Transcript: Organizing, Budgeting, and Implementing Wraparound Services for People in Quarantine and Isolation

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Margaret Bourdeaux: Hello, everyone. I'm Dr. Margaret Bourdeaux, I'm the Research Director at Harvard Medical School's Program in Global Public Policy. And I'm here to welcome you to our second COVID response seminar, "Organizing, Budgeting, and Implementing Wraparound Services for People in Quarantine and Isolation." This series is co-run by Harvard Medical School's Program and Global Public Policy, as well as Harvard University's Berkman Klein Center for Internet and Society. And it's also co-sponsored by the National Governors Association. The purpose of this series is to tackle issues regarding implementation and COVID response policy. So we really seek to showcase the work of implementers so as to support those standing up or building upon COVID response programs in their own states and in their own communities. And the topic of today's seminar is supported quarantine and isolation programs. And some of the questions that we're hoping to tackle today... I'll go ahead and share my screen here, really include the following. So what we want to talk about today is of course what is supported quarantine and isolation and why is it important? How are quarantine and isolation programs set up and managed? And what is their value and what do they cost? And how does one get started? Or how does one build upon the resources that have already been established in the state in terms of building these programs out? So today I'm enormously excited to have a panel of incredible guests with us from around the country that are going to help us answer some of these questions. I do want to go through a brief sort of run of show with everyone and give some brief introductions to the folks that are going to be with us. So I'm going to go ahead and lead off by giving a kind of overview of what we mean when we talk about supported quarantine/isolation, how it fits into a broader strategy of COVID response. And then I'm going to turn it over to Dr. Syra Madad and Dr. Amanda Johnson, who are both leaders of New York City's Health + Hospitals, the largest network of public health facilities and hospitals in the country. And they are both deeply involved in setting up home-based as well as facility-based quarantine and isolation support services in New York City. And then we're going to pass the mic to another dynamic duo, Dr. Mia Lozada and Dr. Jennie Wei, both doctors at the Indian Health Service in Gallup, New Mexico in the Navajo area, and who both also have been deeply involved in standing up very impressive, expansive programs, both again, facility-based and home-based quarantine/isolation programs there. To bring us home, I will turn over to Dr. Linda Bilmes, the Daniel Patrick Moynihan Senior Lecturer in Public Policy at Harvard Kennedy School, a former Assistant Secretary of Commerce, and a leading expert on budgeting and public finance. And she's going to lead us on a discussion of how to think about supported quarantine/ isolation programs from a budgeter's point of view, what its value is, what it costs,

and how to think about investing in these efforts. One final introduction is of student, Jessica Kaushal. She's a student, both at Harvard Kennedy School in Stanford, who has led a paper with myself and Dr. Bilmes that just came out today, on estimating the cost of quarantine and isolation services in Massachusetts versus the cost of not investing in those programs. And she'll be joining us for the question and answer period after the session. So with that stellar crew in mind, I'm going to go over some basics. So the first question I often get when I bring up quarantine isolation at this moment in the pandemic is why are we talking about this, aren't vaccines here? And isn't this going to be over soon? And I would say I've sort of been hearing that thought really for about 18 months, where folks have been saying, this isn't going to be bad, this is going to be over soon. And I think one of the things I would say is I am very, very optimistic about vaccines, and I do think they're going to make a significant dent in transmission and bringing about the end of this crisis. But I would say that if you really take an honest look at what our public health strategy has been to date across the country, it still remains pretty crude. And that is coming from somebody who has worked non-stop on public health strategies in response to COVID for the entire year. And so, while we're waiting for vaccines to roll out, we really have to get more sophisticated about the public health strategies that we're using. Right now we really are relying on public health strategies that at their core are about lockdowns, shutdowns, closing of schools, closing businesses, closing places, and those do work, but they're very, very onerous. So the reason we need to talk about quarantine/isolation in particular is so that we can get a more nuanced approach, a less onerous approach to our non-vaccine public health strategy. The second issue of course, is that we are hearing a lot about variants, viral variants that are emerging that may potentially diminish the effectiveness of our vaccines. And the third issue is, even if our vaccine strategy is completely perfect, we're still going to have outbreaks of COVID very likely in the future over the next year or so. So now is the time to really power up our non-vaccine public health strategy. And what do I mean by our non-vaccine public health strategy? You've probably heard a lot of different analogies and sort of ideas about what a good public health strategy is in respect to COVID. I love the Swiss cheese model, where you layer defenses, where you try to make sure all your holes in your Swiss cheese are covered, or the lasagna strategy where you're layering on layers of protection. I think that's fantastic. I also really like the analogy of the three-legged stool, and I like it because it talks about different elements of the public health strategy as being interconnected and dependent upon one another. And just briefly to give you a sense, on one leg of the stool, we modify our environment, what are the things that we can do to change the environment to make transmission less likely. And here, with respect to COVID, we're looking at things like, well, improving ventilation and air filtration and closed spaces, as an example. And the other leg over here, we have modifying behavior. These are things that we ask sort of everyone to do or a huge number of people to do in order to drive down transmission. Here, the most relevant example, probably with respect to COVID is we ask people to wear masks, and that's for the general population. This yellow leg here that I've highlighted in yellow is the third leg of the stool, and that's contact tracing. And contact tracing is a process by which you identify who is infected, you identify the folks that they have exposed to the disease, and then you ask those folks to either quarantine or isolate so that they don't transmit the disease forward. And that's a very specific exercise where you're really chasing down and trying to break individual chains of transmission. It's a much more refined approach than these other approaches which are a little

