS	RISKS
• Students receive the essential educational, developmental and social benefits of being in school • Reduce school dropout rates, especially for girls • Children who depend on school meals for nutrition will have access to regular meals • Inequities between students that have been further exacerbated will be addressed • Caretakers/guardians can resume work • Children are at a lower risk of developing severe disease • Schools going reduces early pregnancies and other forms of physical and sexual abuse for adolescent girls	• Risk of infection to students, teachers, family and eventually community spread of COVID-19 • Reopening requires immense resources to put in place infection prevention and control measures e.g. purchasing of masks, installing WASH facilities • Parents/Guardians refuse to take children back to school as they feel there's still a risk • Teacher shortages may be curtail reopening with new social distancing rules

Summary of COVID-19 school reopening strategies

Many countries have begun reopening schools using a variety of strategies (Table 4) at different stages of the pandemic (Figure 1). These strategies broadly include physical distancing measures such as phased reopening and reduced class sizes, infection prevention and control measures such as mask wearing, and hand washing and screening as summarized in Table 3.

Table 3: A summary of the different strategies used for school reopening

Objective	Approach
Physical distancing	• **Phased reopening** (Cameroon, South Africa, Botswana) • **Staggered start times/shifts** (Botswana, Germany, Belgium) • **Reduced class sizes** (Cameroon, Thailand, China) • **Desks set 1m apart** (Vietnam, Denmark, South Africa, Benin) • **Children put in bubbles/groups** (Denmark) • **Mealtimes regulated** (China, Norway) • **Different routes to/from class** (Cameroon) • **Dividers/partitions between students in class** (China)
Infection prevention and control	• **Mask wearing** (Mandatory in most countries (age of children required to wear masks varies in different countries) • **Handwashing facilities, sanitizers made available** (All countries) • **Regular disinfecting of schools** (All countries)
Screening	• **Temperature screening at entrance** (All countries) • **Symptoms screening at entrance** • **Testing in some countries** (Benin, Germany)

