

AMERICAN PUBLIC HEALTH ASSOCIATION

and

THE NATIONAL ACADEMY OF MEDICINE

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RESPONDING TO COVID-19: A SCIENCE-BASED APPROACH

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WEBINAR #13: RETURNING TO K-12 EDUCATION-
USING SCIENCE TO KEEP CHILDREN, TEACHERS,
AND STAFF SAFE

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WEDNESDAY
AUGUST 12, 2020

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The webinar convened at 5:00 p.m. Eastern Daylight Time, Wendy Armstrong, Moderator, presiding.

PRESENT

WENDY ARMSTRONG, MD, Emory University, Moderator
CAITLIN RIVERS, PhD, Johns Hopkins University
Center for Health Security
DORTE LANGE, Danish Union of Teachers
DONNA MAZYCK, MS, RN, NASN, CAE, FNASN, National
Association of School Nurses

ALSO PRESENT

LAURA DESTEFANO, Director of Communications,
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5:00 p.m.

MS. DESTEFANO: Hello, this is Laura DeStefano, Director of Communications at the National Academy of Medicine. Welcome to the 13th webinar in the COVID-19 Conversations series brought to you by APHA and NAM.

Today's webinar is titled Returning to K-12 Education: Using Science to Keep Students, Teachers, and Staff Safe.

Today's webinar has been approved for 1.5 continuing education credits for CHES, CME, CNE, and CPH. None of the speakers have any relevant financial consideration check to disclose.

Please note that if you want continuing education credit, you should have registered with your first and last name. Everyone who wants credit must have their own registration, and watch today's event in its entirety.

All of the participants today will receive an email within a few days from CPD@confex.com with information on claiming credit.

All online evaluations must be submitted

by September 16, 2020 to receive continuing education credit.

If you have any questions or topics you'd like us to address today or on future webinars, please enter them in the Q&A box, or email us at APHA@APHA.org.

If you experience technical difficulties during the webinar, please enter your questions in the Q&A. Please pay attention to the chat box during that about how to troubleshoot.

This webinar will be recorded. And the recording and transcript will be available on COVID19Conversations.org. More information on the series and recordings of past webinars are also available at that link.

Before I introduce our moderator, I'd like to say a brief word about a new fast-track study from the NAM and the National Academy on equitable allocation of vaccines against COVID-19.

This study is sponsored by the NIH and the CDC. And will recommend criteria to help policy makers set priorities for the distribution of the

limited initial supply of COVID-19 vaccine when available.

The study will consider groups at higher risk because of health status, application, or living condition, as well as racial, ethnic, and other population level disparities among other factors.

Stakeholder input, especially from groups highly impacted by COVID-19, is essential to inform this study. A public comment period will soon be announced.

For more information, please visit the study web page at [Nationalacademies.org/COVIDvaccineframework](https://www.nationalacademies.org/COVIDvaccineframework). To be notified when the public comment period opens, please sign up for our COVID-19 and infectious diseases list serve at [NAM.edu/listservsignup](https://nam.edu/listservsignup).

And now, I'd like to introduce our moderator for today, Dr. Wendy Armstrong. Wendy Armstrong is a professor of medicine and infectious disease at Emory University School of Medicine.

There she is the Associate Division Director of Infectious Disease and the Vice Chair of Education and Integration for the Department

of Medicine.

She is a member of the Infectious Disease Society of America, and the HIV Medicine Association Board of Directors. Her research interests are in innovative methods of care delivery to vulnerable populations living with HIV, and in expanding the infectious disease and HIV workforce.

Dr. Armstrong, over to you.

DR. ARMSTRONG: All right. Thank you very much. I want to add my welcome to everyone to this webinar, which is on a topic that is absolutely central to the minds of every parent in the country right now, and on the minds of so many others.

In my home state of Georgia, we have seen reports of dramatic spread among participants in summer camps. And are witnessing really an ongoing experiment of school opening in an environment of significant community spread.

This, I believe, increases the urgency of understanding the dynamics of COVID-19 in our children. And the role these children play in transmission to adults.

New research with new data is being

reported on a near daily and certainly weekly basis.

I'd like to take a second to review the most recent data, albeit it still gives us an incomplete understanding, before I go ahead and introduce our speakers for this session to you.

Now, we certainly know that COVID-19 affects children. In fact this week, it was reported that there are a cumulative number, a cumulative number of cases of 380 thousand, 180 thousand of those have been reported within the past four weeks, since July 9, representing a 90 percent increase in cases among children.

In fact, the cases in children represent 9.1 percent of total cases in the United States as of August 6. But children represent 22 percent of the population.

There are -- they represent fewer than 3 percent of total hospitalizations on average, and fewer than 1 percent of deaths.

And while we know, we are learning about a new syndrome known as MIS-C, the multisystem inflammatory syndrome COVID-19, which is a, appears to be a sequela of COVID-19 infection, it remains

quite rare.

You can see in the graphic on the right that those states in darker colors that have had a greater number of cases in children, are also those states where we know that there is substantial community transmission currently. Next slide, please.

So, we know again, that children appear to be less effected then adults. But, how can we drill down on this data more closely?

I think some studies from other countries have given us a little bit more clarity. One of those is from Geneva that looked at a number of children ages five through nine, and noted that their risk of being COVID-19 positive, was 32 percent that of adults age 20 to 49.

So, a 68 percent risk reduction. However, there was no significant difference between children age 10 and 19, and the adult age group, 20 to 49.

This is the first of several points that I'm going to point out that the age of ten appears to be a bit of an inflection point with respect

to risk.

I think even more instructive is a large population study in Iceland, where more than 22 thousand residents were sampled. This was both a targeted testing strategy, as well as a screening strategy.

And they noted that children under the age of ten had a positivity rate of about 7 percent.

While those over the age of 10 were about double that, around 14 percent.

And you can see on the right, a graph showing increased risk of infection by year of age.

But the slope of that graph appears to become a little bit steeper after the age again, of about ten. Next slide, please.

So, why are rates lower in children? In young children? Is it that they have less exposure? That children were not in schools or having the same number of contacts as they were?

Is it that there's less testing in children? They appear -- they seem to be less severely ill certainly.

And we are also, we tend to test our

children, or put them through medical procedures less often. Or is it that children have some level of biologic resistance?

These are all areas of intense research right now. And there are hypotheses for each of these.

And likely, there is some combination of above. But again, some of these answers are, remain unknown. Next slide, please.

So, I think what we really want to know, is what's the story with transmission? And do children transmit less than adults?

In fact, multiple studies have found that children are the index cases in fewer than 10 percent of COVID-19 familial clusters.

But, I think this data became more clear recently when a very large series of contact tracing was released by the South Koreans a few weeks ago.

They traced 59 thousand contacts of nearly six thousand index patients over a three-month period earlier this year.

And what they showed was that if you are a household contact, you are more likely to

be positive, 12 percent of those contacts were positive, when compared to non-household contacts where only 2 percent were positive.

But what was really interesting for this question in this study, was looking at the age groups again. And they showed that the highest rates of transmission were seen when the index patients were in their teens, between the age of 10 and 19.

