AJPH Podcast—September 2021
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"CONTACT TRACING, SCHOOL REOPENING, AND PUBLIC HEALTH CHALLENGES"

[musical prelude]

AM Good morning, everybody! Thank you [for] being on the podcast of the American Journal of Public Health. Today, we are going to discuss the school returning and all the challenges in this period of Covid-19 and in particular for children that are younger than 12 that cannot be vaccinated, so the issue of contact tracing is going to be key for a successful and helpful school returning. And, let's directly into the discussion. First of all, let me ask you to introduce yourself, because this is partly sound-only podcast, and people need to associate your names and your voice. So, let's start with Anna.

AB Hi, I'm Ana Bento; I'm an assistant professor at the Indiana School of Public Health, and I'm a mathematical modeler of infectious diseases.

AM Thank you. Brea?

BP Hi, my name is Brea Perry; I am a professor of sociology at Indiana University, and I study social networks and health and illness.

AM Thank you. Margaret?

MF Hello, my name is Margaret Frankhauser; I'm the Director of Aging Services at JSI, and I serve as a public health consultant; and during the first year of Covid, I served as a consultant and lead for congregate setting outbreaks.

AM So just, JSI stands for… ?

MF John Snow Institute which is a public health consulting firm based in Boston.

AM Okay, thank you. Andy?

AR Yes, Andy Rucks, I'm professor emeritus in the School of Public Health and Department of Health Organization and Policy at the University of Alabama at Birmingham. I've had the good fortune of working in the field training the public health workforce dealing with infectious diseases, and then after my retirement this opportunity came along to assist the Alabama Department of Public Health with case investigations and contact tracing, and I've been doing that since July of this past year.

AM Great! So, let's start with you, Andy. Is the state also of Tuskegee, is the state where, you know, has been a huge distrust for government, et cetera; there is a large African-American population that has a bad record, history of with public health in the state; but on the other hand we hear also that there are some practical, very simple issues of access which makes that whole population cannot necessarily access testing or contact tracing. So, what do you think is the major challenge in Alabama now?

AR Presently, I think you've landed on the primary one or what we see as number two. Number one would be the, an inadequate set of resources to conduct case investigation and contact tracing relative to the population of the state. We're doing the very best we can, but we would need a small army to do it at the pace that needs to be accomplish. For example, we're averaging about, with the delta variant, almost 4,000 cases per day, and we're investigating a very small fraction of that.

AM Margaret, you will say you also have been acting in a red state with a different demographic composition; did you meet the same issues as Andy has been discussing?

MF Probably not at the same scale, because New Hampshire is a very small state, geographically. It has, does not have a very significant community-wide public health presence. There are only two municipalities with public health departments: Manchester and Nashua. The rest of the state operates under a town model, so towns are generally in control of health issues. That gave us, in some ways, an advantage because the state could serve as the central hub for information gathering, for contact tracing, and case investigation; and in general, the Department of Public Health is well trusted in the state of New Hampshire. However, part of the state, a significant geographic portion, is highly rural so people have long distances to travel, Initially, getting tested was a concern, having access to testing, but the way the state structured it from the very beginning was to pull all resources into one place, literally one place. So, case investigation, contact tracing, and the unit I worked with which was considered the congregate investigations unit dealt with schools, nursing homes, any congregate sort of facility including businesses. All those were contained, and we actually had in-person access to one another. Of course, socially distanced; we used masks, but we were able to very quickly coordinate activities and engage others. And, trust was not one of the major concerns for the state of New Hampshire; it was really getting access to testing and information for people. So, and now Brea, you want to chime in at this point about those two experiences—two red states, two different issues. So, it's not the red that's the issue.