Table 4: A summary of school reopening approaches used by some countries

| Country	Date re-opening process begun	Phased/National reopening?	Who goes to school?	PPE	Screening of students and or Staff?	WASH measures?	Physical distancing/other measures	Number of cases at reopening
Benin	Since May 11	Phased	2nd year middle course, middle and high school students only	Masks mandatory	Teachers were mass tested; Temperature screening	Hand-washing facilities made available	Benches to observe the one-meter rule	319
Botswana	Since June 2; September 1	Phased	Forms 3 and 5 and year 7 opened (completing classes). All other non-completing classes resumed September 1	Masks mandatory	Temperature screening at entry	Hand-washing facilities installed; building additional toilets.	Physical distancing in classrooms and during meal times; school periods shortened; Morning and afternoon shifts	40
Cameroon	Since June 1	Phased	Only exam years returned	Masks mandatory	Students and teachers tested; temperature screening	Schools that lack water will be provided for; Schools disinfected 3 times a week	Not more than 24 pupils will be allowed in a classroom and only one pupil per bench; designated routes to classrooms	6397
Cote d'Ivoire	Since May 25	Phased; Greater Abidjan	preschool, primary, secondary and higher education	Masks mandatory	Temperature screening at entry	Hand-washing facilities and sanitizer gels made available	One student per desk	2423
South Africa	Since June 8	Phased	June 8: grade 7 and 12 only; July 7: grade 6 and 11; Aug 24: All classes	Masks mandatory	Temperature/symptom screening at entry	Hand-washing facilities and sanitizer gels made available; all surfaces cleaned before school	Physical distancing of 1.5 metres within schhols; schools operate at 50% of capacity	48285