And that those patients, 19 percent of their contacts were positive. And in fact the lowest rates of transmission were when the index patient was under the age of ten, zero to nine years of age.

And only 5 percent of those contacts were positive. So again, it looked like an inflection point around the age of ten.

Well, is it that young children have less virus? And in fact the answer to that appears to be no.

This is one of a few studies that have looked at this. This is data out of the Northwestern Lurie Children's Hospital, where they looked at the PCR viral loads of 145 patients who had mild

to moderate disease, and were within one week of their symptom onset in an attempt to create a more standardized sample.

They split that group, or that group was split by age. So, looked at about 45 patients in each group, those under five, those five to 17 years of age, and those over 18.

And you can see in the group on the right, with the Y axis being CT values or cycle threshold values, what they sought.

Now recall that in PCR testing, the cycle threshold is inversely associated with the amount of virus. It takes fewer cycles of PCR to reach a positive, trigger a positive result if there is more virus present.

And in fact, that's what they saw. And that the children under the age of five had 10 to 100 fold greater viral burden than those children over the age of five.

And so, it is not -- children, young children do have virus present. And that's not an answer to why there may be less transmission.

Next slide, please.

So again, we are still searching for the question, and the answers to the question to help us inform school reopenings.

And so another way to look at that is to say, well, what happened when schools closed? Did that effect rates in the community?

And so this last study that I'm going to present to you today, was recently reported from Children's Hospital in Cincinnati. And these investigators sought to estimate the association of school closures with COVID-19 incidents using modeling techniques.

They noted that over ten days in March, all 50 states closed K-12 schools. Now, in fairness, at a very similar time, they also enacted other non-pharmaceutical interventions to slow the spread of SARS CoV2.

These investigators used an interrupted time series analysis. And they adjusted state by state for state specific factors that are listed here in this slide in an attempt to control the study as well as possible. Next slide, please.

And what you can see is shown on this

slide. Now, the two graphs at the top are incidence graphs. And the two at the bottom are mortality by states.

On the left in the black lines, you can see the aggregate results. And that -- and so what this showed was that school closure was temporally associated with decreased incidents and mortality.

And you can see that the modelers estimated that there were 1.4 million fewer cases, and 40 thousand fewer deaths with school closure.

On the right they split the states by quartile based on cumulative incidence. And they showed that states that closed earlier with lower cumulative incidence of COVID-19, represented by the three grouped lines in the graphs on the bottom, had the largest relative reduction in incidence and mortality.

So, school closure may have played an important role again, trying to tease out the issue of other non-pharmacologic interventions at the same time. Next slide, please.

So, with that backdrop, I think the question is, how do we reopen K-12 schools safely?

We all know that our children learn better in person.

But we also, I believe, have the same goal, which is not to bring our children back to school until we know that it's safe.

Today we have three outstanding panelists who are going to contribute their perspectives on this. They will tell us the recommendations on reopening schools from the recent NASEM report, and what we've learned since that report was issued, lessons from the Danish experience, and pandemic preparedness, the use of expertise already present in schools.

And so I would like to introduce those speakers to you know. I'm going to introduce them in the order that they will present.

First will be Dr. Caitlin Rivers. Dr. Rivers is a Senior Scholar at the Johns Hopkins Center for Health Security, and an Assistant Professor in the Department of Environmental Health and Engineering at the Johns Hopkins Bloomberg School of Public Health.

Her research focuses on improving public health preparedness and response, particularly by

improving capabilities for outbreak science and infectious disease modeling to support public health decision making.

Second, we will have Ms. Dorte Lange.

Ms. Lange is educated as a teacher for the Danish primary and lower secondary school systems.

She's been a union activist since 1996, and branch leader since 2001. She's been a member of the National Board of the Teachers Union since 2008. And since 2011 has served as the Vice President of the Teachers Union in Denmark.

Last, but not least, is Ms. Donna Mazyck.

Since 2011 Donna Mazyck has been Executive Director of the National Association of School Nurses, where she leads staff in optimizing student health and learning by advancing school nursing practice.

Ms. Mazyck has worked as a school nurse in high school and alternative school settings.

For 13 years at the Maryland State Department of Education, Ms. Mazyck provided consultation and leadership to local school health services and school-based health center programs.

In that role she worked with stakeholders in the

development of school health policies and regulations.

Ms. Mazyck also led and participated in inter-professional reviews of student services teams, and provided technical assistance to Maryland School Districts and schools. She holds current certifications in school nursing, counseling, and as an association executive.

So, let me turn it now over to Dr. Rivers, and have you kick things off.

DR. RIVERS: Great. Thanks for the opportunity to join you all here today. I am going to begin by describing some of the key recommendations of the National Academies committee that I participated in earlier this summer.

And then I'll describe how some of the recent research that Dr. Armstrong presented might inform those findings. Next slide, please.

This committee met primarily in May and June. And it was entitled Reopening K-12 Schools During the Pandemic: Prioritizing Health, Equity, and Communities.

And I think that title really captures

the charge of the committee, which was bringing together experts from public health, joined here by my own little one, from public health, epidemiology, and experts in school equity, to try to understand how best we should balance these considerations during what is a very difficult time for all of us.

And so again, we were represented by public health, by the school community, people experts in school buildings and school equities.

Next slide, please.

All right, there are a number of recommendations in the report. And Unfortunately, I don't have time to describe them all.

But, I do want to highlight a few of the ones that I think are particularly relevant to the conversation that we're having here today.

The first is around the decision to reopen. Excuse me, if you will pardon me for just one -- very relatable for 2020, I hope.

So, the first recommendation that I want to highlight is on the decision to reopen. And the committee noted what I think we have all come

to understand, which is that the decision to reopen must balance the risks and the benefits.

We know there are serious consequences of not reopening schools for in-person in learning.

Schools will deliver education in some form in the fall.

But in-person learning will not be chosen, or will not be possible for all districts.

And we know that there are consequences to that, because schools are not just where our children learn, they are also where children access services like meals, medical and behavioral support, and a lot more.

So, for going, that opportunity has serious drawbacks. But, we also know that there are serious risks associated with the pandemic, which is why schools closed in the fall in the first place -- excuse me, in the spring in the first place.

So, we do need to find a way to balance these different considerations. And that's what the committee took on.

But now onto specifics. The committee recommends that for districts that do reopen

in-person learning, we should be prioritizing younger children, particularly kids in grades K through 5, and students with special needs.

And that's a recognition of the fact that those populations are less, likely less able to engage in substantive in-pers -- substantive remote learning.

And they're in a different place in their social/emotional development. And would benefit more from in-person learning.

And so for districts that are trying to reopen a portion of their communities, those are the groups that we prioritized, suggest prioritizing. Next slide, please.

The second recommendation I want to highlight, which again, is not recommendation two, they're out of number, and I encourage you to pull up the full report if this is of interest.

But, it's around how school districts might approach that decision making process. We recommend that decision makers and education leaders should develop a mechanism to gather input from all sorts of stakeholders, not just school

administrators.

They also need to hear from representatives of the school staff, families, local health officials, and other community interests, because school reopening does not just affect children.