bit broader and involve a lot of folks. And of course the top of the stool is public health intelligence. That's when you take your data and you understand what you're doing and these three different legs are working, and you refine them. And so when we talk about quarantine/isolation, we're really talking about it predominantly as a strategy that is part of contact tracing. And I would just submit to you to think about it as the defining intervention of contact tracing. You can test and you can trace contacts, but unless you're really asking folks to stay away from others, it's not going to have that much of an impact. So what is quarantine versus isolation? I keep using both of those words. So just to review a little bit for folks, they're a little different. So the goal of quarantine is to keep people who've been exposed to the virus away from others until it can be determined that they are not in fact infected. For isolation, refers to the practice of keeping people who you know to be infected away from others so that they cannot transmit. The duration for these is a little different. And just two days ago, the CDC came out with refined guidance on how long they should last. The duration for quarantine remains at around 14 days, but it can be shortened to seven days if you get a test 48 hours that's negative, 48 hours before that seven days is up, or 10 days without a test. Isolation is recommended for 10 days after the onset of symptoms, or if you never have symptoms, 10 days after a positive test, and at least 24 hours after fever has resolved. And it can last longer than that for very sick or immunocompromised patients. The contexts in which you're asking people to quarantine or isolate also vary a little bit. So, as I mentioned, folks that you ask to quarantine are often identified through the contact tracing program. And there's also increased practice of asking folks who are crossing state lines or country lines travelers to quarantine for a certain period of time as well. Isolation is really for anyone who's been diagnosed with infection. So what is this issue around supported mean? And here is, I like to tell a story from back in April, 2020, when Massachusetts was just starting to get its contact tracing program up and running. I had a friend that lives down the street from me who told me this story. She's a midwife. And she had just come from the office where she had encountered a young woman who was about 25 weeks pregnant, and young woman just come in for a routine visit, but she noticed that the young woman was coughing and she said, "Oh, do you think you could have COVID?" And the woman said, "Boy, I think I might, because I actually live at home with my two parents and my young toddler, and everyone in the house is sick." So the midwife sends off a test, and it comes back a day later at that point as positive. And so she calls the young woman and she says, talks to her for an hour, talks to her and says, "You really have to stay apart from others. You have to stay at home. You really have to isolate." And the young woman is quite very worried and absolutely taking it seriously. They go through how they're going to organize the bathroom and the toothbrushes and how they're going to make the inside of the house as safe as possible. Anyway, the midwife hangs up the phone after about an hour and goes to the grocery store. And in the grocery store, lo and behold is the young woman that she's just talked to, who she knows to be positive, and she says, "Oh my gosh, what are you doing here?" And the young woman said, "I'm sorry but I'm the wellest person in my household, and I need to get groceries." It was so obvious that that in fact would be a very natural need, but it really was a surprise. Here was somebody who took the epidemic very seriously, was very worried about it, and yet was unable to have a– to successfully immediately quarantine. And so this issue of support is essentially, what do folks need to quarantine and isolate successfully? What are the services that need to be in place so that they can actually succeed, and that this can be an effective disease control

strategy. So there has been some interesting work done on looking at adherence to quarantine/isolation. It's not a vast literature, but it is an interesting one, where they've done studies of why do people break isolation or quarantine in different contexts? And it's pretty interesting that in that literature, it's pretty obvious that there are a couple of basic things that jump out that are common through all studies of this: folks need to get food and necessities, they need to keep a job and earn some money. So they will break if they can't sustain that. Some folks have no safe place to stay, either they don't have a place at all, maybe they have a problem with homelessness or they're living in a situation that is simply not safe for them to stay in for the entire duration, or they have to fulfill social and family obligations that they can't figure a way out of or can't figure a way to do from their homes. So with those sort of things in mind, really designing a supported quarantine/isolation program, set us up for thinking through some of these requirements. And just on the last note, there's sort of two flavors, if you will, of quarantine/isolation support programs, one is home-based and the other is facility-based. And so the home-based option is really by and large what has unfolded in Massachusetts, there have been some facility-based isolation and quarantine programs. But in general folks here have undertaken quarantine/isolation from home. And how the State of Massachusetts has chosen to organize some of its program is through its contact tracing programs. So when they reach out to somebody who is infected or who has been exposed, they'll go through a questionnaire and ask them what do they need in order to undertake successful quarantine. And they have found that when folks identify a major barrier to successfully completing it, they will then kick the case up to a cadre of case resource managers, folks who will take on the case and work with the person over time to address those challenges. And that's been nice. I think the issue has been that usually case resource managers have to cobble together local resources in order to make it work for the person in quarantine/isolation. I think there's a lot of thought now about, how can we make it more standard, the supports more generous and more routine to make it even better. And then the second flavor is the facility-based quarantine, and there's a bunch of different sort of “subflavors” of this, but one approach has really been to use hotels as safe spaces to quarantine and isolate. And on that note, I would love to turn it over to Dr. Madad and Dr. Johnson, who again are some of the leaders at New York City's Health+Hospitals, the large network of public health facilities and hospitals in the country. And they are here to talk about the New York City experience and how they have run their program there.

Amanda K. Johnson: Thank you so much, Dr. Bourdeaux. Thank you so much to the Berkman Klein Center for having us here today. We're just going to do a brief slide transition and then we are really excited to talk to you a little bit about how we're approaching this work in New York City. Just to orient folks to the pandemic response in New York City, the public health effort that we entered into as of June of this year is encapsulating what we call our Test & Trace Corps. Thank you so much, Dr. Madad. So that's great. So our Test & Trace Corps has three pillars, and this is reminiscent of the slide that Dr. Bourdeaux shared earlier, in which we have an extensive community trusting operation. We have a community-based contact tracing outfit, as well as one that is focused on facility for congregate settings. And then the last portion, the pillar that I'm the director of, is our Take Care pillar. And we're responsible for ensuring that people who are exposed to or diagnosed or don't [indistinct] COVID-19 have everything that they would need in order to effectively and safely separate from individuals in their households, individuals

