Transcript from February 24, 2021: Data Driven Public Health Response to Pandemics: Maximizing Disease Surveillance, Genomic Sequencing, and Epidemic Forecasting

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00:00:03.120 --> 00:00:17.970
Andrea Lapp: Welcome to today's webinar data driven public health response to pandemics maximizing disease surveillance genomic sequencing and epidemic forecasting our moderator Anita Cicero will now begin.

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00:00:19.590 --> 00:00:32.640
Anita Cicero: Thank you, Andrea and welcome good morning everyone thanks for joining us today for the Capitol Hill steering committee on pandemic preparedness and health, security, my name is Anita Cicero and i'm deputy director at the Johns Hopkins Center for health security.

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00:00:33.660 --> 00:00:42.450
Anita Cicero: The Capitol Hill Steering Committee is a bipartisan effort that our Center launched in with support of Congressional leaders and former administration officials.

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00:00:42.960 --> 00:00:56.850
Anita Cicero: all of whom are committed to making the country in the world more prepared from the greatest health security threats that we all face, and we are very grateful that this effort, and the committee is supported by the open plan to be project.

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00:00:58.290 --> 00:01:07.140
Anita Cicero: The coven 19 pandemic has really underscored our needs the need for advanced disease surveillance capabilities, both domestically and abroad.

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00:01:07.590 --> 00:01:13.830
Anita Cicero: Timely EPI data and sequencing data are proving to be very crucial to informing our response.

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00:01:14.430 --> 00:01:24.360
Anita Cicero: And we now also are faced with the recent emergence of SARS coby to variance with a potential for increased transmission, or possibly even immune escape.

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00:01:25.170 --> 00:01:34.590
Anita Cicero: This really highlights and has highlighted some of the shortcomings and our domestic ability to monitor variant prevalence and emergence and and to respond accordingly.

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00:01:35.940 --> 00:01:47.340
Anita Cicero: The effective vaccines that are being rolled out now have provided a light at the end of our coven tunnel, but now these variants of concern could really lengthen the tunnel unless we stay ahead of them.

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00:01:47.700 --> 00:01:59.850
Anita Cicero: Three of the most concerning ones have precipitated resurgence, is in the communities where they became dominant and, of course, new variants of concerned could emerge, and likewise slow down our response.

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00:02:00.360 --> 00:02:11.490
Anita Cicero: So for today's webinar we're going to discuss the current status of domestic disease surveillance and open up a dialogue about how we can be better prepared for future public health threats.

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00:02:12.840 --> 00:02:23.730
Anita Cicero: we're joined today by one of our steering committee founding members, Dr Stephen read and also three experts doctors caitlin rivers Dave o'connor and dylan George.

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00:02:24.390 --> 00:02:27.300
Anita Cicero: And after we hear from the panelists we're going to be taking.

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00:02:28.110 --> 00:02:37.200
Anita Cicero: we're going to go to the Q amp a and take questions from the audience and we'll get to as many questions as we can, so please do submit questions into the Q amp a box.

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00:02:37.980 --> 00:02:51.990
Anita Cicero: So I am pleased now to welcome opening remarks from Dr Stephen read a founding member of our Steering Committee and also the former deputy director for public health service and implementation science at CDC Steve, the floor is yours.

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00:02:52.410 --> 00:03:09.150
Steve Redd: Thanks very much and welcome to this morning's webinar i'd like to thank everybody for participating we had 521 registrants this morning and I think we'll probably have a few more so we're close to a record number of participants.

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00:03:10.500 --> 00:03:31.650
Steve Redd: The topic that we're going to address today is is not a new topic it's an area where CDC has been doing work over the past decade in sequencing with the advanced molecular detection initiative and then since 2013 in the surveillance modernization activity.

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00:03:33.420 --> 00:03:46.500
Steve Redd: When we think about a pandemic, we recognize the need to operate at speed and scale to to keep pace with the pandemic and that's really true of any of any major public health response.

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00:03:47.760 --> 00:04:05.400
Steve Redd: i'd like to for for us to kind of think of this in three different components, just as a framing mechanism, the first has to do with collection of information, the second with analysis and, lastly, with using those analyses to make policy.

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00:04:06.510 --> 00:04:09.090
Steve Redd: From from the standpoint of collecting data.

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00:04:10.200 --> 00:04:16.470
Steve Redd: The idea of the first mile is something that I think is really critical guess shortening.

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00:04:16.950 --> 00:04:30.120
Steve Redd: The interval between an event happening an infection occurring hospitalization or vaccination being given and getting that information into the public health system so that it can go to the next step and being out analyzed.

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00:04:31.350 --> 00:04:49.740
Steve Redd: we've we've seen challenges in incompleteness that are long standing in particular collecting information on race and ethnicity or collecting information or an occupation, I think we all know that more complete information in those areas would have been very helpful in the response.

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00:04:51.480 --> 00:04:57.990
Steve Redd: From the standpoint of analysis, we need to make sure that we have the right priorities tools and the staffing.

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00:04:58.380 --> 00:05:05.820
Steve Redd: To to make sure that that information that's being collected can be converted into knowledge that can then be used in the policy making process.

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00:05:06.450 --> 00:05:19.410
Steve Redd: And for policymaking, I think this is what we're hearing so much about science being in lead and science guiding response, I think that that is really making sure that those analyses are usable at the policy level.

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00:05:20.430 --> 00:05:24.180
Steve Redd: And that includes communicating why decisions are being made.

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00:05:25.200 --> 00:05:35.730
Steve Redd: Today, I will hear about immediate priorities for the coven response, in particular the role that virus variance could play in the future.

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00:05:36.180 --> 00:05:41.700
Steve Redd: The immediate future of the pandemic I think another really important question i'm not sure what you're about it but.

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00:05:42.540 --> 00:06:01.260
Steve Redd: It is related to variance where where are we in relation to that herd immunity threshold and then we'll also hear about issues in the longer term, how can we automate the system to ease this issue of scaling and create the capacity to anticipate rather than react.

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00:06:09.840 --> 00:06:16.290
Anita Cicero: Thank you so much Steve really appreciate those comments, I think it sets the stage well for the discussion that's coming.

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00:06:17.610 --> 00:06:27.600
Anita Cicero: So, for now, are like to introduce our next speaker Dr caitlin rivers caitlin is a senior scholar at the Johns Hopkins Center for health, security and also an assistant Professor.

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00:06:27.900 --> 00:06:32.730
Anita Cicero: At the Department of Health and Environmental engineering at Johns Hopkins Bloomberg school of public health.

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00:06:33.330 --> 00:06:47.400
Anita Cicero: Her research focuses on improving public health preparedness and response, particularly by improving capabilities for outbreak science and and infectious disease modeling to support health decision making, so caitlin now over to you.

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00:06:48.060 --> 00:06:53.670
Caitlin Rivers: Thanks so much, I want to start by providing you an update of the current status of the variance of concern.

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00:06:54.090 --> 00:07:01.140
Caitlin Rivers: There are three that we are watching closely the one was first identified in the United Kingdom it's known as be 117.

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00:07:01.590 --> 00:07:04.800
Caitlin Rivers: And it's notable because it spreads more easily between people.

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00:07:05.250 --> 00:07:16.830
Caitlin Rivers: This particular variant is of interest because it precipitated, as we heard from Anita earlier a severe resurgence in the UK during the winter and actually prompted a lock down there in order to regain control.