It also affects the teachers and staff who maybe at high risk of severe illness, the families at home who children are in close contact with, and the community at large, if it were to become the case, which would be the worst case scenario, that school reopening would accelerate outbreaks in the community at large.

So, we need to gather voices from all of those interest groups. And make sure that they are part of the decision making process around reopening. Next slide, please.

Another recommendation from the committee that I want to highlight is around equity and reopening. The committee very explicitly recommends that schools take into consideration existing equities within and across schools when deciding whether and how and when to reopen.

The plans the districts develop need to address disparities in school facilities, staffing shortages, overcrowding, remote infrastructure, learning infrastructure.

And this is in recognition of the fact that there are existing disparities across the school system, and that many of those same communities that are affected by educational inequity, have also shouldered a disproportionate fraction, or disproportionate burden of COVID-19.

And so we need to be very explicit in considering how best we can account for those disparities and mitigate them in any ways we can.

Next slide, please.

And around recommendation nine is a call for urgent research. There are a number of questions that we in the public health community, in the education community, continue to have around COVID-19.

It is a brand-new disease. There is a lot about it that we don't know. And those gaps make it difficult to make the most informed decisions like we wish that we could.

And so the committee calls for research that will provide the evidence needed to make those informed decisions going forward. The decision about how and whether and when to reopen will not be a simple decision.

This is a conversation that we will continue having through the fall, and potentially through the spring. And so it's really important that we gather those missing pieces around children and the degree to which they transmit SARS CoV2.

Around the role of reopening schools and contributing to the spread of COVID-19 in communities at large. And the role of airborne transmission in COVID-19, as well as the effectiveness of the current mitigation strategies.

These are just a few of the research topics that the committee felt were important to highlight as major gaps matters too.

Now, we heard from Dr. Armstrong that a lot has changed since the report was released.

And so I want to highlight how some of those new research findings might influence the way that we think about our report.

And again, this is -- I'm now representing myself. I'm not representing the, the committee process.

During the creation of the report, we were experiencing some of a nadir. We didn't know it at the time, but it was before the more recent surge that the whole country has been experiencing.

And so I think we need to take into consideration the fact that nationally our outbreak is not in a good place. Some communities are doing quite well. Particularly in New England and in some more rural communities.

But there are many places where the outbreak has resurged. And I think the single most important thing for reducing the risk of transmission in schools, is to link that to prevalence in the community.

Communities that have a lot of virus circulating, will have difficulty reopening safely, compared to districts where they have their outbreak more under control.

And so I think that needs, the level of virus circulating in the community needs to be

a serious consideration.

We also now have further evidence that children both can be infected, and are infectious.

Schools were among the first institutions to close in the spring.

And because children on average were sheltered at home relative to the lives they might have been leading a year ago, we were less able to observe what would happen when they went to school and they maintained their social networks. And so that is kind of the genesis of a lot of the gaps in our understanding.

But, as we have incorporated more community activities into our lives, and children have returned to childcare and to summer camp, and other countries have moved forward with reopening as well, we've been able to gather more information that confirms to us that children can be infected, and could even potentially be infected at rates similar to adults. And that they are infectious, particularly symptomatic children.

There are still open questions. We still have not learned everything we would like to about

SARS CoV2.

There are a lot of gaps around children who are experiencing asymptomatic infection, because it's very difficult to study, very difficult to identify.

It could still be the case that young children and children who are experiencing asymptomatic infection are less likely to transmit to others. But, we don't know right now. And so that's something that we need to focus on learning.

But taken as a whole, I think these developments really underscore the importance of careful decision making around reopening for in-person learning, and the importance of careful mitigation measures in the school buildings for communities that do reopen.

The worst case scenario would be, which we vehemently want to avoid, that we reopen schools, and that there are outbreaks in the school community and in the community at large.

And I think we need to prioritize making sure that we are keeping our eye on the big picture on our outbreak in the community as a whole, while

still prioritizing making sure that our children have everything that they need to thrive.

And so that's the difficult decision that we find ourselves in. I will end there. I will look forward to questions later, and I'll turn it back over.

DR. ARMSTRONG: Thank you so much, Dr. Rivers, for that fantastic overview. I'd like to shift now to Ms. Lange.

Ms. Lange, I'm very interested in hearing the experience in Denmark. I think the United States learning from what's happened in international sites that have opened schools and opened them successfully, is critical.

And so, please go ahead and enlighten us about your experience.

MS. LANGE: Well, thank you very much. And thank you for the opportunity of joining this webinar.

We are in, in Denmark in a situation where there are lots and lots of journalists from abroad are very interested in how we've been doing it.

I will say that we have very little situations where we are. We have reopened schools in a safe way. Lots of work for teachers, of course.

But, it has been done in a way that the, that everyone has actually been more or less felt safe in the reopening. So, if you can bring the next slide, please.

And also to tell you that the, in the beginning the title of my speech was lessons from Europe. And in Europe, the countries in Europe are very, very different.

And the different situations during the COVID-19 pandemic. And also different experiences.

So, my experience that I can bring on, more specific from Denmark, and I say that Norway and Sweden and Denmark have more or less the same way of tackling the situation.

So, it's a Nordic approach to, Nordic European approach to the situation. The next slide, please?

One of the very crucial experiences is that the whole reopening of schools were able to be redone because we had, as a nation, as a society

as a whole, has a mutual, we were in this together like, you know, and authorities and citizens were working together to stop the infection.

As you can see here on the figure, this is the numbers of patients in hospital due to COVID-19. And then on, around the time when schools reopened, around April 15, you can see how less people were hospitalized.

Around three hundred people. From five hundred to begin with, and now, and at that time, three hundred people in hospital.

We had the sort of the same profile on the figures of the people being tested positive.

And so that's a clear sign that it was going down at that point.

That it was somehow under control. That is one important, of course that's one important point in starting schools again. That we could actually see that it was, it was getting better.

And if you see at the end of the figure, around the, out present time, in August, it is a slight, a slight movement upwards. And that slight movement upwards has been a little increase in the

latest week or so. And I'll come back to that. And how it, how that is being done.

From April 15 until May 18, we had a partly reopening of schools. There were, the smaller kids, the smaller students from were kindergarten and up until fifth grade, were started physically back in school. And the lower secondary were still taught online back home.

The reopening of schools were on the background of a total lock down of society. No one was actually out.

We -- well, they were out, they were out shopping. But there were no, like the infrastructure and so on was more or less inactive.

So, this is the, this is the background of how it was done. And can I have the next slide, please?

And so many people have been asking, how could we do this? And as I said, it's a whole society approach to this.

And the, one of the key measures is that we are country based. Lots of cooperation. We have as our labor markets has been regulated by collective

policy agreements since 1899 when there was a huge big lockout in Denmark.

And there was a main agreement between trade unions and the employers saying that we are now going to regulate our labor market to, by collective agreements instead of legislations.

So, that also means that we are a country with a quite strong unions. For instance, our members, we have, we cover all teachers are members in our union.

We, and we have this tradition of finding our ways together nationally and locally. And that has been in the reopening of schools.