in their community, individuals in their workplace. I think one of the themes of this program is to talk a little bit about organizational structure and leadership. And so I want to call out that the New York City Test & Trace Corps was commissioned by our city leadership and is a partnership between our department of public health, that's the Department of Health and Mental Hygiene, DOHMH, as well as New York City Health+Hospitals, which is our public health care delivery system. And so really being able to leverage the expertise of both of these sections as well as many other city agencies have really stepped up to help us combat the pandemic in New York City. I'll highlight those as we go. And so in our Take Care Pillar, we support people both in our hotel program as well as those who choose to isolate or quarantine at home. Now, even down to the scripts that we use in our contact tracing, there's a little bit of choice architecture here. We promote the hotel above home isolation or quarantine whenever possible. If you look at a map of New York City and you see the distribution of cases and contacts across our five boroughs, you'll notice a few things, you'll notice there's overlap of multi-generational households, of households overcrowding with places where we have the highest positivity rates. Probably not surprising to this audience that these are also parts of our city that had greater underrepresented migrants, people of color, as well as people who are in jobs that don't allow them the luxury of working from home, where people are on public transportation and coming into Manhattan in order to be able to earn a living, and places where we know that there is just greater indices of poverty. There's an equity focus to how we've organized the work that we're doing. We try to promote hotels at all costs because of many of those environmental factors. Sorry, busy Manhattan street outside. We try to promote the hotel over home isolation, but we know that for a variety of reasons it's not going to be the right choice for everyone. So to that end, we have put together our resource navigation program that allows people to safely separate at home. In this effort, we work with over 400 resource navigators who are directly employed by a handful of community-based organizations, some of which are represented here. And when someone completes their contact tracing interview, they are referred over to a resource navigator. If they screen positive or identify a need for a few high-yield resources, some of the things that Dr. Bourdeaux brought up that are commonly needed for people to be able to isolate or quarantine if they choose to stay at home, as well as someone who has identified any other unmet need. And it's true that it is a little bit of cobbling together, both citywide resources, as well as local resources, but something that I think has really worked to our advantage in terms of being able to provide curated and resonant resources to the very diverse population that we're trying to serve is the fact that we've brought together community-based organizations that span the five boroughs, and have different niches, have different local expertise that they bring to bear in their conversation with these individuals. Even aside from language affinity, just being able to actually know the neighborhood that they're serving, has gone a long way towards building trust, maintaining trust through our programs. One thing I do want to call out is that people who have been identified through contact tracing are eligible for both hotel and home services, but we also sometimes seek to invert this test, trace, and then isolate and quarantine paradigm. If we're waiting for test results to come back or waiting for individuals to be contact traced, we're missing valuable days. We know that transmission can happen very, and does happen very early on in somebody's course of illness. So to that end, we have also built a COVID-19 hotline so that people can call in and proactively request resources such as hoteling, such as support for isolating at home. And to say a little bit

more about how this at-home program is structured, we do work with these CBOs, they're all governed by the Mayor's Office of Housing Recovery, who kind of oversees and coordinates with them on just kind of the day-to-day management. Some of our key services you'll find here. And I want to call out a little bit around food delivery. Can we go to the next slide? This is not surprising, the reason that people leave isolation and leave quarantine is to put food on the table, either literally or figuratively. And so GetFoodNYC is actually a program that was run by our Department of Sanitation. That was the city agency that was identified as having the assets and the talent to be able to get emergency food out to people, especially early on in the pandemic when people were in their homes. And oftentimes not able to get out to an open grocery store to provide some of those regardless of whether they had been exposed to or infected with COVID-19. GetFood continues to be our most requested service from our resource navigators, and provide emergency home food delivery to up to two members of the household. There are logistical reasons and financing reasons. And I would say just kind of lack of data reasons, that was the parameter set in the beginning, but it's definitely something that we're looking into as we try to drill down into the reasons that people still find it challenging to isolate or quarantine. Now that we do our best to meet the various dietary preferences and restrictions of people in our city, and that doesn't just extend to vegetarian, kosher, and halal, but also working with vendors who specialize in producing Latinx and pan-Asian options. Next slide. Another piece of our support services for people who are choosing to isolate at home is our Take Care Package. So everyone who is identified through contact tracing is offered a Take Care Package, which includes PPE. So it includes surgical grade masks, as well as some hand sanitizer, and then certain monitoring equipment, like a digital thermometer and a pulse oximeter. And I will drop a link into the chat box later on, but the booklet itself is a really wonderful asset that we've developed, it's available online. And I think just the thought that went into producing the content and really trying to detail for someone how to achieve isolation and quarantine in their home, was really beautifully done. And we have Dr. Madad's expertise and guidance to thank for that. Contacts can also request as part of their Take Care Package an at-home testing kit. So people aren't faced with the decision to either leave quarantine and get tested or go without a more definitive resolution as to whether they've actually developed COVID-19. Next slide. So before we turn it over, really turn our attention to the hotel program, I want to talk a little bit about our successes and challenges in running the resource navigation program for individuals separating at home. I think the number of agencies that we were able to bring together to get a program off the ground by June 1st was really impressive. We then later undertook the work of building the Research Navigation customer relationship management platform back into the contact tracing system, before they existed in two entirely separate platforms. And it actually has done a great job of improving visibility in these critical handouts that we have between our contact tracers and our resource navigators. And then we have been able to expand the reach of our resources since the launch of the Resource Navigation program of June of 2020. And in particular, I alluded before to, figuratively, they need to put food on the table. Not surprisingly, one of the most common reasons that people were leaving their home, especially during quarantine, was the fact that they felt the need to continue to go to work. And we can't downplay how critical being able to make that month's rent, being able to pay for medication is for so many of the individuals that we're serving. And so, as we made that transition into the integrated platform, it allowed us to better index many of the cash assistance

resources that are available to New Yorkers, regardless of documentation status. So we really increased our communication around paid sick leave, which has both city, state and federal components, and then were able to refer people into other sources of cash assistance if for whatever reason they didn't meet the criteria for some of these government-funded programs. There are certain challenges that remain for us, however. Things like childcare and adult care are not resources that we have available to people. So really finding a substitute for hands-on care when someone becomes ill but they're responsible for other members of the household, it's still something that we're looking for solutions for. Most often, we tell people, if they're in that situation, you should go to the hotel where there will be staff on hand who can help you. I think another thing that we realized is that we're so happy we made the transition into an integrated information system platform, however, there's no good time to roll it out. And there are certainly some bumps in the road, some challenges, some growing pains that we endured during a time when, post-Thanksgiving, we were also dealing with an influx of cases into our city. And then lastly, having an integrated information assistance platform does allow you to monitor even at the community-based organization level, the status of your work in process and really hold ourselves accountable for connecting people to services within 24 hours. Yet and still there is a layer of management that we have to learn how to do in a time where a lot of our directions are virtual. That cannot be substituted merely by monitoring what's in the system. There still is the need to understand how people are prioritizing work, managing their workforce. And it is one of the costs, one could say, one of the extra sources of energy you need to expend to be able to get the benefit of having different CBOs leverage their local knowledge. So with that, I'll talk a little bit about the hotel program, just to set up Dr. Madad. Again, what we really set for people, and we're really excited to celebrate are, now it's 11,000 guests and growing in our hotel program since June, is the Take Care Hotels. It is free to stay there and it's free to be transported there. We try to stress that there are amenities. You will get free WiFi, you'll get cable TV, and really let people know that it's not a substitute for a hospital. I think there was a concern that this was a medical facility in the beginning, and it was actually off-putting when all that people saw on the news where EDs that were overwhelmed with with COVID patients spilling out into the hallway. We have medical professionals onsite because, especially as we entered into a realm of community-based contact tracing, where people were coming in early in their COVID infection not being discharged from the hospital to the Take Care Hotels. People can become sick quite quickly. And it is important to have some staff on site doing light monitoring and clinical support. Dr.Madad, I'll turn it over to you to talk a little bit more about the design of the program.