Thailand	Since July 1	National reopening	All students	Masks mandatory	Temperature screening at entry	Hand-washing facilities and sanitizer gels made available; schools surfaces disinfected	Partitioning between students in classes; classes restricted to 20-25 students; alternate days of attendance	3173
Vietnam	Since May 18	National reopening	All students	Masks mandatory	Temperature screening at entry	Hand-washing facilities and sanitizer gels made available	Physical distancing in classrooms and within schools; shorter school times	231
China	Since March	Phased/sub-national reopening	Varies	Masks mandatory	Temperature/symptom screening twice daily	Hand-washing facilities and sanitizer gels made available; cleaning and disinfecting of schools	Class size reduced; desks broken up and partitioned; customized school buses to allow for physical distancing	82830
South Korea	Since June 8; localized shut downs due to rise in cases;opened again	Initially phased;	Initially only high seniors; eventually all students	Masks mandatory	Temperature/symptom screening	Hand-washing facilities and sanitizer gels made available; cleaning and disinfecting of schools	Class sizes reduced; desks distanced, students attend school in alternate shifts	11110
Denmark	Since April 15	Phased initially	Children upto age 12 initially	Not required	No temperature checks	Hand-washing facilities and sanitizer gels made available; cleaning and disinfecting of schools	Class size reduced; children put in groups of 12; staggered school arrivals; desks put 2 meters apart; no parents allowed in schools	6870
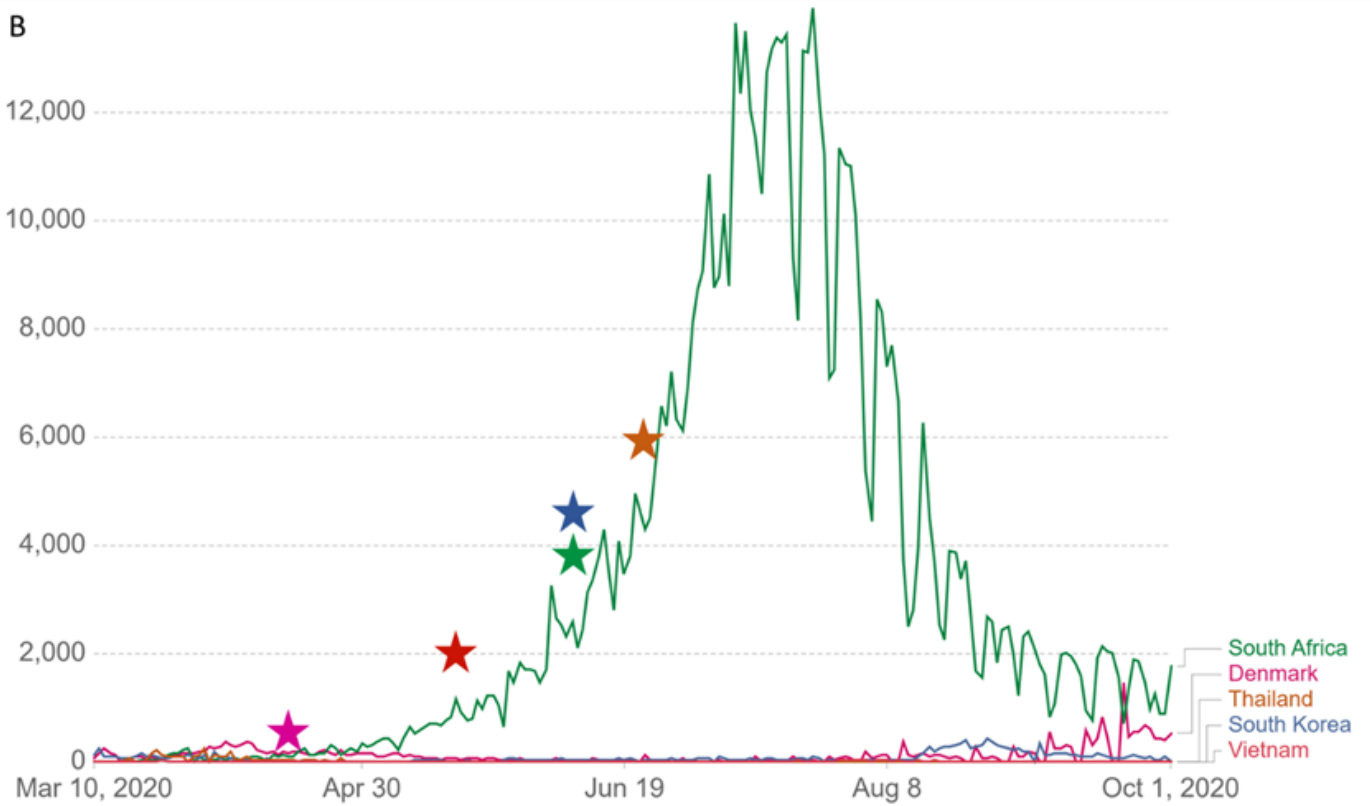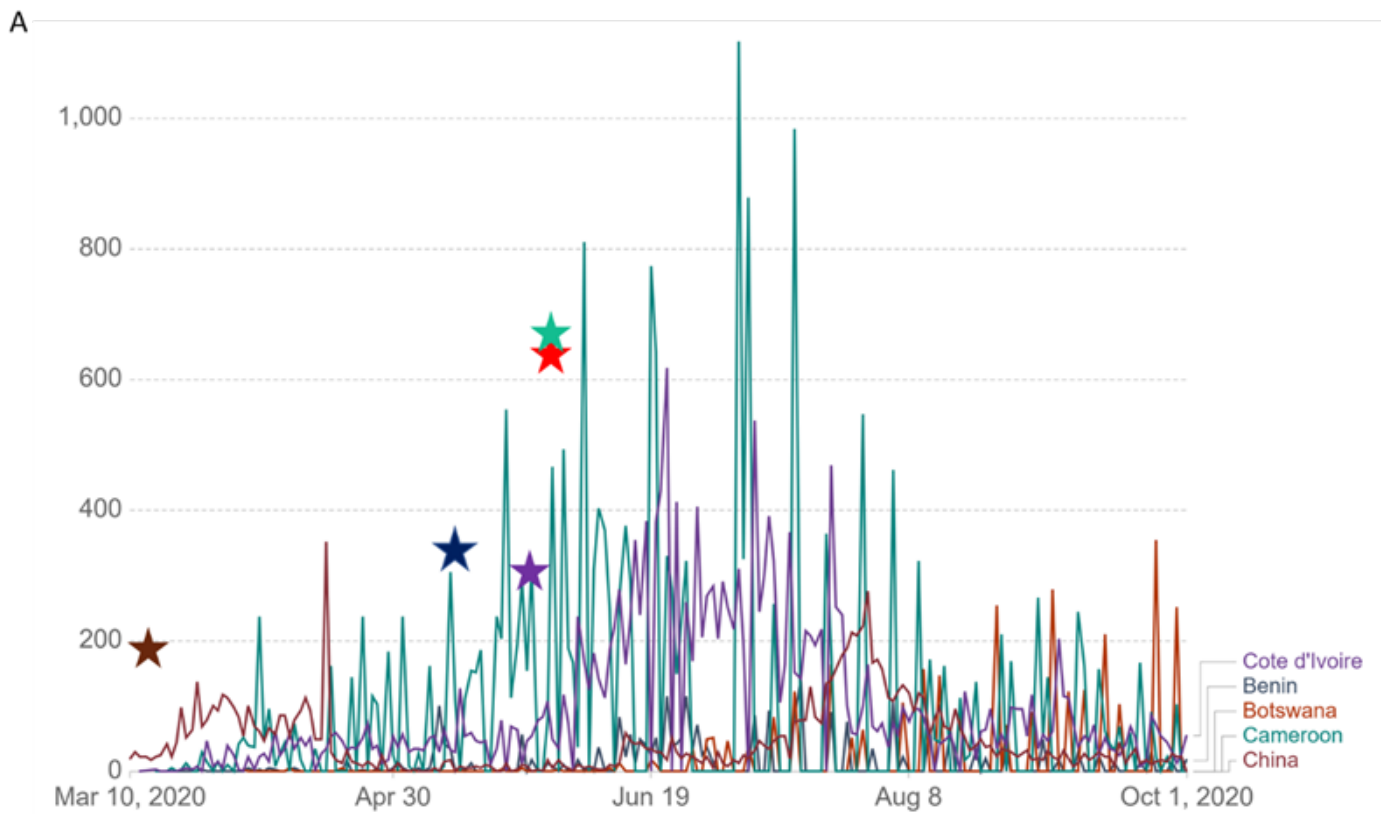
Figure 1: The number of SARS-CoV-2 cases in the 10 countries that have reopened as summarized in Table 4 from March 10th to October 1st. The stars indicate the date of school reopening in these countries and the number of cases they each had at reopening