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00:07:17.700 --> 00:07:27.270
Caitlin Rivers: Here in the United States almost 1900 that is 1900 cases have been identified in 45 states and so it's pretty widely distributed across the country.

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00:07:27.630 --> 00:07:33.600
Caitlin Rivers: And we expect the fraction of cases that are attributable to be 117 to grow to become dominant over time.

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00:07:33.960 --> 00:07:43.590
Caitlin Rivers: Right now it's probably on the order of five to 10% but in places where the this variant has become established, it has gone on to take up a bigger and bigger share of cases.

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00:07:44.430 --> 00:07:51.990
Caitlin Rivers: There are two other variants that we're tracking closely one was first identified in South Africa and another first identified in Brazil.

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00:07:52.800 --> 00:08:02.910
Caitlin Rivers: And those are notable because they show some immune escape, which means they may not be a good match for the current vaccines and they may make reinfection possible for people who have already been infected and recovered.

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00:08:03.720 --> 00:08:17.070
Caitlin Rivers: Right now about 50 cases of those variants combined have been identified in the US across about a dozen states and so they're circulating at much lower levels, we think, but are clearly present and clearly distributed across the country.

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00:08:18.000 --> 00:08:26.190
Caitlin Rivers: The UK identified variant be 117 has a head start and does spread more easily between people, and so I think that's the one to watch for now.

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00:08:26.430 --> 00:08:36.330
Caitlin Rivers: But the two immune escape variants may cause us more trouble over the long term and we may have to update our vaccines and our drugs to be a better match, just like we do for seasonal influenza.

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00:08:37.260 --> 00:08:45.540
Caitlin Rivers: And that's broadly true and it's not just these three variants that we're worried about, although these are the ones that we have at hand it's really the process.

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00:08:45.810 --> 00:08:54.570
Caitlin Rivers: of identifying variance and making sure that our public health responses updated accordingly, that is of particular interest in making sure we have the infrastructure to adapt.

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00:08:55.560 --> 00:09:01.170
Caitlin Rivers: The most important thing we need to be doing right now is to continue the policies and practices that we know slow transmission.

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00:09:01.650 --> 00:09:11.310
Caitlin Rivers: The lower we can push our case counts the more protected, we will be both against the pandemic broadly and against these new variants specifically and the emergence of any new variants.

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00:09:11.640 --> 00:09:17.910
Caitlin Rivers: That means keeping in place the mask requirements, the social distancing the avoiding gatherings that we know work to slow transmission.

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00:09:18.150 --> 00:09:31.020
Caitlin Rivers: While we roll out vaccines that's The good news is, we now have vaccines, and so there is an endpoint there is a way that we will be able to control transmission outside of keeping these measures in place forever, but for now, they are very much still needed.

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00:09:32.160 --> 00:09:43.170
Caitlin Rivers: We also need to improve our ability to identify and track these new barons through genomic surveillance CDC has a program underway to do just this, but we need to go even bigger, we need to scale that Program.

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00:09:43.560 --> 00:09:48.060
Caitlin Rivers: We sequence a fraction of 1% of our cases and it's it's not enough.

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00:09:48.540 --> 00:09:59.970
Caitlin Rivers: In contrast, the United Kingdom sequences about 10% of their cases and that capacity is what allowed them to identify this new variant to track it over time and to identify that it was more transmissible.

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00:10:00.660 --> 00:10:13.200
Caitlin Rivers: it's that capacity that we need to build here and the goal is really to know early if the virus has changed in a way that will require us to adapt particularly again when it comes to vaccines and drugs, we want to make sure that we stay ahead.

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00:10:13.740 --> 00:10:20.790
Caitlin Rivers: And it's not just the sequencing it's not just looking closely at the virus for changes that allows us to to have in place this kind of infrastructure.

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00:10:21.240 --> 00:10:29.190
Caitlin Rivers: it's also the bioinformatics to analyze data and the scientists to test the virus, to see if it has any meaningful changes to public health.

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00:10:29.520 --> 00:10:35.160
Caitlin Rivers: oftentimes variants don't have any meaningful impact of public health it's hard to know which is which, unless you test them.

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00:10:35.970 --> 00:10:43.380
Caitlin Rivers: The good news is that there are substantial funding for this and the draft supplemental package that's currently going through Congress and that money will be really critical for ensuring.

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00:10:43.620 --> 00:10:50.760
Caitlin Rivers: That we have the genomic surveillance in place to guard to both get us through this pandemic and also to guard against the next pandemic.

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00:10:51.810 --> 00:10:54.930
Caitlin Rivers: Another priority i'd like to highlight quickly as around public health data.

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00:10:55.350 --> 00:11:03.570
Caitlin Rivers: We often think of contact tracing and case investigation as a means to break chains of transmission and it is it's very useful for that, but it's also a key source of data.

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00:11:03.840 --> 00:11:19.980
Caitlin Rivers: If we can prioritize variant cases for contact tracing in case investigation, we can compare variant clusters or variant chains of transmission to the normal virus that we've been living with and be able, in that way, to tell whether variants that we identify have any meaningful changes.

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00:11:21.030 --> 00:11:29.520
Caitlin Rivers: For individuals for constituents, the main thing to know is that the pandemic has improved a lot over the last six weeks and we're all very grateful for that trend.

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00:11:29.820 --> 00:11:33.960
Caitlin Rivers: But it's important that we keep up the masking and the distancing and the avoiding gatherings.

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00:11:34.380 --> 00:11:38.610
Caitlin Rivers: What we're doing is working to slow transmission and we need to stay the course so that we can get more.

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00:11:39.000 --> 00:11:49.290
Caitlin Rivers: So that we can buy more time to get the vaccines rolled out to as many people as possible and it's important also to get the vaccine when you were offered it because they are they're very safe and effective products.

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00:11:50.400 --> 00:11:52.950
Caitlin Rivers: I will pause there now and turn it over to the media.

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00:11:53.880 --> 00:12:00.930
Anita Cicero: Good Thank you so much caitlin and now from Wisconsin our next speaker is Dr Dave o'connor.

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00:12:01.260 --> 00:12:09.540
Anita Cicero: Dr Connor is a university of Wisconsin medical foundation professor of pathology and laboratory medicine at the University of Wisconsin Madison.

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00:12:10.080 --> 00:12:18.210
Anita Cicero: is like his laboratory studies, the interplay between viral pathogenesis genomics and immunity in Dane county Wisconsin.

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00:12:18.870 --> 00:12:35.160
Anita Cicero: Dave and his colleagues have sequence more than 5% of the SARS coby to test positive cases, since the start of the epidemic and i've introduced antigen testing for symptomatic individuals into more than 100 Dane county K through 12 schools Dave, the floor is yours.

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00:12:35.880 --> 00:12:44.880
Dave O'Connor: All right, thank you, Anita for the introduction and thank you to everyone who has joined us today to discuss genomic surveillance as a critical aspect of pandemic preparedness and response.

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00:12:45.270 --> 00:12:55.320
Dave O'Connor: There are three things I want you to take away from my remarks today with sufficient financial and regulatory investment source code to sequencing at the scale being discussed is feasible.

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00:12:55.860 --> 00:13:05.220
Dave O'Connor: But if sequencing is going to be an actionable tool for public health, a 14 day turnaround time from sample collection to sequence availability should be strongly incentivized.

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00:13:05.490 --> 00:13:09.990
Dave O'Connor: And we need different types of sequencing labs to contribute to this effort in different ways.