You must, you can see as a, I can get the picture of a government telling its citizens that we are now going to have to reopen schools.

And from the first people that they talked with actually, us and the leadership of the union, they invite us into discussions on how we can have teachers' considerations taken, and concerns taken into consideration. And how can we, how can we deal with these considerations.

So, that is also how we build on a mutual

feeling of trust. That is generally a feeling that is quite strong.

And it's also towards the health authorities. We have this, we have this situation where before the reopening of schools, everyone who was in a sort of a health risk group, like you know, if you have asthma or something like that, were advised to stay at home as much as possible, and avoid contact with the surrounding society.

But, at the reopening, they actually told us that teachers who were in some kind of health -- had some kind of health issues, could easily go back to school based on some of the figures that the children are not likely to bring on infection.

But we had this conversation with the health authorities. And telling them that this is, this is really making teachers feeling very insecure.

So, they shifted the advice in general to teachers saying that if you are in a health risk group, you should go and see your own doctor in order to get the advice of how should you, how should you be guided. And then your school leader had

to take that into consideration.

The reopening was in a framework of some clear guidelines from the centrally clear guidelines. From government and health authorities.

And then a lot of local autonomy to follow those guidelines. This is just the quote that security measures are not negotiable, is from our Minister of Education who said that to our municipalities.

Saying that those guidelines that we put out for making as much safety and security as possible, are not to be negotiated. And you cannot open schools until those are met.

It also meant actually that some municipalities pushed them before they didn't open on the 15th of April. They opened maybe on the 18th of April, because they wanted to be sure that all schools were able to meet the measures.

And then what had to be done was actually to make schools ready for having small groups of children, 10 to 12 children in each group with one teacher. And they had to be together more or less

the whole day, not meeting others.

As much reaching as possible had to be done outside. And then there was some strict rules about how often you needed to wash your hands. And you needed to be, if you're seated in the classroom, you had to be seated at least two meters apart.

Those were the quite strong guidelines.

And then there was some other guidelines saying that the freedom for teachers were actually more that, you know, you shouldn't necessarily follow curricula during this period.

You needed to have like, you know, didactic freedom saying that this group of children need this list in order to learn as much as possible in this period.

So, this is also what we actually now are looking back at. That we could see that many, many children were actually learning a lot more during this period.

And they were thriving better. They grew as persons in a better way, because it was smaller groups. Quality with one teacher and all

of that.

So, that's also some lessons that we now are learning on back, on the background with.

And then one other very important thing, it's as I said in the beginning, there was a visible control of the virus before the reopening of schools.

So, when some journalist asked me well, if you could do this in Denmark, why can't you just tell your colleagues in the USA and other places that they could just do the same as you did?

And I must say that I've been very clear in saying that we are, it is not possible to just transfer the situation in Denmark to the one in other countries if you don't have this whole society approach to back you up. Able to really make teachers feel safe.

But when you do that, you -- teachers are also able to make parents feel more safe. If teachers feel safe, then parents are also much more likely to feel safe about taking their kids to school.

And the last slide, please?

So the latest development in Denmark is, as I said, the infections are, the numbers are

going up a bit. But that is on the very uneven basis.

You can see those darker places, the very dark places in the middle of Zealand, a city with a large industrial slaughterhouse, there was infection spread in that, like that factor.

And also in the municipality there, the second largest city we have. There's also some sort of outburst of infection.

We've also learned that when some schools just see that maybe after the summer holiday, one teacher comes back and has the virus, is tested positive, and then they close down the school as they, until we have traced the infection, we don't open again.

So, we control those, the small areas of re -- of where the infection is getting higher.

We are thinking that it's controlled and traced and stopped.

So, that is how -- that's how it's approached now at the moment in Denmark. So, that was all for me. Thank you.

DR. ARMSTRONG: Thank you so much, Ms.

Lange. I think again, there's some really important lessons there for us to carry forward.

I'd like to turn now to Ms. Mazyck. Could you please talk to us about the role of school nurses in the return to school for the K-12?

MS. MAZYCK: Yes. Thank you, Dr. Armstrong. And we're grateful for the American Public Health Association and the National Academy for this opportunity to speak today.

On this first slide, we want you to understand that schools are settings where healthcare happens. And school nurses are front line healthcare providers in the school space.

So, we want you to understand what -- who school nurses are and what they do. And so on the right side of this slide, you'll see the National Association of School Nurses framework for 21st century school nursing practice.

This framework is comprised of five key principles. They are non-hierarchical, but they are the structure of what school nurses do in schools to keep students healthy, safe, and ready to learn.

I'll just go over those key principles

so that you'll understand this role. Care coordination, care coordination includes, but is not limited to, care management, chronic disease management interdisciplinary teamwork, student centered care, and student care plans, along with transition planning.

The key principle of leadership includes advocacy, education and healthcare reform, technology, policy development and implementation, as well as systems level approaches.

The key principle of quality improvement includes documentation and data collection, evaluation, meaningful health and academic outcomes, and resea -- a uniform data set.

Another key principle is community and public health. Here is where we hover on this topic of pandemic planning and return to school safely.

School nurses work in this key principle by focusing on access to care, cultural competency and humility, disease prevention, environmental health, health equity, health promotion, outreach, population-based care, screenings, referral, follow up, social determinants of health and surveillance.

And the last key principle that I'll talk about, is standards of practice. Where school nurses practice critical thinking, evidence based -- and evidence-based practice. Next slide, please.

So, what is the school nurse workforce in this nation? What you see before you, is a picture on the right of the United States and where school nursing is.

You will see that there is disparity in regions. And we also know that there's a disparity of school nurse presence in states, across states.

You'll notice that in the northeast part of our country, that there are more full time school nurses. So, full time nurses, part time nurses, or no nurses at all, that's what is depicted on this map.

As we travel west in the country, we see fewer full time school nurses. And indeed, more places where there are no school nurses.

To the left, you'll see that the study that was done for this workforce, shows that 25 percent of schools in our nation have no school nurse.

In addition, there are 35 percent of schools that have a nurse who is working part time.

Now that school nurse may work a few hours a week, that school nurse may share the services that he or she provides among two, three, four, sometimes fives schools. Next slide.

Before I get into this survey, I want to tell you about that school nurse workforce and who pays for it. The funding for school nurses is primary through local education dollars.

The study showed that 77 percent of school nurses are paid by local education. And then another 17 percent are funded by state funds. And health departments pay for about 11 percent of school nurses.

And that number goes down from there.

There are some federal dollars that pay for school nurses through Medicaid reimbursement, some hospitals and some foundations. Very limited fund school nurses.

On this slide, you'll -- what we just determined at the National Association of School Nurses, as we conducted this survey in the spring, after schools were closed but then reopened virtually

many of them, this study went out to -- was responded to by almost five thousand school nurses.

It covers school nurses in all of our states plus Washington, D.C. And 92 percent of them were front line school nurses. So, we got a really good snapshot of what happened for school nurses when schools went virtual.

What we do know from the study, is that whether schools open in-person or virtually this fall, student health services must be addressed.

And school nurses demonstrated how that would look, or how that did look in spring 2020.