Syra Madad: Thank you so much Dr. Johnson, that was wonderful. So I'm just going to very quickly in a high-level fashion talk a little bit about the infection prevention and control considerations. And obviously health and safety and IPCs are the cornerstone of everything that's being done. And so just very briefly, when we're looking at the hotel setting, obviously you want to adopt infection prevention and control strategies to this creative environment, ensure that obviously we have the best process in place based on the latest public health guidance. So anything from looking at this floor plan and having designated clean and soiled utility rooms, having donning and doffing areas. And the light housekeeping, linen management food services, all of those obviously are essential services, and looking at it through an infection

prevention lens and preventing that cross-contamination. PPE and transmission-based precautions, so certainly obviously caring for confirmed clients that have COVID-19, and ensuring that PPE matches, obviously the type of care that's being provided. Supplying equipment, really important. And as Dr. Johnson mentioned, looking at the type of clinical acuity that you're going to be providing care for, and making sure you have the adequate supply and equipment to go along with it. So all these are different types of considerations certainly to look at. And this requires a lot of planning, thought, and ensuring you have a multidisciplinary team that's able to kind of walk through and see how to look at all of these different processes from an IPC lens. The next one. And then when we talk about health and safety, really important about the education and training that's being provided, both to the staff that are manning these isolation/quarantine hotels, as well as those going out in the field. So there'll be resource navigators, community engagement specialists and the like. So the image that you have, for example on my left, is you see an image of a training happening at one of the isolation/quarantine hotels in New York City, where we're talking about the different processes that are - that we have in place. And certainly, as you're retrofitting a hotel, you're looking at what their donning and doffing space looks like, where that PPE cart is and the like. And so making sure that all staff are familiar, both clinical and non-clinical, where things are, ensuring their safety, ensuring knowing that they understand the guidance that is being provided. And this obviously is an ongoing basis. So as guidance changes or we learn more about the disease and the virus, and there are changes in public health guidance, which is normal, certainly obviously, making for that you're providing that education and training on an ongoing basis. And then on the other images, we're seeing training take place with community engagement specialist and resource navigators, ensuring that as you're going out in the community, making contacts with the general public, that they obviously know not only the type of PPE, either wearing, but how to put it on safely and effectively, as simple as putting a mask and glove on, really important to obviously understand the nuances there, and preventing that cross-contamination to themselves. And then also understanding the policy and the guidance that goes along with it. So health and safety is at the cornerstone of everything that we do. And then lastly, I'll just end with just mentioning a quick publication that we have available on our New York City Health+Hospitals website. And it talks about a little bit more of the effective prevention and control considerations and the environmental health and safety in these isolation/quarantine hotels. So it gives you a deep dive, all the different topics I talked about, and giving you templates, visual cues and the like, and certainly, if you're interested, to click on that. So with that, I'm going to hand it back, and we're happy to take questions at the end.

Margaret Bourdeaux: Okay, that was a whirlwind tour. Thank you guys so much, an incredible amount of work and the sophistication of the programs that you guys have stood up. And also, I think it's helpful to hear about where are the gaps still, where are you guys still wanting to build out more. And I think we can get back to some of those during the question and answer period. And there are a couple of good questions in the chat box as well. We'll get right back to those. I do want to go ahead and bring on Dr. Lozada and Dr. Wei to talk about their experience in the Indian Health Service in the Navajo area

Mia Lozada: All right, can you hear us okay? Okay. Thank you so much. So I'm Dr. Mia Lozada, and today we'll be talking about a slightly different setting in terms of population as compared to New York City. We work here in the Navajo Nation in Gallup, New Mexico in Rural North Western New Mexico. And we'll talk about the supported isolation and quarantine hotel that we stood up here in March of last year. So for context, for those of you who haven't been out here to the Navajo area, Navajo Nation itself sits in the Four Corners region of the Southwest, does not go into Colorado. It's about 27,000 square miles, about the size of South Carolina or so. And here, circled in red is where Gallup itself sits. We're about 25 miles from the Arizona border. And we have a population here of a little over 20,000 individuals. And technically here in Gallup, we are off the reservation, but there's a lot of area surrounding us even within our town, that's reservation itself. This is Gallup Indian Medical Center, which is where we work. We are an Indian Health Service facility. It was opened in 1961 soon after IHS was formed in 1955, which took over from the Bureau of Indian Affairs. And this is only important for context in terms of when you have an infrastructure that looks like this and you're trying to significantly ramp up and change your system for COVID preparations. It makes it exceedingly challenging using such an old facility. So what happened here in Gallup in terms of COVID in terms of how hard we were hit, and what we had to do to try to mitigate community spread. This was from August, from the New York Times, hardest hit places across the country, I should say, where Gallup for many, many weeks and months continue to top a list that nobody wants to be the top of in terms of per capita, both cases and confirmed deaths. And we continue to be toggling in the top three for both of these categories, even to now. And you can see that many of these areas share some similarities in terms of the characteristics of these regions. That's where New York City and Gallup are right next to each other, which is maybe why we're on this talk together. So looking at the social vulnerability index that the CDC has, I think has been helpful for us in terms of actually characterizing what are the characteristics of our town, of our community, that have made us so hard hit. And you can see here that of the different categories that are listed. And I should, in the very, very tiny print on the right, the different counties across New Mexico, with the highest at the top are the least socially vulnerable, and down at the bottom is the county with the highest social vulnerability index. And that would be our County, McKinley County. And so this is to say that when you're trying to stand up some sort of community mitigation tool in terms of COVID here specifically, that the community and the county and the state really needs to be aware of who is being impacted the most by COVID, to be able to shape a program that fits those individuals specifically. So for our county, we were finding it was individuals that had lower socioeconomic status, were Native American, were living in multi-generational homes. Many times we would call patients to let them know of their positive status, inquire about their home isolation option, and they would say that they live in a three bedroom house with two bathrooms and you'd think, "Okay, that's probably possible for them to isolate pretty safely at home," only to come to find out that they're sharing that space with 10, 11 other individuals, and quickly your plan for safe isolation changes. And we needed to figure out what alternative options we had. We also found that there were many individuals who were living with substance use disorders who were really of the population hardest hit. We have about a third of the population here who live on the reservation, lack of running water and electricity as well. And so when those factors were really important to isolating safely, that many times an alternate option needed to be created or found. And so as folks are trying to gear up plans, we need to make sure that we're

really tailoring to the individuals themselves. And here we can see, in terms of the burden in terms of race here in New Mexico, those who are indigenous are American Indian, Alaska Native population has been at least four times with a higher rate than all other races, which has been a profound experience here among our community.