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00:13:10.500 --> 00:13:19.170
Dave O'Connor: And as you said, my colleagues and I have been working with state and local partners to sequence approximately 5% of all positive cases in the Madison area.

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00:13:19.440 --> 00:13:24.090
Dave O'Connor: showing that expanding to this level of sequencing and beyond, is entirely possible.

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00:13:24.600 --> 00:13:35.550
Dave O'Connor: Our academic labs with two graduate students performing the majority of the work and data analysis of sequence more than 3500 samples, what would be needed to sequence even more.

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00:13:36.090 --> 00:13:44.250
Dave O'Connor: Yes, we need more equipment to process samples and chemicals to perform sequencing but also staffing to coordinate sample collection from testing centers.

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00:13:44.430 --> 00:13:52.290
Dave O'Connor: managed specimen inventories generate sequence data and biological computing experts to analyze interpret and share results.

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00:13:53.250 --> 00:14:01.590
Dave O'Connor: Why should the US bother investing in this, because it gives us confidence that we are detecting worrisome variants soon after they emerge in our Community.

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00:14:01.830 --> 00:14:13.050
Dave O'Connor: If we find them intensive contact racing can be used to identify others who might be part of the same transmission network allowing our partners in public health to extinguish these embers before they become a fire.

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00:14:13.530 --> 00:14:23.670
Dave O'Connor: Consequently, timely collection of sequencing results is essential, since the start of the 2021 year and awareness of the variance of concern the caitlyn described.

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00:14:23.940 --> 00:14:35.310
Dave O'Connor: we've decreased our average turnaround time to 12 days last week, the first be 117 variant of concern in our county was announced publicly seven days after specimen collection.

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00:14:35.670 --> 00:14:41.670
Dave O'Connor: uw Madison news media and local public health all released messaging really.

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00:14:42.090 --> 00:14:47.580
Dave O'Connor: enforcing the importance of taking precautions to stop transmission, while this variant is still rare in our Community.

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00:14:47.940 --> 00:15:00.000
Dave O'Connor: Contact racers are now working hard to find this individuals contacts to prevent this virus from spreading in the race between infections and injections with vaccines, we want to give vaccines, the best chance of winning.

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00:15:00.420 --> 00:15:03.300
Dave O'Connor: And this needs to be replicated on a national scale.

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00:15:03.720 --> 00:15:16.380
Dave O'Connor: Like milk and fresh fish sequences shouldn't sit on the shelf for many weeks, I would suggest that sharing sequences with public health authorities within 14 days of sample collection should be incentivized in a national surveillance.

92
00:15:16.860 --> 00:15:23.310
Dave O'Connor: program in the same way that cms reimburses testing labs that return results quickly at a higher level than those that do not.

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00:15:23.640 --> 00:15:37.050
Dave O'Connor: And finally, we need coordination starting the sequence ours could be two is difficult early on, we had problems obtaining samples from testing providers and overcoming institutional concerns about sharing data without violating hipaa.

94
00:15:37.680 --> 00:15:45.330
Dave O'Connor: national regulations need to explicitly permit testing labs to publicly share minimal sets of information about samples.

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00:15:45.570 --> 00:15:57.930
Dave O'Connor: that are necessary to contextualize the results, such as where and when the samples were collected, building on what Steve said data on race and ethnicity, are not typically shareable as part of these data sets should they be.

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00:15:58.410 --> 00:16:03.510
Dave O'Connor: The CDC can and should ensure that federal policies encouraged specimen and information sharing.

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00:16:03.960 --> 00:16:11.820
Dave O'Connor: Besides regulations, we also need to think strategically, about which samples need to be sequenced I suggest that there should be two channels.

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00:16:12.090 --> 00:16:17.370
Dave O'Connor: A lot of bit of attention has been paid to percentages 5% 10% 15%.

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00:16:17.670 --> 00:16:28.920
Dave O'Connor: And yes, sampling of at least 5% of positive cases in an unbiased and representative way is important because it shines a more accurate spotlight on viruses that are in our communities.

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00:16:29.190 --> 00:16:35.430
Dave O'Connor: How do we do this, we must engage different types of sequencing providers with their various types of expertise.

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00:16:35.640 --> 00:16:44.850
Dave O'Connor: Large companies public health labs and academic labs like ours, having state and local health departments at the nexus of using sequencing results to improve public health.

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00:16:45.270 --> 00:16:50.250
Dave O'Connor: In addition to surveillance sequencing I think there should be a separate channel for focused sequencing.

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00:16:50.490 --> 00:17:01.350
Dave O'Connor: of samples that are more likely to harbor unusual variants, such as those from returning international travelers people with persistent chronic infections and people who are infected multiple times.

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00:17:01.620 --> 00:17:10.410
Dave O'Connor: Academic labs may have another specific role to play here, because they embed this specific technical expertise in the communities in which they are located.

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00:17:10.650 --> 00:17:18.840
Dave O'Connor: In Madison We work closely with our clinicians local and state health departments and other stakeholders to identify and quickly sequence such samples.

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00:17:19.110 --> 00:17:25.320
Dave O'Connor: This targeted sequencing of high value cases could be replicated in universities and medical schools nationwide.

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00:17:25.590 --> 00:17:36.780
Dave O'Connor: To summarize SARS could be to sequencing at the scale that is being discussed is feasible and essential it needs to be fast and it needs to engage lots of stakeholders to be maximally effective.

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00:17:37.020 --> 00:17:41.970
Dave O'Connor: If successful, it will position public health to respond with more agility not only to this.

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00:17:42.420 --> 00:17:55.110
Dave O'Connor: pandemic, but to future outbreaks and improve surveillance of evolving pathogens that are already in our communities such as AIDS, HIV influenza an antibiotic resistant bacteria, thank you very much for your attention, I need it back to you.

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00:17:55.920 --> 00:18:00.300
Anita Cicero: And thank you so much Dave for those detailed and actionable recommendations.

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00:18:01.200 --> 00:18:08.580
Anita Cicero: Our final speaker before the Q amp a is Dr Dillon George dylan is a Vice President and be next in in Q tel.

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00:18:08.970 --> 00:18:17.520
Anita Cicero: dylan provides strategic science and technical vision to strengthen the capacity within the US to counter biological threats specifically from those.

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00:18:17.880 --> 00:18:33.090
Anita Cicero: from infectious disease epidemics, whether natural accidental or intentional prior to joining the next Dr George served as a senior advisor for biological threat Defense under john holdren when he was director of the White House office of science and technology policy.

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00:18:34.560 --> 00:18:43.410
Anita Cicero: he's also worked at hhs within barda where he led a team that developed analytic approaches to assess risk from emerging infectious diseases and mass casualty events.

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00:18:43.800 --> 00:18:55.590
Anita Cicero: And he's worked at the Department of Defense on quantitatively anticipating and assessing infectious disease threats that would impact mission readiness and for self protection so dylan it's an honor to have you here.

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00:18:56.550 --> 00:19:06.960
Dylan George: Thanks Anita at the top of my comments I did want to take a brief moment to recognize the recent horrific milestone of exceeding 500,000 deaths in the United States i'm confident.

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00:19:07.380 --> 00:19:16.950
Dylan George: That there's people in the audience that have lost family or friends to coven and even though nothing I say will fill that nine hole left by those we lost.