So, here you see the role of school nurses during COVID-19. What did they do when students were learning virtually?

School nurses performed student outreach. That's one of their roles in community public health in school nursing.

Fifty-four percent of school nurses reached students who are at risk. These are students that have known physical or social needs that school nurses are aware of.

School nurses were also part of school

teams that delivered meals to students. School nurses are child health experts.

And they were able to provide resources and health information to parents in the community through phone calls. They were able to do virtual office hours for the students and for our families and for others in the community.

We also saw that some school nurses held virtual support groups for the students. And school nurses were part of staff, screening staff and others who were coming into school buildings.

Managing chronic health conditions was a large part of the work that school nurses did while schools were meeting virtually in the spring.

Schools, as I said, are a place where healthcare happens. And so students had medications in school, and they had equipment in school. And school nurses connected with parents to be able to return that, the medications and equipment back to the student and their parent.

School nurses developed student healthcare plans. So that there is a way in which schools -- schools are a place where students who

have health conditions, will have their needs met will be safe in schools.

So, school nurses worked on those plans and updated those plans during their time when school was meeting virtually.

And some of them had to help students manage their health conditions. And they would do that telephonically or in some kind of virtual way.

Education was a big part of what school nurses did while they were working virtually with families and students. They were educating staff on COVID-19, and mitigation strategies.

They were providing linkages to local health department information. They were also providing classes and videos.

School nurses got very innovative and creative, and taught students how to use face coverings. And to make sure they were washing their hands properly.

And making sure that they understood why they were doing what they were doing. And some of that education was health promotion as well.

Next slide, please.

Now, we -- as school nurses, would they be prepared for an outbreak that would be applicable to the new school year, the time that we're in right now.

We wanted to know what supplies did they have? What did they have in terms of personal protective equipment on hand, at that time, while they were in school in the spring?

And the data here is very clear, that personal protective equipment was not in abundance in school settings. And so we know that school nurses as front line healthcare providers, need that PPE to provide the services that they would have. So, -- have to do in schools.

And so this was a concern. And so this concern continued throughout the summer. And has continued as schools have had conversations on whether or not they will open in-person or virtually.

There's still difficulties with this as school nurses are asking about their PPE. Slide five, next slide, please.

So, what I want to speak to you about

right now is, what it looks like to reopen schools.

The speakers before me laid out a lot of the information that's really important to consider before opening schools.

And I want to bring out that in a pandemic, we need a pandemic readiness plan. And it's absolutely essential that as schools are planning that they include this in their plan.

Now, we know that schools have talked about valuing health and safety in the school community, and that is so important. We do know that the age distribution of school nurses over age 50, closely tracks with that of teachers.

So, you have teachers, school nurses, and other staff, who maybe at higher risk of serious illness if they contracted COVID-19. And they're concerned about that.

And It's important to, and consider that value for health and safety for school staff, for students, and for their families when conversations about opening schools are underway as they are now.

So, planning with inter-professional and interagency participants is absolutely crucial.

Now, one group who is part of the school, the school nurses, absolutely have to be in the planning of conversations and in the development and implementation of mitigation around pandemic issues.

And having local health departments onboard is also important. It needs to be embedded in the school plan.

All those plans that are informed by the local health department and the school nurse really need to really depend on the community disease.

What's happening in the community?

School nurses lead and coordinate infection control in schools. And there are infectious issues that happen in school even in times that are not COVID related.

And so, it's important that that information is planned in an inter-professional and interagency way.

The focus on science is absolutely crucial. We need to follow the science and the evidence when making decisions on how to open schools, and what to do when schools are open in-person.

The science and evidence on the role that ventilation has in school buildings, as related to COVID, is absolutely essential to follow. The other mitigation strategies that are evidence-based, must happen.

Now, it was interesting to hear from Ms. Lange how the value for following the authorities around the science, was a value in her school and in her school district.

And I believe that science and that evidence-based perspective has to be a foundation for the pandemic planning that happens in schools.

Also necessary, is the equity lens. School nurses, school counselors, school psychologists, school social workers, and other school staff who support students, especially in the student services departments of school districts, they know the students who are vulnerable.

And they know who needs help. And whether schools are open in-person or virtually, they are there to provide that help.

And so, it's absolutely essential to know what students are homeless? Which ones need

extra help?

Which students have had concerns and insecurity, whether it's related to food, whether it's related to how they are -- how they access adult supervision?

All of this is important to include in the planning. And making a plan so that it's -- so that that is taken care of.

I heard a story, a rather poignant story about a student who had ended up having to take care of her family. Both her parents had COVID.

And she had young siblings. And those young siblings required a lot of care. And she needed money for food.

Because they had counselors and school nurses calling these families to make sure that they were taken care of, they were able to meet her needs through community resources.

The other considerations are the social, emotional, and mental and behavioral health needs of the school community. And that would include students who are now facing new or increased social, emotional and mental health challenges due to the

uncertainty, grief and fear brought on by this pandemic.

Although schools did their best to meet those social, emotional, and mental health needs of students in a virtual format, there are still unmet needs.

And the return to school itself in-person or even virtually, may create fear and anxiety for students, for their families, and for staff. And those needs will have to be addressed.

Additionally, schools cannot plan and implement health and safety -- the health and safety portions of their plans alone.

We believe that significant federal funding has to be infused into states so that schools and school districts can afford and pay for, what is necessary in order to safely reopen schools virtually and in-person.

There have been conversations about the role school nurses can play in COVID testing and contact tracing. There are schools in, or school nurses throughout the nation who in the spring and the summer, were part of contact tracing teams

with local health departments.

And they did the training. And they were able to do that. The challenge is, with school in session, again, either virtually, or in-person, school nurses have a workload, as I've explained to you, school nurses have roles that they play whether schools are in-person or virtually.

And they have to do those roles. So, the question is, how can schools get the help they need from their community, be it local health departments or other health authorities, so that there can be contract tracers that the school nurse can collaborate with, but who would help in terms of mitigating disease.

One of the school nurse leaders that I spoke with, said school nurses are the calm in the midst of the storm. Giving evidence-based information to families and to students and to school staff.

And that role is so vital during the time, well, during the times that we're in right now. Next slide, please.

So, what are the opportunities, what

are the challenges that face school nurses right now and schools?

And we believe that some of the challenges, as I mentioned before, is the emotional state of school staff and students and families.

The anxiety, the fear, not knowing what's happening. Not knowing what to do. Again, whether they're learning virtually or learning in-person, that has to be addressed.

The lack of PPE and facility readiness in a school building for isolation, for proper ventilation, is a concern. And it's a challenge that needs to be addressed.

We do know that one size does not fit all. And the same school district throughout this country, all different school districts may need plans that work for them.

But they need the guidance that allows them to make the plans that they have to have to make their communities healthy and safe.

Opportunities we see are schools working closely with local health departments in pandemic planning and intervention. School nurses leading

and coordinating disease prevention and surveillance.

And again, there's opportunity for federal investments to make sure that there's a flexibility for schools, for states to provide schools with what they need to address this pandemic in an equitable way. Thank you.