Jennie Wei: Hi guys, it's Jennie Wei. So I think it's also really hard to talk about how COVID has hit Gallup without really focusing on some of the challenges that we've had for decades, for generations. And these are of course, by definition, the vulnerabilities that have made these populations more vulnerable in times of disaster and pandemic. One of the lists you also don't want to be at the top of is alcohol-related deaths in the United States. So unfortunately, New Mexico for the last two decades has had the most number of deaths per a hundred thousand people. So you can see here on average, we have 28 per a hundred thousand people on average in the United States, and in New Mexico we're at 51 deaths per a hundred thousand people. And if you actually focus again, and keeping in mind that we are in Gallup, New Mexico, which is in McKinley County, the county with the highest social vulnerability index per the CDC. That social vulnerability index doesn't quite exactly incorporate substance use. But of course, we know that a lot of these are inextricably linked with a lot of the criteria that we're seeing there in terms of socioeconomic status, et cetera. So keeping that number in mind, 28 deaths per a hundred thousand here in McKinley County, we're at 166 deaths per hundred thousand in terms of alcohol-related deaths, and not surprisingly American Indians and Alaska Natives bore the highest burden of alcohol-related death at 170 per hundred thousand. So again, as Dr Lozada was saying, it's so important for you to know the population that is most vulnerable, to be able to tailor your community mitigation strategies to that population. So we knew that this population was going to be very, very hard hit, and it wouldn't make sense for us to open up mitigation strategies, hotel programs, et cetera without being able to incorporate people with substance use disorders, for example. Unfortunately, a lot of the other isolation centers, alternate care facilities in our region do not take people with substance use disorder, but we knew this was going to be a huge challenge for us as we were starting to plan for the pandemic. So again, let's talk about what happened here in New Mexico. So we have a detox facility in town that holds people, like a sobering center, an upwards of a hundred people per night pre-pandemic. Back about a year ago, was holding about a hundred people per night in a very, very congregate setting in an area where people were all kind of wandering around together all night until they were sober enough to be able to be released. We try to cut that capacity down 50%, but because we're a small community, we're the only level three trauma center in the whole area. We knew that if we cut that in half, we were going to have an overwhelming number of people overflowing our emergency departments. Already we were starting to feel it, where people were not able to go to these congregate settings, and were 30, 40 people in the emergency department impairing the flow, and not being able to really safely house them. Our very first case in McKinley County was on March 18th. And around this time, we continue to get phone calls, what are we going to do with this population? And honestly, a lot of us started to put together some money. We were taking donations from various other people in town to try to put up some money for hotel rooms for people. And I still remember the first couple of weeks we were able to put together about $3,000, and we were so excited about that. And we thought, "I think we're going to get through this pandemic with this amount of money." Unfortunately not

seeing that far ahead. But what was fantastic was we were able to start to partner with the New Mexico Department of Health, who was able, as well as a lot of what New York City talked about in terms of putting together FEMA funds as well as CARES Act funds, to start to fund some more of these hotel rooms. So our first isolation hotel is actually the first hotel isolation program established in the whole Four Corners region on March 24th. And around that time, we had about a dozen folks in the hotel program, either quarantining or isolating waiting with symptomatic COVID. As I've been foreshadowing, unfortunately on April 6th, we had an outbreak at our detox facility, where the first person was tested positive. And we found that he had spent three of the last seven days in the detox program, had exposed over 170 people. And ultimately, when we were able to find all of these folks, 75% were positive with COVID. So you can imagine in our small community here, the cases of COVID shot up and the need for these isolation sites shot up. So in the course of the first week, the couple of weeks of April, we quickly expanded into needing four different motels throughout the city. We had upwards of 140 to 160 people in the program. And again, tailoring to our population, can you guys take people who may go into withdrawal when they're in the hotel program? Absolutely, where else are they going to go? They have no place else to go safely. So we were really, really ramping up the medical oversight as well, to make sure that they would be delivered medication to help with alcohol withdrawal, to make sure that it was as safe as possible for them. And I think it really was the partnership of our hospital along with the community, along with the state financial funding that was able to make it possible for us to safely house a lot of these folks that are pretty high-risk medically, not just alcohol withdrawal, but having many other medical problems, that would otherwise have no other place to go. So we tried our very best to not have a lot of restrictive criteria and just to make sure that they did not need to be in the hospital. Even now, we actually have a lot of people on oxygen at the hotel, because as Dr. Lozada mentioned, so many of our patients lack electricity and running water, and simply cannot plug in a concentrator at home because they don't have the electricity to be able to do that. Or we hear stories of people putting in four or five different extension cords to extend into grandma's trailer 400 feet away. So as of now, from March of last year till today, we've housed over 1,600 people in our program with the help of an incredibly supportive volunteer staff that have come from all over the country, from San Francisco to New York City. And it's been an incredible collaboration. This is a little bit of a graph of the positive cases we've had at our Indian Medical Center. You can see, we had that little outbreak back in April. We thought it was a big outbreak, but in retrospect was a little outbreak. And so that was a lot of the reflection of the outbreak at our detox facility shortly after the first week of April. And then unfortunately, we got hit very, very hard again in November and December. We thought April was bad, but at least in April, we could transfer our patients over to ICUs in Albuquerque and in the rest of the state. Unfortunately by two months ago, every place was full. It was not uncommon for us to have to call 10, 12, 14 different hospitals across the Four Corners region to find an ICU bed for our patients. And they would have to wait days in the emergency department. And so, as you can see, it is absolutely critical for our rural site to have places to safely transfer or discharge our patients to. So the hotel program remained that ability to be able to make beds available in the hospital in the ED, so that we could continue to try to triage as safely as possible.