Box 1: Israel's experience with reopening schools

Israel's Government ordered the closure of all schools as a response to the spread of COVID-19 on 13th March 2020. After a drop in infection rates, the Government initiated phased reopening of schools on 3rd May 2020. The first to return were kindergarteners, grades 1–3 and grades 11–12 in small groups that attended classes in shifts. All students returned on 17th May 2020. The measures put in place included physical distancing within schools, frequent hand washing, daily health reports for students and staff and face masks were to be worn by students in fourth grade and higher. However, 10 days later, the first case in a high school was reported. Ultimately, more than 240 schools were closed and over 22, 520 students and staff were quarantined. By the end of the school year in June, the government reported that 977 students and staff had been infected. Israel faced some challenges in implementing physical distancing in most schools where there could be up to 38 students in one class of about 500 square feet. In addition, when a heat wave hit the country, the Government withdrew the mandatory mask order for four days. Windows in classrooms were closed to allow for air conditioning which resulted in no ventilation within classrooms. When a second case, not linked to a first case, was reported in the high school, the Government ordered the closure of the school and all its students and staff were ordered to quarantine and get tested. Eventually, 154 students and 26 staff in the school were infected. Some circumstances may have promoted the spread of COVID-19 within schools in Israel. The quick resumption for all students rather than in a gradual manner which made physical distancing difficult could have played a role. In addition, the students and staff not wearing masks plus lack of ventilation in classrooms could have contributed to the spread of the virus. Further, a lack of contract tracing infrastructure meant that outbreaks within schools could not be quickly controlled. However, it is important to note that at the same time schools were reopening, other rules were being relaxed such as opening of malls and bars. Therefore, there could be more factors in play. On August 2nd, the government announced that they would reopen schools again. This time, the plan is to first return only grade 2 and younger students and introduce a mixture of distance learning and in person classes for grade 5 and above. A contact tracing system is also being set up within the Army to allow a quick response to outbreaks.

Experiences and challenges faced by countries that have reopened

Outbreaks in school after reopening: The experiences of reopening have differed between countries. In Israel, it was reported that schools were the second-highest places of infection for the month of June[7,8]. This prompted the Israeli government to shut down schools once again and rethink their strategy. A survey of 15 countries in Europe found that in six countries, COVID-19 outbreaks in school settings were reported; in five countries, it was reported that while individual cases in pupils and/or adults had been identified, there was no evidence of secondary transmission; and in four countries there were no cases at all[30].

Some countries have had to shut down schools after reopening due to a rise in cases within the community. In South Africa and the Capital of Botswana, schools had to be shut down after reopening due to a rise in cases (not within schools)[2].

In South Korea around 250 schools near the capital Seoul were closed just a few days after they opened, after a spike of 79 cases was reported within the community[31].

Lessons learnt so far

1. Community transmission at the time of reopening may play a role

Models from South Korea[9], Europe[30] and Australia[10] show that schools can open safely when community transmission is low. In countries such as Denmark and Norway where schools were reopened when community transmission was low, reopening did not result in a significant increase in the number of COVID-19 cases[1]. In Germany where community transmission was higher at the time of reopening, increased transmission among students was reported[1]. In addition, spikes in local cases has led to schools being closed in some countries. In South

Africa where schools were opened before the peak, schools had to be shut down again for four weeks after a spike in local cases[2].

2.Physical distancing, masks and contact tracing are important.