DR. ARMSTRONG: Thank you so much. We have many, many questions for each of our panelists. And we won't begin to be able to get to them all.

But I'll start with one that I have been asked repetitively, and has come up frequently here today. And I'll toss that to Dr. Rivers first, although I'm curious for others to chime in.

I have been asked, how do parents know, and what, you know, what metric should guide parents and administrators for when it's safe to open schools?

What metric should they be looking at? And is there a community transmission metric that one can turn to in times like this?

And is it different for younger children and older children?

DR. RIVERS: Sure. This is a difficult

question, because there's no official guidance.

CDC for example, has not said anything about what sorts of metrics we should be considering, or what triggers or thresholds there might be.

But there have been a number of academic groups that have proposed thresholds. There's no consensus around which ones we should consider.

But, I can point you to a few benchmarks.

I think the two indicators that communities should at least begin with, are the percent of tests that come back positive, and the incidents, or the number of new cases per day.

For test positivity, I think a good first goal is test positivity below 10 percent. And a preferred goal is below 5 percent.

And that indicates that there is enough testing available to find a lot of the people who are sick. Which enables communities to do things like contact tracing and asking those people and their contacts to stay home.

So, test positivity below 10 percent first, and then below 5 percent preferably. Incidents or the number of new cases per day is

more difficult. I think there's a lot more variability around the kinds of thresholds that have been proposed.

I think on the high side, I see numbers in the neighborhood of 25 cases per 100 thousand population per day, as when communities might start to think about reopening, or reopening in some limited fashion.

And then once you get more in the neighborhood of 10 cases per 100 thousand per day, things start to -- there tends to be more groups recommending that as a threshold.

And then certainly below one case per 100 thousand per day is where a lot of groups propose are agreeing.

So, those are not magic numbers. Like you are at nine, it doesn't mean that you're in a different place than you are at ten.

So, I just offer those to give communities some sense of what triggers and thresholds are out there.

DR. ARMSTRONG: Can I ask a quick follow up? One of the questioners asked, at what level

do you look at?

Is this a district level? A school level? A county level? A state level?

DR. RIVERS: So, in terms of political decision making, most states have delegated that decision to school districts.

Now, the challenges that public health metrics are often not reported at the school district level. They report it at the county level, and sometimes even at the state level.

And so we do have to have a little bit of flexibility about what we, how we define a community, and how we incorporate these different metrics into our thinking.

But, it's usually the school district that decides, and then the county or the city, if that is an independent jurisdiction, that reports on the public health side.

DR. ARMSTRONG: Ms. Lange, were there metrics like this used in Denmark? Was there a benchmark that schools were waiting to cross before they opened?

And then I have a follow up for you.

MS. LANGE: No. As I showed you, Denmark is quite a small country of 5.8 million people, you know.

So, the general, well, the measurement, well how you listed how many people were infected, were done nationally in ours. But that is also, you know, that's a small, a smaller area.

I think what is important is that to give schools or local communities, give them the autonomy too actually, to act if infections go up again.

So, if you have, you measure them and you see that this is going, getting worse, then you can actually step in and do what is needed to be done to trace the infection.

So, of course that also means that you need to have lots and lots of testing equipment.

And it's crucial that everyone who feels in the group, still can go and get tested quite easily.

So, and that is available now in Denmark.

DR. ARMSTRONG: Was there any screening of all students, sort of including asymptomatic students? Or was testing largely reserved for those

who were symptomatic?

MS. LANGE: Yes, testing was in the beginning, reserved for those feeling, with symptoms. But it is also now possible for everyone to go and get tested and testing is more and more common, so lots of people are tested and, luckily, not so many are positive.

DR. ARMSTRONG: So, I think one of the big questions that many of our listeners have, looking at the U.S. versus Denmark, is that certainly here, many of us are in districts where there are demonstrations both to close schools and to open schools.

Was there any social or political pushback to public health measures in Denmark? And if so, how was that managed?

MS. LANGE: Well, there was, in the beginning, when schools were announced to reopen, some parents had some groups on Facebook and stuff saying that my child shouldn't be a guinea pig to this whole situation.

But as I said, when schools actually got in place and met those security measures that

were put up from government and it was clear to everyone that the teachers were actually feeling safe in going back, then there was this feeling of securement, more and more and more was spread.

So, that is -- yes. So, there was not like that protests. But that is also due to the control of the epidemic in Denmark.

DR. ARMSTRONG: Thank you. Ms. Mazyck, you mentioned that 25 percent of school systems don't have a school nurse, and many, in another 35 percent or so are part-time nurses, school nurses.

How do we ensure equity, as you mentioned, with opening schools and how do schools without school nurses manage?

Is there a way to have school nurses bridge through multiple schools within a district or other strategies, innovative strategies that could be run by school nurses for places that don't have someone onsite?

MS. MAZYCK: That's a great question. There are very different models of school nursing within those nurses who are in schools, and some of those models are a nurse in every school.

It's difficult to hand off the clinical judgment and the assessment that's necessary for this mitigation work. Certainly, school nurses are doing a lot of instruction on isolating, what that looks like, and quarantining, what that looks like.

I really do believe that if you need that health leader in a school, you have to work out a way in which to do it, and I believe some school districts are trying to do that. I believe they need help in order to do that, and that help comes through being able to have the nursing staff there that they need.

DR. ARMSTRONG: And one of our listeners asked, what are the best avenues to advocate for school nursing, for more funding?

MS. MAZYCK: Right. So, it happens on every level. Federally, the National Association of School Nurses has been advocating throughout this pandemic, and even did a petition that over 15,000 people signed onto that we delivered to the White House.

On the state level, that's where

education funding and health funding is distributed from. And so, doing that advocacy on that level, also locally.

But I think more than any other place, it's really helping the community to know who school nurses are, what they do, and to ask the question, in a health crisis, with the pandemic, would you want to not have a school nurse to help lead and coordinate the infection control work that's done?

DR. ARMSTRONG: Good question. Dr. Rivers, you have now been outed as being a parent.

I wanted to ask you, you talked about community metrics, but as a parent, what other kinds of measures are you going to look for as you make a decision about whether to send your children back to school?

And then, similarly, on the flip side, what would you lead you to recommend to administrators that maybe schools should be closed?

DR. RIVERS: Yes. I think the special element for families in particular is whether there is someone at home who is more vulnerable to severe illness.

For children, that might be kids with

underlying health conditions, I would recommend that you speak with your pediatrician about what health conditions might make a child high risk.

But also, the other family members at home. Are there older adults in your household? Are there people who have underlying health conditions? Like obesity, diabetes tend to be linked to more higher severe illness.

Those -- the presence of those conditions in the household might raise my concern about sending a child to school, because what we don't want is for a child to go to school, get infected.

Children, thankfully, are at very low risk of severe illness, so I wouldn't be, I'm not so worried specifically about the kids, if they're otherwise healthy, but about bringing it home and infecting vulnerable family members. And so, I think that is an important element of decision-making for families.

And then, also, just your home situation.

If you have parents who must work outside the home because they're essential workers, it might be difficult to pursue in-person learning, and

particularly for the young children, and that kind of circumstance would weigh in favor of in-person schooling or in-person care.