Mia Lozada: And similar to what New York was discussing in terms of what the structure of their program is, we were really trying to incentivize folks to stay in their hotel rooms as much as possible, and we would provide them with any other services. So we would provide lodging, meals. We had a contact here in town. Nobody was willing to provide transportation for individuals who were COVID positive in the beginning of the pandemic. So it was a friend of a friend who was willing to drive folks between the hospital and our hotel program. We had wonderful collaboration with the PIH program, COPE, that works out here, which has been phenomenal, that they really fielded, when we had 150 individuals in hotel rooms, they fielded the nonmedical calls that were coming through to help get folks books and coloring books and radios and whatever they needed to be able to stay in place. And then we would provide the medical oversight and coordinate with that. People would get in-person evaluations. We would bring medications to them as well. And if they were stable enough to not need an in-person provider evaluation each day, then they would get a phone call by a medical provider instead. We have chaplains working with us, Navajo interpreter, Zuni interpreters, Native medicine, blessed healing herbs, that we could distribute those to the patients, who could warm up water to make tea in their microwaves, and could still maintain many of their cultural beliefs throughout the course of their isolation as well, which was hugely important, as many of them were losing family members outside of isolation. And we had a wonderful iPad program, not only for group visits, meetings, telemedicine, but as well as connecting with family on the outside as well, which was hugely helpful for individuals to try to allow them to stay inside.

Jennie Wei: We'll just conclude by saying that I think what this program has taught us is that people obviously, those that were most vulnerable were hit hard by the pandemic. And we realized that, we as a community, really need to be focusing more on these, these have been existing issues for decades. And what we found out is that housing first works, that if you actually are able to provide folks with the basic necessities, they're able to start to work towards more positive goals and contribute positively to society. We were actually able to get over 45 people into inpatient rehab programs, alcohol rehab programs across the country through just having them be stable in a place for a moment where we can get them to fill out their application, the lab work, et cetera. So these are just some pictures of our patients' artwork, and they were incredibly talented. This was one that was given to one of our volunteer staff, ahe'hee means thank you in Navajo. And then finally, just wanting to say this is a, a letter that was sent to us by one of our patients who was being discharged to the rehab program. And essentially what he's saying, he's thanking us for helping him. He has an addiction problem. And the first responders helped by talking to him and connecting him with a treatment program. A healing center is what he calls it. So this is just the list of all the collaborators. It looks like an intimidating list, but realizing that it's really just one person behind each of these big organizations that needs that connection to be able to put together these important programs for our community. I'll stop there, and I'm happy to take questions at the end as well.

Margaret Bourdeaux: It's fantastic. I have to say I'm so moved every time you tell the story. And I think it's actually a perfect transition to Dr. Bilmes because when we're thinking about investing in these types of programs, we're thinking about not just the short game but the long game, how do we bring the crisis to heal as quickly as possible, but also, how does that

translate into building out a public health sort of system approach that really does underpin the health of our communities going forward, and our people going forward. And so, Dr. Bilmes, I know you often say you come in to do the money talk, and that's so critical, that's so critical now. So I'll hand it over to you.

Linda Bilmes: So thank you so much. This is really an amazing number of sessions, and very moving and very, very humbling to listen to. So usually, I come on at the end of panels, and usually Dr. Gloom saying that the wonderful ideas being discussed are expensive, and that there is no way to pay for them. In this case today, I'm in the kind of unusual position of delivering some good news, which is that this kind of program is at least partially self-amortizing, that there is actually likely to be funding that can be used for it. And that this is a pretty cost-effective way of spending public funds. And this is based on some research that we did in Massachusetts. I'm going to share my screen here. We here now, whoops. I'm going to start from the beginning here. This is based on some research we did in Massachusetts, where we have the kind of audacious idea that actually this program might even pay for itself. And so just to recap the key points. As we know, and as we've heard, and read these isolation and quarantine programs are, can be effective at reducing transmission. We've seen that historically, and certainly in Korea and Germany and elsewhere this time around. And as Margaret pointed out, this is likely to become even more important now as new outbreaks kind of crop up, and we are in a whack-a-mole world where we're trying to contain such outbreaks. But the key obstacle to compliance is really financial, and people can't afford it or they can't afford the wraparound services or they can't afford caring for others. And so when we think about this, we kind of have to think about it in terms of what are the costs and the benefits of providing a program like this. So based on the cost model that I will just very briefly outline to you in Massachusetts, we found that the total cost of a supported isolation quarantine program between February 1st and August are 211 days, just modeling that that would be the remaining days of the pandemic, would be from 300 to 570 million, depending on the rate of transmission and the number of cases per day and the number of contacts that each individual had. However, that may seem like a large number, but it's actually not such a large number, because the reduced transmission offsets the cost to the state. In Massachusetts, we found that the cost to the state of providing medical care was around $2,500 per person, of which 43% to 50% is borne by the state. And the actual cost of providing a supported quarantine program was lower than that. And finally, the good news, which I'll show you at the end is that there's actually a lot of money in the proposed federal stimulus bill which is likely to pass, which is a usable specifically for things that would include contact tracing and supported quarantine, and states who'll pretty soon be in the fairly unusual position themselves are trying to figure out how to allocate these funds and trying to understand what are the most cost-effective ways to treat and to prevent transmission, particularly in underserved communities. So just to take a quick kind of look at our model. We modeled in Massachusetts, found that a seven-day quarantine cost, the weighted average was about $403 per person, which is not very high. That is assuming that 95% would quarantine at home, and that 5% would be quarantining in facilities. So the facility costs would be higher, about $1,300 per person over the course of the seven days at about $385 for the at-home quarantine costs. And this is based on the idea that we would pay people $50 a day, which is the same amount that we pay for jury duty to do the public service of being able to quarantine at home. And this is