BP Yeah, I mean in our research at Indiana, we're finding that Black and Hispanic Americans and people who are experiencing economic precarity are less willing to participate in contact tracing and quarantining than their more advantaged counterparts, and there are really primary economic reasons for this. So, people who don't have insurance or who otherwise are unable to access

health care, for those folks knowing about your Covid-19 status doesn't really improve your ability to achieve a better outcome, so there's sort of a why do I need to know sort of attitude. And then we also find that those groups are less likely to want to know their Covid-19 status because knowing would mean that they have to quarantine and then would have to miss work. So, we're finding that economic hardship really presents pretty difficult choices that make testing, treatment, and isolation intractable for a lot of American families. So, even if the program is in place, it may be less accessible or less successful in some of these under-resourced communities.

AB Yeah, I will agree 100% with what Brea has said. We've seen this, not just in the US but, also in all other countries, really. The issue of compliance is merely driven by economic incentives or lack thereof; so of course, as Andy mentioned, trust is sometimes an issue. And of course, in the US historically we know that has, we know there is a reason for the lack of trust. However, what we've seen particularly is really that lack of incentive and lack of infrastructure to allow people to test and then quarantine, self-isolate, and actually not lose their paycheck and not be, you know, in a precarious situation.

MF I'd like to add one thing that Brea introduced, and we certainly saw this with schools in terms of contact tracing. Economically disadvantaged families also tended to live in much smaller housing units, so when a child became a case it was virtually impossible for others in that family to maintain distance from them, and we call that continuous exposure. And what that meant is that, sequentially, the quarantine would extend for a parent which meant that they were out of work—if they behaved under quarantine—they were out of work for an extremely long period of

time, and we saw compliance just fall off dramatically because of the realities of the housing situation and the fact that they desperately needed their paycheck.

AM I mean, in this case, does any state introduce economic incentive, guarantee the salaries of people who need to be quarantined? What was the situation in all the states that are represented here?

AR In Alabama, there's no incentive, at least state-supplied incentive.

MF In New Hampshire, apart from the usual federal processes that were in place, there were no additional incentives; and I think it's important to add that the population that was greatest at risk also tended to be classified as essential workers, so they were expected to show up for work. They were nursing assistants, they were grocery store clerks, they were garbage collectors; they were people who were expected to be at work even in the midst of a pandemic. So, the privileges that were afforded to others were generally not made available to them.

AR Agreed.

BP Yeah, I really second that notion as well, and I do worry on the whole about how contact tracing programs are implemented and distributed across the country, given the lack of social safety net that's provided by government. So, history tells us that interventions that are less effective or less accessible to lower-status groups will widen health disparities. And there's another problem too if we're talking about contact tracing programs in schools. Schools that serve less affluent communities typically don't have the personnel or the resources or the necessary expertise to contact trace and test large numbers of their students, so you have rich schools in largely white neighborhoods throwing money at Covid-19 to the benefit of these wealthier communities. So, if you take sort of what we know about contact tracing in schools and then sort of more broadly—so like this poor or non-existent implementation and under-resourced schools that serve Black

and brown students and then also lower willingness to be tested and to quarantine among parents at these same schools, it's likely that these programs could actually exacerbate Covid-19 health disparities as an unintended consequence. And that's not to say that we shouldn't do it, but rather that we need really robust government programs, especially in lower-resourced communities, to even the playing field. And that's, I think, exactly the sort of policies or programs that you were talking about, Alfredo, that we don't see on the state level. You see like, you know, small NGOs and non-profits who are engaging in this kind of work, providing economic incentives for testing, but it's not widespread and it should be.

AM Because what I'm hearing here is that, well, there is the issue of distrust; I mean Andy talked about it, but even in Alabama the main issue is structural. It's how to access, it's how to guarantee that parents can keep a living, that family won't be in trouble to get get food and to keep their work, et cetera. This seems to be the major challenge, the major obstacle for a successful contact tracing and control of the pandemic while school reopens. Would you agree with that, or… ?

AR I would. I would say we have one other concern or issue in Alabama and that's the issue of languages. We have a multi-lingual workforce conducting case investigation and contact tracing and can speak to the variety of languages that are spoken by residents of Alabama. The issue that we ran across in several instances—I don't know how many because we didn't keep track of that—was that the recipient of a call would react negatively to the accent that one of our investigators was using. They might be—many of whom were international students, particularly the, this particular task was very popular among international students. And we met some resistance that we've somehow overcome to some extent but not completely, and that

contributed negatively to the trust issue. One other reluctance about contact tracing: We found that many families would not identify members of the household who were present or who live in the household concerning a case.