In Israel where more than 30 students were in one class, a large outbreak occurred. Students were in rooms that were not properly ventilated and not wearing masks. Additionally, Israel had at the time not put in place contact tracing infrastructure[7,8.] This led to a slow response to the outbreaks. A large school in Chile had more than 30 children in a class and were conducting parent teacher meetings had an outbreak just nine days after the country detected its first case of COVID-19[11]. It is also important to ensure that strong test and trace systems are in place before reopening schools. A modelling study suggests that a second COVID-19 wave could be avoided in the UK, if accompanied by a test-trace-isolate programme with sufficiently broad coverage[12]. Another study of 25 schools and nurseries in New South Wales, Australia found that the risk of children and staff transmitting the virus in these educational settings was very low when contact tracing and epidemic management is in place[10].

Implementation of infection prevention control measures

Temperature/symptom checks: how temperature/symptom checks are implemented varies between countries and between schools. In the US, some states have opted to use walk-through infrared scanners[29]. In Victoria state, Australia, schools are to identify the staff that carry out screening[28]. In a school in South Korea, students taking the school bus have their temperature taken by the bus driver. While in other countries (Thailand, Vietnam), teachers carry out temperature/symptom checks. However, the effectiveness of temperature checks for screening COVID-19 has been questioned as a significant proportion of infected individuals are asymptomatic[13].

Masks: In countries such as Canada, Denmark, Norway, the United Kingdom, and Sweden, mask wearing is optional while in all African countries that have reopened, mask wearing is mandatory. In Germany, students can take off masks when they are seated (observing distance rules)[26, 33]. The ages of students who are required to wear masks varies.

In France, mask wearing is required for children over 11 years old while in Spain, it's for children over 6 years old33. One barrier to mask use is availability of masks and the cost. In South Africa and Benin, the government pledged to make masks available for all students who needed them[18, 22]. Cloth masks that are reusable lowers the cost associated with purchasing masks.

Physical distancing: In many schools in Africa, overcrowding is a significant challenge in implementing physical distance. To overcome this challenge, several strategies have been used. Some countries have opted for staggered/phased opening of a few classes instead of the whole school to create more space (Cameroon, South Africa, Botswana). In other countries (Botswana, Germany, Belgium), children attend classes in shifts (different days of the week). Another approach is to reduce class sizes depending on the room available (Thailand, China, Cameroon). In addition, to minimize crowding at drop off and pick up times, staggered start and end times were implemented (Botswana, Denmark). In England and Wales, parents are urged to avoid lingering with other parents after drop-offs. In most cases, student drop off or pick up are done outside the school.

Washing and sanitation: All reopening plans summarized here have new provisions for washing and sanitation. Of the roughly 818 million children worldwide who lack basic handwashing facilities at school, more than one third are in sub-Saharan Africa[32]. This means that successful reopening hinges on the ability of schools/governments to provide adequate hand washing facilities in schools. In Botswana, hand washing facilities and extra toilets were built in schools. In Cameroon, water was provided for schools that lack water while in Cote d'Ivoire, hand washing facilities and hand sanitizer were made available at school entrances.

These requirements put a significant strain on low to middle income countries that lack adequate resources. Therefore, strategies must be developed with these issues considered.

Conclusion

While the evidence indicates that children are less likely than adults to become severely ill from COVID-19, it is still unclear to what extent reopening of schools impacts transmission of SARS-CoV-2. The examples described here give an insight into how different reopening strategies can be implemented. The measures that have been put in place are similar in many countries. However, their feasibility differ in terms of the local spread of SARS-CoV-2 at the time of reopening, resources available to implement transmission control measures and the testing and tracing capabilities of each country. Therefore, such factors must be considered while developing a reopening strategy in Kenya. As the pandemic is constantly evolving, it is important to ensure that these strategies are constantly reviewed and that adequate surveillance systems are put in place to identify any new outbreaks in schools. It is also important to incorporate contingency measures should an outbreak occur. Finally, the goal is to provide the best learning environment for every school going child with as little risk to SARS-CoV-2 infection as possible and this requires a paradigm shift to how things were previously being done.

This policy brief has been prepared by the KEMRI-Wellcome Trust and Ministry of Health Evidence Synthesis team

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