interestingly, there is a 1938 law on the books in Massachusetts, which allows for payment for quarantine, which in today's money is quite close to $50 a day. Now this assumes that there would be, we based this model on looking at the average transmission rates, and average contacts per day, and average daily cases over the last nine months. So this basically assumes that we would have between 500,000, which would be kind of the low end to 1.3 million people that would require a quarantine, that includes the infected individuals plus 4.25 contacts per person. And as I showed the cost of this, on average would be 2,260, which is below the actual $2,500 medical cost. So given the fact that we are at the lower end and given that we have a reasonable vaccine rollout happening, I mean, that's a big assumption, but assuming that that is the case. And we're looking at probably in Massachusetts, something around the order of $300, $350 million in cost. Now, if we look at that, one of the first questions is, what is the return on investment on that? Or how cost-effective is that use of money? So to try and answer that question, we took a look prospectively at a kind of counterfactual to try and ask, if we didn't do this, what would be the cost? So we asked what would be the likely medical bill? I mean, using the average number of cases per day over the last few months, which has been 1,200 on average, in fact, yesterday was very close to that in Massachusetts, and spreading at the average transmission rate from 2020, we found that the total medical cost in the state alone would be 1.1 billion, of which of course 43% would be borne by the state. And we found that, if the program could reduce the transmission rate even for one day of this group, which would be 1,200 people plus their contacts, there would be significant savings to a $300 million program. And even at lower rates of transmission, even at significantly lower rates of transmission, there would still be savings, because every additional case avoided is essentially money saved. And this was a very narrow way of considering the counterfactual, because we didn't include a number of the costs that the speakers outlined today, for example, we were just hearing about the reduced cost potentially of treating alcoholism due to the benefits of having people in facilities during the transition. And there are a whole range of costs which are in economics kind of packaged under the cost of exhaustion, which include the cost of paying rent or not having money for rent, the cost of running out of medications and so forth, which are associated with not having these quarantined wraparound services. I finally want to point out that we actually are, the really good news, Massachusetts has, this is just one state, but we've obviously spent overall a huge amount of money so far in things like, this is the Massachusetts rate, where we've spent almost $1.1 billion already on PPE and hospitals and supplemental payments to hospitals and $66 to $100 million on contact tracing. But we haven't really leveraged the full value of this. We haven't gotten the full bang for the buck, particularly out of the contract tracing money because of the lack of clear spending on setting up the supported quarantine and wraparound services. And we are about to have a situation where funding in the Stimulus Bill provides in addition to a significant amount of general state and local aid, there's $46 billion specifically targeted toward testing contact tracing and mitigation, of which the things we're talking about today would fall particularly into this area, and particularly in medically underserved areas. So states are pretty soon going to find themselves in the really happy, but sort of complicated position of trying to figure out, where is the best allocation of the marginal dollar and how do we prioritize that? So I would suggest that probably the spending priorities are around helping underserved communities, preventing transmission, and spending in such a way that has offsets to the state, and has savings. The supported quarantine that we've heard

about today falls, absolutely, ticks all three boxes. And so it was probably one of the most cost-effective ways to fight the remainder of the pandemic in a way that achieves goals, what you could call financially a sort of very positive return on investment for every public dollar that expended. So our paper, which provides this was out today. This was a paper written, led certainly by Dr. Bourdeaux and by my amazing student, Jessica Kaushal and others, Annmarie Sasdi, Megan Mishra, and Anne Hoyt. And we have a pretty robust financial model, both for the cost and for the quarantine, which is available by request, which any state could adapt to their own costs. So thank you very much.

Margaret Bourdeaux: Awesome. Thanks so much. It is good to get good news from somebody that knows something about money. It will be whiplash, I will tell you, Dr. Bilmes, for those of us in public health and those of us who've been really chomping at the health equity bit for a long time to kind of be in this moment of like, "Oh, wait, there is funding available, and how should we spend it?" So I think that's fabulous. I would love to have everybody, if you can, turn on their video and we can do some of the question and answer. I think our audience has few. I see Mary Gray, it's awesome. You always ask the most astute questions here in the question and answer box. I think I'm going to invoke a little bit of the host privilege in modifying a bit of your questions, Mary, around, especially the first question, because it does get to something that I struggle with a little bit, and I wonder how it can be worked out a bit better. So there seems to be sort of a tension. At least I noticed it in Massachusetts, where you want to make use of community members who really know their communities well and the community-based organizations that they are often involved with, that are really tailored to potentially meeting the needs of community members. But as you transition over to trying to build out and have a bit more standardized approach and make sure that everyone and every community has access to high-quality services, there becomes an issue, where I have felt concerned a bit in Massachusetts that, gosh, we are leaning in on the community resources of some of the most impoverished communities in order to support people in quarantine/isolation. Okay, it's wonderful if they happen to have an amazing food bank. Okay, great, wonderful. But what about the community that is also poor that does not have such an awesome robust food bank? Can we start to both make sure that we're leveraging community-based organizations and community members with the expertise and knowledge about their communities while also making sure that we are applying a high standard of support across the board? I don't know. I'll ask, Dr. Johnson, you first and then Dr. Lozada and Wei, maybe you guys have some insight.

Amanda K. Johnson: Yeah, I can try taking this first, and I'm sure there'll be so much that others want to chime in about. But I think one of the ways that we've approached this in New York City is by saying, for example, let's take the case of food, we are going to use one of our city agencies that is highly effective as an operator to set a standard for the delivery that people should be able to expect, will get to you within 48 hours. If we need to do a triage order, we can rush it. But it's through those partnerships and the management of those partnerships that we're going to be able to meet the local needs. So the reason that we're able to be– provide this range of services is because of the vendor contract management capacity that DSNY, the Department of Sanitation possesses. I think if you want to take the example of our Resource Navigator Program, it's managed by a city office, but then contracts with CBOs that span all five boroughs

that have different language capacities. And they get to tap in, of course to those city resources when they're available and with paid sick leave, of course, the state and federal resources. At the same time, if they find shortfalls in what's available locally, the apparatus that we have around HRO allows us to provide them additional funding to kind of build them up in areas where they are small, so that you aren't punished by where you live in the city, which is just going to perpetuate a lot of the disparities that led to the situation we're in to begin with. I think another thing that's really a point of pride for the Resource Navigation Program in particular is the jobs that we are creating. And so the Housing Recovery Office has this particular mandate for developing careers for people, for employing people. And so to be able to say we created 400 plus jobs for people from the community, expanding the capacity of these CBOs to hire and employ people is another way that we're trying to build up and invest in the places that have been hardest hit by the pandemic. And something that is on our mind, we are also really excited about the expansion into mitigation services, and what that means for our ability to continue some of these that's just part of the ongoing response to COVID. And we're thinking about what is the next iteration of this core that we've been able to build up, this workforce, because they provide so much value, and it would be a shame to lose the knowledge and skills that they've developed in the past year.