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00:19:17.940 --> 00:19:29.220
Dylan George: I did want to take this brief moment to virtually stand with you and recognize your personal situation and thinking about this milestone and to honor the friends, I have lost.

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00:19:29.880 --> 00:19:42.510
Dylan George: Because of coven it has been a moment for me to revitalize my efforts in fighting the pandemic, so thank you very much for the opportunity to speak with you today, and I appreciate everything that everyone is doing on this call.

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00:19:43.770 --> 00:19:51.030
Dylan George: So to my comments data is an essential weapon in our fight against the virus, we are all painfully aware.

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00:19:51.480 --> 00:20:04.530
Dylan George: When a novel pathogen emerges, we do not have drugs or vaccines to protect us, and that has been the story of what has been happening with Code as as great and accomplishment as it is i'm not discounting what has been done with the.

122
00:20:05.610 --> 00:20:17.220
Dylan George: code vaccines, it is a modern medical miracle that we've been able to do it as fast as we have we are still a year into this pandemic people in communities are hurting vaccines and drugs have not helped us until recently.

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00:20:18.270 --> 00:20:23.790
Dylan George: But what has helped us in the fight against this virus public health interventions, I mean the things that Steve.

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00:20:24.180 --> 00:20:28.830
Dylan George: And caitlin talked about is wearing masks washing hands watching her distance staying at home.

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00:20:29.220 --> 00:20:36.150
Dylan George: These are the measures that have kept us safe, these are the public health interventions are critical tools in the fight and the pandemic.

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00:20:36.930 --> 00:20:45.480
Dylan George: data and analytics allow us to guide these interventions for maximum effect in bringing down those deaths and those.

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00:20:45.990 --> 00:20:52.200
Dylan George: People going into the hospital and saving us from having to too much undo damage on our economy as well.

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00:20:52.920 --> 00:21:08.250
Dylan George: The current data systems have slowed our response, they are not fit for purpose, unfortunately, the country has stumbled in using data and analytics to guide our response it's humbling that in a country that has transformed the world with data technology.

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00:21:09.330 --> 00:21:23.730
Dylan George: Our health care and our public health data technologies remain decades old and not fit for purpose this old system results in persistent inability to continuously turn data into decisions, and you know we're finding ourselves.

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00:21:25.110 --> 00:21:32.280
Dylan George: at the back end of this and a lot of ways we need modern approaches, we need better data and you better data technology and better analytics.

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00:21:33.480 --> 00:21:44.130
Dylan George: There I am encouraged that the current administration announced the intention to create an what is referred to as the national Center for epidemic forecasting and outbreak analytics.

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00:21:44.940 --> 00:21:54.450
Dylan George: The administration has also requested funding to support this effort, any American rescue plan and that request is making its way through appropriations language right now.

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00:21:55.290 --> 00:22:04.680
Dylan George: This Center is modeled after the Web national weather service and the ecosystem that is around that that supports that it will help public health officials to anticipate.

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00:22:05.160 --> 00:22:14.730
Dylan George: and respond to outbreaks before the grow into pandemics this capability must be developed to ensure the country is never caught again unprepared for responding to these outbreaks.

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00:22:15.300 --> 00:22:26.160
Dylan George: To be successful, the Center must enable three key functions, we need to get better data, or rather we need better R amp D to improve the models and how we're using them to.

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00:22:26.430 --> 00:22:35.160
Dylan George: forecast and to anticipate risk, we need to operationalize those data those those data architectures so that it's easy to use and it's.

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00:22:35.610 --> 00:22:43.140
Dylan George: We can swap in different components, very quickly, we also need decision support, we need to be able to provide an evidence base to the.

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00:22:43.830 --> 00:22:59.700
Dylan George: mayors and governors across the United States so that they can discriminate amongst many different policy options that they could use to fight a pandemic that's what happens with weather forecasting as well, and so that's why we were inspired by this going forward.

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00:23:00.750 --> 00:23:05.670
Dylan George: The epidemic forecasting and how brick science is as caitlyn mentioned is a growing field of epidemiology.

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00:23:06.480 --> 00:23:16.770
Dylan George: And that applies advanced analytics and data science to enhance decision making and all of this has been done to some extent in this pandemic, but not at the scale for maximum effect.

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00:23:17.760 --> 00:23:29.400
Dylan George: We need to supercharge data in a pandemic fight and the national Center for epidemic forecasting an outbreak analytics would professionalize this important work and it will save lives and will help us get back to work faster.

142
00:23:30.510 --> 00:23:34.770
Dylan George: So i'm very grateful for the opportunity to chat with you more about this, and thank you very much for.

143
00:23:35.820 --> 00:23:37.890
Dylan George: including me in the in the discussion back to you.

144
00:23:39.510 --> 00:23:45.870
Anita Cicero: Thanks so much dylan and now we're going to turn to the question and answer portion of today's webinar.

145
00:23:46.470 --> 00:23:52.740
Anita Cicero: A couple questions were submitted in advance so i'll read those first and then we'll we'll turn it over to the chat.

146
00:23:53.580 --> 00:24:00.300
Anita Cicero: Our first question today comes from Tory hall she's from the Department of legislative services in the Maryland General Assembly.

147
00:24:01.020 --> 00:24:13.080
Anita Cicero: And the question is given that much of the national strategy for testing and vaccination was delegated to states and then states in turn have delegated much of that to hospital systems and local jurisdictions within their borders.

148
00:24:13.620 --> 00:24:18.150
Anita Cicero: How do you think, from this point forward as a practical matter, we should act.

149
00:24:18.600 --> 00:24:29.220
Anita Cicero: To improve disease surveillance genomic sequencing an epidemic forecasting, I think the The idea is that it's so dispersed at this point, is it possible to have a more coordinated national effort.

150
00:24:30.030 --> 00:24:44.760
Anita Cicero: To panelists think that state policymakers ought to try to change the current trajectory or at this point is that is that strategy sort of baked in and state should just focus on getting people vaccinated and she's looking for some actionable steps and recommendations from the speakers.

151
00:24:46.800 --> 00:24:48.030
Anita Cicero: Anyone want to take that on.

152
00:24:50.130 --> 00:24:56.070
Caitlin Rivers: I can, maybe start by saying that vaccination is absolutely a priority and state and local public health departments.

153
00:24:56.400 --> 00:25:01.590
Caitlin Rivers: have their hands full even before the vaccine campaigns and certainly now it's really all hands on deck.

154
00:25:01.980 --> 00:25:09.330
Caitlin Rivers: One recommendation in this near term period for how you might be able to at least explore opportunities for increasing genomic surveillance.

155
00:25:09.600 --> 00:25:14.910
Caitlin Rivers: is to reach out to your state public health club and tend the academic institutions in your jurisdiction.

156
00:25:15.120 --> 00:25:24.840
Caitlin Rivers: That may be already doing sequencing and see if there are ways that you can coordinate or if there are barriers or challenges that you can help to overcome together to make this a more tractable priority.

157
00:25:25.230 --> 00:25:31.350
Caitlin Rivers: But certainly recognizing that there's a lot going on right now and Dave might have additional comments on this as well.

158
00:25:32.550 --> 00:25:39.390
Dave O'Connor: yeah we'll just building on that, I think that there are often silos that are built up between some of these different types of groups.

159
00:25:39.990 --> 00:25:50.490
Dave O'Connor: I was vaguely familiar of some of the people who worked in our local public health department before this year and now we're on speed dial with one another, and I think that that's something that.