In terms of closing again, I think there's a couple different scenarios that schools would consider.

The first, if there is an outbreak or if there is onward transmission in the school building. I think a single case does not necessarily warrant school closure, if there is no spread from that single first person to other community, school community members.

I think that stands apart from if you are seeing a second and third generation of cases.

That might warrant at least a short-term closure, if not a longer-term closure.

What would raise my concern for a longer-term closure is if there is a change to the local burden of disease, such that there is now a lot more virus circulating and it's no longer safe to keep the school open, just because so many children by statistics alone would be expected to arrive at school infected.

DR. ARMSTRONG: And Ms. Lange, could you pick up from there? I know that there have been some cases of children in schools in Denmark that have been positive since your original reopening, how have those been handled and has it led to transmission within the schools that you've seen?

MS. LANGE: Well, we cannot say that schools have been a point where infection has been transmitted. We can say that there's been some students being tested positive and there's also been a few teachers been testing positive.

But we have not been able to trace that they were actually infected in school. But nevertheless, it has also been possible to actually isolate those infections.

So, I must say that the way that it's been handled in Denmark means that schools have not been transmission places, in the way that you could have feared it to be.

It hasn't been that, but it's due to the total lockdown and to the control of the epidemic in the first place. If you don't have that, then I wouldn't suggest that you just open all schools.

And it's also still, it's very important that schools, local authorities have the authority to actually close down the school again, if infections are back.

DR. ARMSTRONG: Thank you. I think that one area of concern by a few responders or listeners has been that we've talked a lot in broad strokes about things to look for or ways to sort of try and structure schools, but that implementing all of this is hard.

I think, Dr. Rivers, maybe you can take this, are there any toolkits for implementation or guidance or ways to help teachers understand how to do these things or administrators that are more granular? Because I think it's easy to speak in sort of broader strokes.

DR. RIVERS: Yes, I know this is a complicated area for schools. I know that the list of possible mitigation measures is quite long and it can be difficult to understand which ones are of highest priority.

I would suggest that de-densifying classrooms and minimizing the number of contacts

that children have with each other and with teachers is one important strategy for reducing risk.

I also think that universal masking, both by teachers, staff, and by students, is important to reduce risk in the classroom.

And I think other mitigation measures are around hygiene and ventilation. Ventilation in particular is a new change in our understand of what mitigation measures are important in the classroom.

But again, I think de-densifying and mask use are the two that I would turn to first.

DR. ARMSTRONG: Then, can I ask you a followup? And then, I'm going to have Ms. Mazyck sort of follow that up.

Which is, many people have discussed symptom screening as students come into schools or temperature screening, I know the CDC has not supported that, although many businesses and universities and so on are doing symptom screening.

What do you feel like the role is there?

And then, I'll bounce that to Ms. Mazyck to talk about how can school nurses, are there even

enough school nurses, or what kind of a role can they play for screening?

DR. RIVERS: Most of our understanding of whether temperature screening works comes from data collected in airports, screening passengers who were returning from overseas to identify people with a fever.

In that setting, it does not work particularly well. It's fairly rare that we find people who are sick, even after screening millions of people.

And so, that would suggest that temperature screening is not going to be a particularly effective strategy in this setting, particularly because children often do have asymptomatic or very mild infection.

But, in some respects, it's a fairly easy mitigation measure to implement. I know there are some educators who will disagree on that point, and if that's your circumstance, then certainly.

But compared to changing your HVAC system, for example, it might be relatively easy to implement. And so, I think that weighs in favor

of implementing it. And so, whether schools identify this as important to them, I think there's flexibility in that decision.

MS. MAZYCK: And I will follow up with that and say the word flexibility is what I've heard and seen in terms of symptom screening.

So, one of the challenges and opportunities before us is the confluence of the flu season. And students who are not necessarily up-to-date on their routine vaccine-preventable disease immunizations.

And so, being able to do symptom checks is something that will happen. How that happens as part of COVID by itself can look very different.

And I've seen that some school districts have decided that the staff, the adults, do their own self-screening and that some have done screening of children through parents. But that is something that the school nurse is there assessing and making sure that students with symptoms are checked out.

And I think it'll be a case-by-case situation, is how they handle that, the volume of symptom screening for a 3,000-student high school,

for example.

DR. ARMSTRONG: Yeah, no, I agree, and I think it's going to be even more challenging when we are in just regular common cold, respiratory virus season, with runny noses and so on. I think it will be tough.

So, Ms. Lange, in the spirit of that, one of the challenges here is that if students have some symptoms and perhaps should stay home, oftentimes, their parents may be essential workers who don't have the opportunity to stay home and care for those children and there's a pressure for the kids to be in school, simply for care purposes.

What's the situation in Denmark? Are there negative -- are there factors that reinforce sending kids to school who may have some minor symptoms or is there some kind of allowance for parents to keep kids at home built into the system?

MS. LANGE: There is allowance, that's part of the national agreements that we make, trade unions and governments and authorities. There are allowances for staying back home for the first day of illness of your child, you can do that without

getting a pay cut.

And we have also made some special agreements during the COVID-19, saying that we have extended that. So, if you have people in your family who are vulnerable in any way, then you have an extended allowance of staying home.

And I must say also that the ability of making a lockdown of a society in the beginning is also, that we can do that in Denmark is also due to the social security system that we have, that people can actually stay back home when they're told to, they don't have to go to work in order to get food.

So, we are, in that way, as I said, it's a whole national approach, it's a whole society approach to this that is necessary. Yes.

DR. ARMSTRONG: Ms. Lange, did Denmark do anything wrong? Like, are there any lessons learned that you wish you'd known in advance that you would do differently now?

MS. LANGE: Well, yes, there are some discussions in Denmark about was the lockdown too firm, was it too much, was there too much of a lockdown?

And the people are trying to say, some people are saying that, the critics are saying that, that was too tough on economy, that we had this total lockdown.

But I think, in the long run, I think we do agree and there is a whole lot of support from everyone to what the government has been saying, a very big majority of people in Denmark are agreeing and supporting the message.

There has been some discussion also about people, old people in elderly homes, in caretaking places, who has been locked down for a longer time than anyone else, there are no visitors and all that.

So, old people with dementia or anything like that, they are very confused, they don't know why their family are not coming. And that is some kind of issue that we talk about.

DR. ARMSTRONG: Dr. Rivers, you mentioned a little bit sort of research priorities at the end of your discussion.

If you, however, had limited resources, what do you think are really the key areas of research

that are necessary for us to set us up well for Spring 2021, assuming that, for those schools that are staying at home for the fall semester, they want to return in spring?

DR. RIVERS: I would emphasize, too, on the public health side, and I think there's another set of education-related research questions that should also be prioritized.

But on the public health side, I really think we need to better understand the nuances of children and infection and transmission. We know very little about asymptomatic infection in children.

We don't know whether they are as infectious as adults or as older children. We don't know if there are any long-term consequences to asymptomatic infection in children.

And we don't really know how many children are asymptotically infected, because they're hard to observe. But I think the answers to these questions will really inform our understanding of risk.