AM This situation that Andy just said, not everybody will report all their contacts which is kind, is normal in some ways, but to some extent, but how does your, does it make your work complicated? How can you assess the impact of contact tracing and at the end the number of lives that have been saved? Because that's the objective of contact tracing, right?

AB Yes, so you really hit it on the nail, right, so the kind of work that we do as infectious disease modelers and epidemiologists is that we're really used to amassing dirty data. So, in generally mathematically speaking, in the perfect world, with an [arnot] of three, let's say, if we got back to the early stages of Covid-19, you basically would have to trace all of the contacts before they become infectious for it to actually reduce the reproductive number, the low one. So, now we're in the stage where in the middle of the pandemic, at the very best you do random tracing because of what [we] mentioned, you know, about an [inability] to kind of trace all of the contacts bias in recall, because we don't always remember who we contacted. It's not really that kind of unwillingness to report your dad or your sister or your partner but more so this idea of biases in recall is a huge problem; also the fact that we haven't mentioned yet. Covid-19 transmission is highly driven by asymptomatic cases. What does that mean? It's means that often times, even if I become infected and I have symptoms, I might not even understand who might have been the person that potentially infected me. So, all of those uncertainties—so these are not necessarily weaknesses of contact tracing, but they're kind of particularities in traits. We'll have very different types of spread.

MF Yeah, there's another elements to students that is unique and that is their age. So, a contact tracer will not be talking to a 10-year-old on the phone; they'll be talking to the parent, and the parent has not been at the school or on the bus or walking home with the students, so their knowledge of who the actual contacts are is limited. In New Hampshire, we simply had to deputize school nurses to do that portion for us to help us identify where a student traveled and who they were with, and of course we relied on assigned seated and things of that nature. But that required quite a bit of structural design to reduce the number of potential exposures; but clearly, parents don't know everyone that their child interacts with during a period of communicability, and that became a challenge.

AM Of course, and you know this idea of random contact tracing, I like the idea very much. Brea, do you think it has chances to be successful in populations that are disadvantaged, marginalized, that have you know already an opposition to contact tracing in general if it's done randomly?

BP I don't know that I can directly answer that. I think that you may potentially still have problems with willingness to participate because you can't force people to participate; maybe if it's random it's seen as less directed and therefore, you know, you would see greater willingness. I think my bigger concern about some of the comments that Margaret and Ana were making is about if you sort of layer on top of this the ways that people in society tend to interact, the sort of broader patterns of interaction, and so you have people that are of the same race or ethnicity or the same socio-economic status are more likely to interact with one another. So once you have an outbreak in one of these communities, it's much more likely to spread in that community and stay in that community, right? So perhaps something like these random testing or contact tracing programs in those kind of communities that we know are vulnerable would be successful, but

again only if we can get people to participate in them, right, and for that you have to reduce some of the structural barriers.

AM We haven't talked to so much of stigmatization. Can you explain why people would feel stigmatized of being tested positive for Covid-19 which, you know, is the pandemic. I mean, it's what's in the air now.

BP Yeah, I mean, I think that any time there's a perception of potential personal responsibility, you're going to see high levels of stigma, and I think there are a lot of people who feel that people who get Covid are not protecting themselves, right? They're not engaging in preventative behavior, they're not mask-wearing, and of course all of this is layered over with political partisanship. And so, I think that stigma is really problematic, and we find in our data that it's another reason why racial and ethnic minorities are less likely to participate in contact tracing programs.

AB So, I completely agree with that. We don't really think about it that way, but there is this element of shame, and Brea explained it very well. It's this idea of nowadays if I were to get Covid, it means that perhaps I did something that I shouldn't have, but the reality is that we know the vaccine's not perfect which means that even if you are protected and even if you wear your mask and social distance, there is always a chance because these elements only reduce the probability. They're not bullet-proof.