160
00:25:51.210 --> 00:26:00.810
Dave O'Connor: is a barrier that has to be broken down for this to be efficient and that's one of the reasons why I suggested that I think that the State and local health departments really can be a nexus.

161
00:26:01.230 --> 00:26:06.540
Dave O'Connor: That sort of brings together the different types of expertise that are necessary to make the sequencing action well.

162
00:26:09.450 --> 00:26:10.680
Anita Cicero: Good thank thank you both.

163
00:26:11.700 --> 00:26:22.050
Anita Cicero: Our next question submitted in advance was from Scott mcnabb from emory university and he says, we believe the way forward is to collaborate with the Council of State and territorial.

164
00:26:22.050 --> 00:26:23.010
Dylan George: epidemiologist.

165
00:26:23.040 --> 00:26:37.830
Anita Cicero: To do the pilot of called integrated disease surveillance and response, the acronym is ids are in the United States, this is the answer to modernizing US public health surveillance and he's asking to the panelists agree with that.

166
00:26:40.920 --> 00:26:46.680
Dylan George: yeah I can jump in there it's like I don't know that the specific details ideas are, but I do know that.

167
00:26:47.310 --> 00:26:57.840
Dylan George: See the Council of State and territory epidemiologist and a handful of other organizations have been at the forefront at trying to advance our ability to have.

168
00:26:58.170 --> 00:27:07.140
Dylan George: interoperability between our healthcare system data systems and our public healthiness system so that we can actually have faster responses cst he has been.

169
00:27:07.680 --> 00:27:20.640
Dylan George: a champion of this effort and it's clearly something that needs to be moving forward it's it's affectionately referred to as data modernization this interoperability and it's it's something that needs to be developed and push forward more aggressively.

170
00:27:21.750 --> 00:27:34.020
Anita Cicero: Thanks dylan another one of our founding members for the Steering Committee, Dr Craig Vander wagon is actually online and we are going to go to him first meeting his MIC to ask another question.

171
00:27:34.530 --> 00:27:44.790
Craig Vanderwagen: Go ahead well well Thank you so much it's more just bringing to the attention some material that we've put into the chat box, and that is that.

172
00:27:45.270 --> 00:28:06.300
Craig Vanderwagen: Going with dylan's notion that modernization of the process and authorization of expanded research in this area and training of local and state staff on how to more effectively use this data was studied by the National Academy of Medicine.

173
00:28:07.710 --> 00:28:28.080
Craig Vanderwagen: And we finished, as the pandemic was unfolding and we provided a variety of recommendations with regards to evidence based estimation and modeling techniques and methodologies that should be expanded and employed to understand the impact of disasters on morbidity and mortality.

174
00:28:29.250 --> 00:28:42.780
Craig Vanderwagen: i'm happy to say that some of these elements have been incorporated into a bill that was introduced by a bipartisan group about a week and a half ago called the health statistics active.

175
00:28:44.580 --> 00:28:59.250
Craig Vanderwagen: which would provide authorizing language to support further advancement of a research agenda and further advancement of the appropriate training of how to disseminate this data and utilize it.

176
00:29:00.120 --> 00:29:10.650
Craig Vanderwagen: Both before, during and after a response to enhance response recovery and mitigation of the impact of the disease.

177
00:29:11.190 --> 00:29:25.710
Craig Vanderwagen: So I just wanted to bring to the attention of folks that not only are there appropriation activities underway, but there's now also authorizing activity to support an expanded evidence base for much of this work.

178
00:29:26.820 --> 00:29:27.300
Craig Vanderwagen: Thank you.

179
00:29:28.620 --> 00:29:29.820
Anita Cicero: Thanks very much Craig.

180
00:29:31.140 --> 00:29:40.800
Anita Cicero: And now i'm going to turn to my colleague, Margaret Miller who's going to read some additional submitted questions, and if you do have questions, please put them in the Q amp a box.

181
00:29:41.880 --> 00:29:47.190
Margaret Miller: Great thanks and needles will help me get these to the right panelists but here's a question from David rocket straw.

182
00:29:48.030 --> 00:29:59.970
Margaret Miller: Has there been a scientific analysis done that provide support for a target percent of positive samples to be sequenced with some understanding of the trade offs in an integrated surveillance strategy that will that will have budget constraints.

183
00:30:00.990 --> 00:30:13.140
Anita Cicero: Good I believe that's daybreak straw so Dave welcome to the webinar it was let's see who would like to take that one maybe Dave or dylan or caitlin.

184
00:30:14.040 --> 00:30:16.290
Dylan George: yeah Dave I think that's probably best for you.

185
00:30:18.420 --> 00:30:28.470
Dave O'Connor: Sure, so you know a lot of it so far has been what is possible without so much of a targets and if we're starting to talk about target numbers for surveillance.

186
00:30:28.800 --> 00:30:32.430
Dave O'Connor: it's been estimated that if you have 5%, then you know you have.

187
00:30:32.880 --> 00:30:44.130
Dave O'Connor: A lower bound and being able to pick up a virus once a variant once it's in your Community you know, at a certain level, and then, if you go to 10 or 15% you're going to pick it up at a much lower level and.

188
00:30:44.700 --> 00:30:53.640
Dave O'Connor: There are trade offs inherent in any percentage that you're going to try to get to but, again, if we want to try and.

189
00:30:54.420 --> 00:31:04.260
Dave O'Connor: extinguish variant clusters and we've seen engine gnomic data that this is possible, that if you have a transmission cluster that you catch early in in you intensively contact trace it.

190
00:31:04.470 --> 00:31:11.460
Dave O'Connor: You can often drive it to extinction and certainly if we look at what our friends in Australia are doing, they provide the best.

191
00:31:12.030 --> 00:31:19.440
Dave O'Connor: Real world data that suggests that when they have viruses in their communities with real extensive contact racing they can extinguish.

192
00:31:19.830 --> 00:31:30.540
Dave O'Connor: Transmission nodes and the more sequencing you do the more of those transmission nodes you're going to be able to find more quickly and so you're going to make the likelihood of being able to extinguish them that much better.

193
00:31:32.040 --> 00:31:37.560
Anita Cicero: good thing so they're scoring again the the connection important connection between sequencing and contact racing.

194
00:31:39.030 --> 00:31:47.700
Margaret Miller: Great thanks here's a question from janice Chang the pandemic response surveillance disease identification and public health response is predicated on information being used to guide policy.

195
00:31:48.210 --> 00:31:55.770
Margaret Miller: covert expose the key role to be played by the application of public health, law and, in my view, this was a clear failing and the use of public health emergency measures.

196
00:31:56.310 --> 00:32:02.970
Margaret Miller: Are there any initiatives to ensure that robust public health law's permits the actions that may be required to control this and other future pandemics.

197
00:32:07.110 --> 00:32:12.720
Anita Cicero: I know Steve you're on mute but I don't know if you'd like to take a crack at that that question.

198
00:32:16.080 --> 00:32:16.860
Steve Redd: Thank thanks.

199
00:32:18.000 --> 00:32:25.740
Steve Redd: You know, I think that there is there's a sequence of interventions to make these things happen more.

200
00:32:26.790 --> 00:32:40.950
Steve Redd: quickly and more completely, I think that the and I think there is a role for clear and more direct directive guidance at the federal level this the the.

201
00:32:42.150 --> 00:32:51.480
Steve Redd: likelihood that state laws could be coordinated so that all this would happen, I think, might be a little bit of a long shot, but I do agree that there's been a.