Margaret Bourdeaux: Oh, community health workers, here we come. Dr. Lozada and Dr. Wei, do you want to chime in on that?

Jennie Wei: Yeah, I think I echo a lot of what Dr. Johnson said. We really try to keep things local. I think on the one hand it could be perceived as a strain, but on the other hand, we were able to provide a lot of employment for the restaurants in town that were helping to deliver breakfast, lunch and dinner, along with the hotel and support staff. I think that they were all extremely, and continue to be extremely grateful that they're busy, and they continue to get a paycheck. The one other thing I wanted to highlight is that we at Gallup Indian Medical Center, we are going out to do check-ins with folks, and we do bill them as medical visits. So that's one of the other things to try to advocate for in partnership with the local medical centers, is if they can kind of bill these home visits, especially around this time last year, we weren't doing any visits. And so that was actually really helpful to be able to do, I don't know, 10,000 plus.

Mia Lozada: I just got the number, 34,000 home visits is what it's counted as.

Margaret Bourdeaux: Fantastic. I mean, it really is heartening, to see after this very dark year, this, I don't know “rain shoots,” am I allowed to use that? Of like maybe we're going to emerge from this with a much more sophisticated and kinder and more built out health system and public health system. And one of the things that I have really been thinking about with the Berkman Klein Center folks, including Mary Gray is this issue around the, what is the information and tech infrastructure that we want for our public health system going forward? How do we want it to interdigitate with our medical care system, and how do we want it to be structured so that that social determinants of health, and things that are impacting the health of patients that are not sort of popping up routinely in medical records, that we start to have that system in place so that we have some communication between public health and our medical

care system. Right now, so much of our IT systems are run off fax machines and very old systems, which are very cumbersome. I just wondered either New York team, Navajo team, whether you had some thoughts about or even dared yourself to think about what are the systems you'd like to build. And I think Mary Gray's specific question was about the Resource Navigator system being used. And she had a specific question about, what were the features that made the pain of implementing it worth it. So maybe, Amanda, we can start with you and then zoom back out on the bigger question of IT.

Amanda K. Johnson: Sure, I can start by talking a little bit about the Resource Navigator CRM platform. So in the sprint to come up with a contact tracing platform that was going to be ready on June 1st, a lot of attention was paid to making sure that we had a script that worked for our case investigators, that worked for the monitors, the folks who call people on subsequent days of their isolation and quarantine. And we wanted to be able to launch the Resource Navigation program at the same day, but just the reality of the work is, we only have so many developers, we only have so many system architects to go around. So the priority was getting a really strong contact tracing platform in place. And the Resource Navigation program was able to function in its own separate system. Once some bandwidth opened up, and people also really just saw how popular the Resource Navigation program was, I mentioned before that we were really excited to celebrate 11,000 plus guests to our isolation/quarantine hotels. But to put that into perspective, we have shipped out 220 some thousand Take Care Packages over the course of our program, and Take Care Packages only launched in August. And then the Resource Navigators have completed upwards of 190,000 referrals. So people are still doing this at home. That is their preference, and that is often their reality. So we wanted to make sure that we got the same benefits that the contact tracing program was afforded by their use of the platform. So I'd say there's probably three areas. We used to have, and we still have this meeting every week between the tracing platform and the Take Care platform, just to talk about handoffs. And now we can talk a little bit less about handoffs, because by working in the same system, and anyone who's been in a medical record at any point understands and feels the pain. We now can see what were the interactions leading up to this. We can see your case notes. So it just provides a more complete picture of the situation that you're trying to intervene on, like why was this particular need, what is my best chance of getting back in touch with this person? Because unfortunately we have to use the word navigation, because things can be so thorny and hard to come by, but we want to do that work as well and as completely as possible. It also afforded us a better view into households. So we could see, if I can't contact this person, if there's somebody else in the household that I can assist or find another way to get in touch with this person, really, what is the household data, as opposed to just what is this individual's need? The more concrete operational benefits is that we're spending a lot of time doing manual assignments, this person has this language preference, they live in this zip code, they should go to this community-based organization and this Resource Navigator. This is all stuff that can be automated. And again, we can invest more time into thinking about programming, and then managing easing work in process. So what has not been touched within 24 hours, what has been opened but hasn't been resolved in 48 hours, just having a lens into where that stands, and who is facing more challenges, and then being able to unpack why those are is really important. I mentioned before that CBOs preferentially serve a particular neighborhood. So you

don't want to penalize poor performers without really understanding what could be driving that change in performance. If it takes more time and it takes more effort to close the case for a person, you don't want to hold them to the same standard as the CBO, which has a particular resource that's just more readily available in their neighborhood. So that brings us to my last point, which I think was the benefit of this platform, is being able to pull in some of that really good contact tracing data around demographics, around neighborhood, around specific case or contact, what day in their isolation are they. Being able to actually do stratifications by race and ethnicity and language, really hold ourselves accountable to achieving what it is we think that we are doing. That has been a really impressive benefit of being able to pair, not have to work so hard to match contact tracing data with Resource Navigation, by just treating it as part of one workflow.

Margaret Bourdeaux: That's fantastic. Dr. Lozada, maybe you want to, okay.

Mia Lozada: I don't have a significant amount to add. I think that was excellent from Dr. Johnson. I think the one thing that we've found in terms of rather than connecting systems is really leveraging our own electronic health record here and showing how many of these other kind of touches with healthcare or with a system can all be really added into our existing EHR. So a lot of these home visits, what our CHRs, our community health representatives are doing, all of that, if we're keeping it in a more centralized place, then we can see all of those touches even within our EHR. We're unique and lucky in that we are mainly one system to take care of a community as opposed to numerous different hospitals and clinics where the care is slightly more, by nature, more disjointed. So I think we've found a value in keeping everything as centralized as possible.

Margaret Bourdeaux: That's fantastic. I know there's a lot more questions, we are at time. I would like to just thank our incredible guests. I encourage anyone listening, who wants to continue the conversation to certainly reach out to us, to me, super happy to set up sidebar conversations. There's probably a lot more to be said about the money. There's a lot more to be said about the eligibility criteria and accessing the facility-based services. So just know that we are here to make that happen if folks want to follow up. Thank you so, so much to all of our guests and our experts.