We know from the experience of influenza

that schools can be really drivers of the outbreak community-wide. Influenza really amplifies in schools and can contribute to the overall burden in the community.

If that is the case for COVID-19, that would kind of give us pause, in terms of reopening for in-person schooling.

But if it is the case that children are less infectious than adults, particularly, again, asymptomatic infection, that might mean it's safer to open schools than kind of our understanding that we have from influenza. And so, I think that's an important one.

And I think another, a second important area of research is the relative contribution of the current mitigation strategies.

We are asking schools to do an awful lot to make the building safer for students and teachers and staff and family members at home. I think it's all very important, but it's very difficult and it's very costly for schools to implement and continue to enforce these kinds of mitigation measures.

And so, I think if we can build out our understanding of what is most important, then we can really start to focus on those things that we know work best.

DR. ARMSTRONG: Ms. Mazyck and Ms. Lange, you guys have both spent your career around students, young students.

How realistic is it to expect or how can you control the behavior, particularly of younger kids, who may have difficulty wearing masks, who may have difficulty social distancing, who may want to be in everybody's business? Do you think we can be successful in those measures?

MS. MAZYCK: Well, we could talk about some public health ways that children grabbed onto very quickly. I'll bring to mind the coughing in the elbow. Depending on the age, it's a developmental thing, young children sometimes will learn these things.

But we have come into a pandemic that is changing how we do things. We need to wear face coverings, we need to wash our hands, we need to watch our distance.

And I think we need a kind of public health communication strategy that we all do that for each other, and children will come along with that at some point.

It will be tough, developmentally, we understand that. And sometimes, the developmental challenges are on the side of young people who are coming into their own, so to speak, in what they want to do.

But I think it's worth a strategy. We're in a different place. We're talking about Spring 2021, life has changed, and we have to lead with that and trust that we'll make that change together as a society.

DR. ARMSTRONG: Ms. Lange, any comments, in your experience, getting kids to sort of behaviorally stay with the program?

MS. LANGE: Well, it was actually quite nice to see how children really, they accept this fact that they have to wash their hands every hour and a half. They just line up and they queue in and they start, they wash their hands. They've been instructed very carefully how to do that in

a proper way and all that.

But of course, that was also a question that our health authorities were given, in some of the TV programs or TV-transmitted press conferences, very often with our government and the guys from, the leaders of the health authorities.

And one of them was asked whether, how exactly about this, how can we control children's behavior in this way? And they will hug each other, they will be together, they will play closely and all that.

And then, he said that the calculations are made on the basis that we are dealing with children and that they should not be restricted, as long as we keep them in smaller groups, as ten to 12 children in a group, so we can still trace if there is any infection going on.

So, we've not been -- if they're seated in the classroom, then they're seated two meters apart. But in the breaks and all that, then they're together in the small groups.

DR. ARMSTRONG: Dr. Rivers, I think we have time for maybe one more question. I'm still

very nervous, personally, about issues of equity, which I know were mentioned in the NASEM report, where I think that it's possible that the divide between our haves and have-nots could get worse.

Can you comment on that and how we might avoid worsening our inequities in this country further?

DR. RIVERS: Certainly, I can focus on the public health side, and then, I would defer to my education colleagues for more implementation.

But we see that there are very serious disparities in how COVID-19 has affected particularly people of color, immigrants, older adults, and we do need to consider very carefully how we are arranging or making do with our education system in the fall and how that intersects with those disparities.

We see that Native American populations in the United States have hospitalization rates that are about five times higher than White Americans.

Black Americans have hospitalization rates around four and a half times higher, and Hispanic people as well, around four and a half times higher.

And so, there are very serious disparities and I think it's critical that we attend to those when thinking through educational equity.

Now, how we arrange our school year to attend to those, I think I will leave that to my education colleagues.

But I just want to call again on the recommendation that the committee put forward related to equity, but also that we need to be inclusive in the way that we devise solutions to these problems.

We should be inviting to the decision-making table the communities that are most heavily affected. And I think that is one process way to make sure that we are able to make smart decisions around this very difficult question.

DR. ARMSTRONG: Any comments from our educators about equity?

MS. MAZYCK: This pandemic has brought to light something that's been, so health inequities are not new, this pandemic has absolutely multiplied what's going on.

I would say it's time and it's time that

all, the health, the education, public health, that all involved really come together in the ways that make a difference.

I don't have a solution for how education would change, but I would say it's time to begin to look at innovative ways to address those inequities.

MS. LANGE: Yes. And if I may follow up on that, I will say, we have clear evidence now that the online teaching, it is okay in families who are supportive of their children's education.

And that families, our members are saying that there are one or two or maybe more students in every class that they have not had any contact with during the lockdown, because they were not logging in, they were not on the online education.

So, of course, this will actually increase inequity, if we had to continue this.

But I would also -- we also learned a lot about the reopening with the smaller groups and one teacher and maybe not so many lessons, but lessons that are actually taking into consideration the very needs that those children have in this

group, what should I do to actually move them on?

That is another way of looking at education and maybe also helping children who are not so familiar with the education to actually grow during school.

DR. ARMSTRONG: Thank you all so much, I think I need to wrap things up. This has been a fantastic discussion, I think you've all taught us a lot.

There are more highlights than I can list, but a few of them would be that, first off, I think we know that community transmission is really a key to these reopening decisions. And when community transmission is low, then you can have effective contact tracing, for example, or effective other measures that can make opening schools safe.

I think Denmark has shown us a pathway to do that. But I think another highlight from the Danish experience has been that collaborative decision-making model, with all people who are stakeholders really at the table and invested in making decisions.

I appreciated the comments that when

teachers feel safe, then parents feel safe, and I think that's actually really, really important.

I think we learned that we need more research into the role that children play in transmission. I think it's hard to tease apart if what we're seeing with lower rates in children is due to them being socially distanced and what will happen when we reopen schools, and that, that's a priority.

I think that federal funding is necessary, both to ensure equity, but also to make sure, for example, that we can have resources within our schools, like school nurses, who clearly can play an incredibly critical role, but are, it sounds like, deeply underfunded across the country, such that we don't have uniformity of our school nursing coverage, where, again, health professionals within the school could play an absolutely critical role.

And finally, I think it's absolutely necessary that we have community buy-in and we're all pulling in the same direction. I think that, from what we've heard and what we've seen, that our community being fractured about the right way

forward leads to fractures in our systems as well.

And that if, in fact, we all can work together and work to control community spread as well, we'll be more successful in ensuring the future for our children, who I think many of us believe are our greatest resource.

So, thank you all for this very rich discussion.

I do want to remind everyone who registered for today's webinar that you will receive an invitation for the next webinar.

That this webinar has been recorded, the recording, a transcript, and slide presentations will be available on covid19conversations.org.

Thanks again to our panelists and to the American Public Health Association and the National Academy of Medicine for sponsoring this webinar series, which has been fantastic. I've been lucky to watch many of these over the course of this pandemic.

And I will close there and say, have a good evening, be safe, and stay healthy.

(Whereupon, the above-entitled matter

went off the record at 6:29 p.m.)