202
00:32:52.470 --> 00:33:03.540
Steve Redd: lack of sufficient coordination that one of the questions earlier about the decentralization of our system, whether that means we're we're kind of.

203
00:33:04.740 --> 00:33:20.130
Steve Redd: faded to have fragmented information system and I don't think that's necessarily true and I think la is one component of that, but I think there were other policy tools that could be used to to encourage and ultimately.

204
00:33:21.390 --> 00:33:28.440
Steve Redd: Enforced maybe it's too strong, of a word but force a more coherent national policy to information management.

205
00:33:30.540 --> 00:33:34.890
Dylan George: Thank you yeah and needed, the only thing I jumped in there just briefly as well, is this.

206
00:33:35.280 --> 00:33:46.200
Dylan George: idea that pre coven there was an explicit discussion of you know that data for public health emergencies was a government role and responsibility, and it clearly is.

207
00:33:46.680 --> 00:33:58.320
Dylan George: And i'm not saying that it isn't but in other areas of pandemic response we explicitly recognize the need for help from the private sector and other parts of civil society.

208
00:33:58.620 --> 00:34:08.970
Dylan George: In a more explicit way, for example, making many manufacturing vaccines, we recognize that the Federal Government can't manufacture them at scale so that's why we work with j&j Madonna and Pfizer and etc, etc.

209
00:34:09.600 --> 00:34:20.910
Dylan George: I do think that we should very think very hard and deeply about what is the role of private sector in supporting data systems and public health.

210
00:34:21.300 --> 00:34:32.040
Dylan George: And how much do we need to rely on them, and I would be an advocate, we need to rely on them more, but we need to figure out how to do it safely and protecting people's privacy's and more effective way.

211
00:34:33.000 --> 00:34:39.900
Dylan George: And we have built structures within the Federal Government to enable that on the medical countermeasure side, particularly.

212
00:34:40.140 --> 00:34:47.160
Dylan George: barda being a good example of that we need to think about what organs and what kind of structures within the Federal Government do we need to enable those kinds of.

213
00:34:48.240 --> 00:34:53.640
Dylan George: interactions with the private sector in a much more robust way that will be public health law.

214
00:34:54.720 --> 00:34:55.380
Dylan George: A big area.

215
00:34:55.620 --> 00:34:56.100
Dylan George: For a.

216
00:34:56.850 --> 00:34:59.490
Anita Cicero: more formal less ad hoc fashion yeah.

217
00:34:59.850 --> 00:35:00.210
Dylan George: I agree.

218
00:35:02.010 --> 00:35:16.200
Margaret Miller: Right here's a question from Edward living for Dr rivers, and this is, in our friends to report you released last week any concerns over informed consent ownership of genetic data and the like, could you expand on those issues and highlight possible answers to them.

219
00:35:17.100 --> 00:35:25.710
Caitlin Rivers: yeah, this is a tricky area, the sequence data that is towards the end of the pipeline is supposed to be just from the virus and so is.

220
00:35:26.070 --> 00:35:36.300
Caitlin Rivers: sort of divorced from some of the considerations that we have around human protected data but there's an additional layer that makes the sequence data, a lot more actionable and useful to public health.

221
00:35:36.540 --> 00:35:50.130
Caitlin Rivers: And that is the data around what's happening with the patient do they have severe illness, where they previously vaccinated how old, are they and finding a way to be able to safely and with utmost respect for privacy and for.

222
00:35:50.460 --> 00:35:57.750
Caitlin Rivers: Existing health regulations marry or link up those two different data streams, I think, is an area that there's a lot of work to be done.

223
00:35:58.230 --> 00:36:13.260
Caitlin Rivers: there's not been great solutions enumerated yet, but I think, with all of the energy around increasing or genomic surveillance capabilities, this is an area of really important growth world we will start to see some more solutions and some more leverage.

224
00:36:14.490 --> 00:36:23.430
Dave O'Connor: And maybe, if I can maybe jump in there, too, with our experience and started the pandemic PR hipaa there were concerns that sharing any genetic data with.

225
00:36:24.000 --> 00:36:27.120
Dave O'Connor: Geographic distinction smaller than the State and.

226
00:36:27.630 --> 00:36:30.570
Dave O'Connor: You know date descriptions smaller than a year.

227
00:36:30.840 --> 00:36:34.380
Dave O'Connor: Beyond allowable so being able to say that a sequence was from.

228
00:36:34.560 --> 00:36:47.160
Dave O'Connor: Wisconsin in 2020 a doesn't allow very much activity and at the other end of the spectrum obviously you do have to have the utmost respect for individual patients and you have to be mindful of the risks of disclosure.

229
00:36:47.370 --> 00:36:58.470
Dave O'Connor: But we have to be able to find a medium that lets us get the data that is necessary to contextualize and interpret the results and along those same lines, one thing we haven't talked about yet.

230
00:36:58.800 --> 00:37:07.620
Dave O'Connor: Is medically actionable variance so we've been talking just about surveillance another channel that will likely be necessary, at some point is.

231
00:37:08.310 --> 00:37:14.160
Dave O'Connor: sequencing in clia certified clinical labs with sequencing data that will go into.

232
00:37:14.400 --> 00:37:25.290
Dave O'Connor: Electronic medical records, if that were required for genomic surveillance as we've been talking about so far, it would disqualify huge numbers of labs including ours from participating in this kind of work.

233
00:37:25.500 --> 00:37:38.640
Dave O'Connor: But I think it is worth thinking about what a clinical lane for sequencing that might directly impact patient care might look like in the future and start building for that using something like HIV drug resistance sequencing as an example.

234
00:37:39.870 --> 00:37:45.510
Caitlin Rivers: I could just add one more comment to tie together actually one of the comments that Craig our one of our founding Members made.

235
00:37:45.810 --> 00:37:49.980
Caitlin Rivers: The statistics act that has been introduced tasks, the Federal Government with setting.

236
00:37:50.250 --> 00:38:00.570
Caitlin Rivers: regulations and standards around reporting public health data, and I think that could be a really important step forward because it's right now it's not always clear what is allowed to be reported and so very conservative.

237
00:38:00.840 --> 00:38:13.770
Caitlin Rivers: Balance are set, but if there is a third party, if there is a trusted Federal Government source that say it's okay to report to the month level into the county level that might free up a lot of important reporting and that's that's the statistics act that was mentioned earlier.

238
00:38:17.370 --> 00:38:23.130
Margaret Miller: Great we have a question from Shell Sharma, what are the current reasons for CDC not doing more sequencing.

239
00:38:28.260 --> 00:38:38.490
Caitlin Rivers: I think it's largely capacity and funding issues, this is a although people who specialize in genomic surveillance and epidemiology have recognized this is an issue for a long time.

240
00:38:38.820 --> 00:38:49.170
Caitlin Rivers: It has only rose to public consideration since Christmas, really, and so I think it's just been a little bit of a blind spot or lower on the priority list, and we now recognize.

241
00:38:49.470 --> 00:39:02.760
Caitlin Rivers: I think the American rescue plan really elevates it as a priority there's $1.75 billion for this in the draft legislative texts, so that will be changing, but I think today it's just been not recognized as top of mind.

242
00:39:03.750 --> 00:39:11.070
Anita Cicero: Actually i'm real on caitlin David and dylan dylan you can add in your comment was you answer this as well, but.