AM So, in this context and to have an idea of the extent of the opposition or obstacles, et cetera, what's your perspective on what's going to happen with this school re-opening? Are we doomed to see, you know, outbreaks in schools all over the country or is the opposition too small to actually have a huge impact?

MF My sense is that we're going to see a dramatic rise in cases, and in fact we've already seen that; and we'll see many more outbreaks, not isolated cases but clusters of cases building once again primarily among the unvaccinated; but as Ana said, none of our mitigation efforts are bullet-proof. So, we will see it also extend into the vaccinated community. So I think at some level, this is inevitable.

AB Yeah, so if I may just add to that. So, we all know there's variants of concern popping up which further creates a higher probability of infection for all the things we've mentioned already. But also earlier on in the pandemic, kids were not really getting infected, simply because schools were closed, and they were actually reducing their exposure tremendously, right? So now with all these new things—variants that are more infectious or not necessarily that but more [transmissable]--is creating now this very interesting kind of like hot spots which kind of relates to all of the things Brea said, right, these communities that all of a sudden are at higher risk simply because of the way schools are or because there is lack of staff that allows for them to be safer. So I think it's a question of safety, it's a question of infrastructure, a question of information. So, information is also key. So, there's a lot of components that allow this to go tremendously long, but those, knowing all of those components allows us to perhaps try and mitigate all of the things that can go wrong. As we know, this is likely to become endemic in the years to come, but perhaps that's subject to another podcast, so I'm not going to go too much on that.

AM Yeah, yeah, I think… I mean do we still agree that if the child comes from a family that's all vaccinated and go to school where the teacher is vaccinated, the situation is very different than

when there's no vaccine… ? And potentially the duration of this pandemic is going to be largely dependent on how fast we get to an overall vaccination rate. Do we agree on that?

AB But I have one thing: Herd immunity is a pipe dream that only exists in mathematical and theoretical models. So, I just wanted to--

AM Ana, you're talking to a historian. I know all the pandemics of the past; they [usually] disappear because of herd immunity. I mean, and there's no one that has last[ed] forever or even many years or even many months. So, this story of the endemic, et cetera, and the myth of the herd immunity—I don't buy it as a historian, not as an expert, for today's Covid-19 is a completely different story. But historically, you would not be able to show me a single example of that.

AB That's correct--

AM --[once the population] is all infected or all vaccinated, that's over until, you know, the new generation of susceptible people, you know, accumulate and then there is…

AB That's correct.

AM Yeah, yeah, so Andy, are we doomed or not? What's your view on that?

AR My concern in Alabama about the surge in cases among school-aged children is that they're going to be grossly under-reported. In our state, it's voluntary if a school system reports information they have, so it's sporadic. Also, a colleague who's leading an effort, a major effort, to provide testing services in K-12 throughout the state and there's been very little uptake in that by any major systems—maybe two or three or four in the state and a few private schools. So, my concern is we won't really know unless we follow the information about hospitalizations, pediatric hospitalizations, and so forth; and like others, in our state the hospitalizations are

plateau-ing as the local press reported perhaps not because there aren't cases of Covid but because they simply don't have anymore capacity to handle them.

AM Brea, we're getting to the end of this and I'm going to give you the last word, because as you said, you know, poor public health can actually increase inequalities. And that's a real issue because the inequities of the way this pandemic has hit our society is probably the most striking and the most revolting aspect of it. So, if there was one thing, you know, that we should do in priority to guarantee that we don't exacerbate inequities but we kind of reduce them, what would you say this thing is?

BP Oh my gosh, that's such a hard question. I think we have to, I would say, reduce the wealth gap. If there's one thing that will have the largest impact on public health, not only during the pandemic but also all sorts of health disparities, I would say we have to reduce economic inequality in the US.

AM I think you got the last word. That is the right one; I would totally agree with it. Thank you very much, everybody. We wish the end and this was a great discussion. I enjoyed meeting you all, and take care, everyone. Bye bye!

[musical postlude]