243
00:39:11.580 --> 00:39:30.990
Anita Cicero: I think a compelling case has been made for scaling up investment in sequencing for now right is there, what would you say that at the end of the pandemic, we can reduce that investment reduce that spending, or is there a case to be made that it needs to be sustained and, if so, why.

244
00:39:33.450 --> 00:39:45.030
Dylan George: yeah i'll jump in real quick it's like I do think that you know genomic epidemiology has, you know as a as a field of study has matured to the point where we can actually use it in outbreak investigations.

245
00:39:45.390 --> 00:39:48.930
Dylan George: And to identify particular sorts of actions that could happen and.

246
00:39:49.260 --> 00:39:59.820
Dylan George: And as David pointed out, I think there's a there's three big buckets of kind of questions you can answer the first are like epidemiology epidemiological should we change some of the kinds of.

247
00:40:00.150 --> 00:40:09.930
Dylan George: Non pharmaceutical interventions that we're using to keep us safe in some capacity should we stay at home, should we close borders should we do all these things and and does the epidemiology, does the genomic.

248
00:40:10.830 --> 00:40:22.710
Dylan George: sequencing help us address some of those questions the second bucket is, how does it impact, you know our medical countermeasures, is it is it are the variance is having that escape.

249
00:40:23.730 --> 00:40:35.280
Dylan George: immune escape, so the the tests, the vaccines, the monoclonal antibodies don't work as well, and so we need to do that, that kind of investigation, and then the last bit was what day was talking about in terms of.

250
00:40:35.700 --> 00:40:44.760
Dylan George: You know, do we change treatment for a particular individual as they're being as they're conveying confronting some sort of treatment with their doctor.

251
00:40:45.720 --> 00:40:52.710
Dylan George: And so, as we think about those three buckets of kinds of questions, I think that we will have to scale sequencing appropriately.

252
00:40:53.040 --> 00:41:01.770
Dylan George: To to meet those needs, and so we should think about what is the data architecture and what is the flow of information to support those different types of questions going forward.

253
00:41:03.630 --> 00:41:05.970
Dave O'Connor: yeah if I can build on that, I think that.

254
00:41:06.690 --> 00:41:16.590
Dave O'Connor: We really are now in an era of genomic surveillance that was enabled by the sort of technology development that started with the human genome project and has continued to make sequencing available.

255
00:41:16.800 --> 00:41:25.260
Dave O'Connor: at low cost and really high throughput it was unimaginable even a few years ago, and so 21st century public health is going to have.

256
00:41:26.280 --> 00:41:37.440
Dave O'Connor: sequencing as a key component and sort of build on the weather service metaphor from earlier, will we need this after covert yes, just like we need weather radar and we need.

257
00:41:37.650 --> 00:41:50.310
Dave O'Connor: ocean buoys after a hurricane hits because there will be another hurricane, there will be other events in our future where you need to have this this infrastructure, and I think that genomic surveillance might be as fundamental to.

258
00:41:51.510 --> 00:41:57.900
Dave O'Connor: pandemic preparedness and viral surveillance as radar was to meteorology in the 20th century.

259
00:42:02.640 --> 00:42:13.080
Margaret Miller: Great I have two questions for Dr o'connor so Victoria hall asks what are limiting factors that determine how many tests are sequencing in each state who pays for the tests.

260
00:42:14.610 --> 00:42:30.000
Dave O'Connor: Right, so this has been a patchwork so my funding to do this comes from a CDC contract that funds looking at samples in our campus community, along with the campus communities at the University of Michigan Ann arbor and and the city of milwaukee.

261
00:42:30.510 --> 00:42:40.530
Dave O'Connor: Funds from what's called the Wisconsin partnership program, which is based in Community outreach and so that funds, the sequencing that we do in those communities of.

262
00:42:41.100 --> 00:42:56.640
Dave O'Connor: milwaukee and Madison and then funding from the the fast grants program which specifically funds sequencing from recently returned international travelers so look for the importation variance and this sort of patchwork of funding.

263
00:42:57.330 --> 00:43:11.550
Dave O'Connor: dictates what sort of sequencing we are able to do what sort of samples were able to look at and is is is really a key driver in our decision making of how we structure the sequencing that gets performed.

264
00:43:12.990 --> 00:43:15.780
Margaret Miller: Great and have another one from Nicole simmons for you, Dr Connor.

265
00:43:16.290 --> 00:43:24.420
Margaret Miller: If local public health agencies are to take action based on identification of variance, we need to radically reduced to turn around time to below seven to 14 days which you said in your remarks.

266
00:43:24.900 --> 00:43:31.200
Margaret Miller: What about using variant specific PCR probes as an initial step there's also need for guidance for local health department actions.

267
00:43:31.710 --> 00:43:41.010
Margaret Miller: When they receive notice of a sequence that are worried some variant for enhanced cases specification and contact tracing to agree how would you recommend providing some guidance to local public health department.

268
00:43:41.430 --> 00:43:49.620
Dave O'Connor: yeah so we're actually in the process of this right now so i'll take the second part, first, so we need to streamline the way that the information is.

269
00:43:50.100 --> 00:43:56.490
Dave O'Connor: transmitted that we identify the samples that need to be sequenced and that we report the results in a way that is.

270
00:43:56.730 --> 00:44:04.350
Dave O'Connor: useful and informative and ideally standardized so that it can be compared between multiple sides of that not everyone has to reinvent this wheel.

271
00:44:04.890 --> 00:44:11.580
Dave O'Connor: In their own local jurisdiction and that's something that we're we're wrestling with right now is we're trying to figure out which.

272
00:44:12.240 --> 00:44:20.130
Dave O'Connor: Case clusters should be intensively contact traced and which of those should potentially be sequence so, for example.

273
00:44:20.880 --> 00:44:31.620
Dave O'Connor: we're having some cases on our university campus right now we'll go public health is identifying which of those cases come from people who have Community contact, either through working in an Assisted Living Center or.

274
00:44:32.250 --> 00:44:39.060
Dave O'Connor: Working in a restaurant in the Community, and so we might prioritize those for sequencing, and so this requires really careful coordination.

275
00:44:39.900 --> 00:44:45.090
Dave O'Connor: and has been enabled by the relationships that we've built in that's where we need to be doing more of this.

276
00:44:45.390 --> 00:44:56.280
Dave O'Connor: And it needs to happen fast, so that if someone does a contact tracing investigation, we can get access to those residual samples and get that sequencing done quickly enough that we can actually make a difference with.

277
00:44:57.000 --> 00:45:08.580
Dave O'Connor: Informing how they're going to handle that cluster and so again that 714 days is key, are there non sequencing based ways to do it, yes, you can use PCR to work for specific variants.

278
00:45:09.270 --> 00:45:14.220
Dave O'Connor: I will they are in fact doing this here at the University of Wisconsin Madison and I.

279
00:45:14.850 --> 00:45:24.630
Dave O'Connor: Personally don't think that that is a great long term solution, because the variants that you're going to be looking for are going to be a moving target and so you're always going to be trying to develop acids.

280
00:45:25.380 --> 00:45:36.210
Dave O'Connor: that are going to have to be catching up to the virus and so just one example, in the last two weeks we've had two new variants that have attracted some attention wanted position 677.

281
00:45:36.810 --> 00:45:43.200
Dave O'Connor: That was found extensively in new Mexico in Louisiana and one a position it's either for 25 or 452.

282
00:45:43.650 --> 00:45:51.180
Dave O'Connor: that's in the California virus and so, if you had developed assets, three weeks ago for those viruses, you would need.

283
00:45:51.810 --> 00:46:05.310
Dave O'Connor: For the viruses that were circulating, then you would need to adopt those assets to these newer variants and that's going to be a really, really difficult to ask, especially when we have such high throughput rapid sequencing available as an alternative.

284
00:46:07.440 --> 00:46:19.470
Margaret Miller: Great Thank you so much here's a question from Albert Roman asking for Dr George How would this new Center to monitor and forecast emerging infectious diseases be different from the national buyer surveillance integration Center.

285
00:46:20.340 --> 00:46:28.080
Dylan George: The the national bio surveillance integration Center was there, I mean the main objective, there was to try to bring together a variety of different information to try to understand.

286
00:46:29.760 --> 00:46:38.430
Dylan George: what was happening for natural and intentional sorts of outbreaks, that we would have some sort of signal going forward it's in the it's in the Department of Homeland Security.

287
00:46:39.270 --> 00:46:45.540
Dylan George: And they it was so it was designed as a fusion Center really and they put our products in different ways.

288
00:46:46.050 --> 00:46:52.230
Dylan George: And so it wasn't really designed to actually do the analytics that we're talking about some of the components would be.

289
00:46:52.890 --> 00:47:01.080
Dylan George: somewhat similar but it wouldn't need the what we're talking about in terms of this national forecasting Center would have to have the authorities reticent within.

290
00:47:01.740 --> 00:47:15.210
Dylan George: Within health and human services to be really effective and have rapid access to that and that kind of information, and so it was the the the Arabic was focusing on a slightly different problem set.

291
00:47:16.470 --> 00:47:24.570
Dylan George: And the the also the Center would really mean that the value of the Center would be providing decision support two.

292
00:47:24.990 --> 00:47:30.660
Dylan George: mayors and governors if it can provide better decision support, so they can navigate amongst the various policies.

293
00:47:31.020 --> 00:47:40.830
Dylan George: than it deserves to live it it can't do that well, then it, then it should be scrapped and moved on to something that can do that well but that's what we're that's, the aim of what the Center should really be doing.

294
00:47:44.280 --> 00:47:47.910
Margaret Miller: Great Thank you here's a question from any fine.

295
00:47:48.210 --> 00:48:01.710
Margaret Miller: Are their best practices on how laboratory data from wgs should be shared with public health to integrate with EPI data, for example, how to represent the variants of concern or mutations of concern and standard reports with identifiable data.

296
00:48:04.800 --> 00:48:12.630
Dave O'Connor: I mean again i'll take this, I think that there's going to be multi tiered reporting and again we can learn a lot from HIV drug resistance in terms of how this might look.

297
00:48:13.230 --> 00:48:22.560
Dave O'Connor: We just met yesterday with a bunch of our clinicians and people who work in electronic medical records and others in public health to think about what this might look like.

298
00:48:23.370 --> 00:48:34.560
Dave O'Connor: For clinicians who are really interested in actionable data, you might want just top line findings, but you might want to have increasing levels of granularity available to people working in public health and working.

299
00:48:35.430 --> 00:48:40.200
Dave O'Connor: In trying to understand the the tracking of these you know viruses through space and time.

300
00:48:41.340 --> 00:48:51.210
Dave O'Connor: And that's something that we need to work on and again would benefit from harmonization at a centralized level so that this isn't something that gets.

301
00:48:51.750 --> 00:49:06.720
Dave O'Connor: Re invented and as dylan said earlier, this is a place where we can really strive for better data interoperability between different systems, so the data that's generated in one place and interpreted in one place can be comparing apples to apples to data from elsewhere.

302
00:49:08.010 --> 00:49:19.380
Caitlin Rivers: And just to build on that so many jurisdictions and stakeholders are facing the same set of problems, and so I do think that assistance and guidance from the Federal Government to harmonize the way that we approach these questions would be really useful.

303
00:49:21.180 --> 00:49:26.220
Dylan George: And one one last thing i'd add to monkey pile on to this as well as this idea that.

304
00:49:26.850 --> 00:49:37.110
Dylan George: You know bioinformatics is, we need to figure out how to actually provide that evidence and evidence based going forward and there's lots of people that do bioinformatics in a lot of different academic settings but.

305
00:49:37.800 --> 00:49:47.940
Dylan George: And Dave has been you know, providing an amazing example of how he's been integrated with public health in trying to fight the coven proving bring the best.

306
00:49:48.900 --> 00:49:56.280
Dylan George: Evidence forward for variants, but in some other localities they don't have that really good connection between people that are actually doing the analytics.

307
00:49:56.640 --> 00:50:03.960
Dylan George: On the sequencing to help them guide going forward and so having centers of excellence to really be able to develop bioinformatics that can.

308
00:50:04.290 --> 00:50:17.520
Dylan George: provide that that good insight one and then to to provide that interface that decision support interface with people who are actually making decisions I think it's gonna be really critical, so that we can scale the kind of good work that Dave is representing.

309
00:50:18.510 --> 00:50:25.710
Dylan George: What they're doing in Wisconsin and so that would be the only other thing centers of excellence for bioinformatics and decision support would be a really critical.

310
00:50:28.410 --> 00:50:37.860
Margaret Miller: Great we have a question from Russia Russia kira sorry i'm sure you're saying that incorrectly coven 19 project coordinator at Suffolk county Department of Health.

311
00:50:38.280 --> 00:50:48.840
Margaret Miller: As many of the speakers noted in the local health departments have been fighting this pandemic on their own program a year counting leadership isn't trusted and actionable strategies and it's hard to draw straight line between the new variants.

312
00:50:49.470 --> 00:50:57.000
Margaret Miller: and immediate actions any advice on how to use the genomic surveillance data to actionable items on the ground at local health departments, how should they be using it.

313
00:50:59.340 --> 00:51:10.410
Caitlin Rivers: One recommendation, if there is a variant case that's identified in your county and it comes to your attention prioritize it for contact tracing and really do a good case investigation.

314
00:51:10.770 --> 00:51:14.280
Caitlin Rivers: That can allow you to collect the data to inform the broader conversation.

315
00:51:14.760 --> 00:51:25.440
Caitlin Rivers: With a single case or with a couple cases, you might you personally might not get a lot out of it but added together we can really use that data to understand which variants are of concern and how their behavior might be different relative to the.

316
00:51:25.770 --> 00:51:30.900
Caitlin Rivers: variants that we've been managing to date and so that would be I think one actionable priority.

317
00:51:31.890 --> 00:51:37.920
Dylan George: yeah the other actionable priority that I would add to what Kevin was saying, though, too, is that what we saw that happened in the UK, in terms of.

318
00:51:38.760 --> 00:51:46.290
Dylan George: dramatic increase in cases and the pressure that it was putting on hospitals, is to try to it's like if you start seeing those in a locality it's like.

319
00:51:46.560 --> 00:51:53.070
Dylan George: Do the outbreak investigation like Kevin was describing but then also start thinking about how to bolster the hospital system so that it's.

320
00:51:53.400 --> 00:52:00.000
Dylan George: If there is a surge coming forward, are you prepared, are you ready to go for those would be the that would be the other thing that I would mention, as well.

321
00:52:00.810 --> 00:52:09.570
Caitlin Rivers: And maybe Just one final line is that if you if you're starting to observe something unusual in your Community like if there are cases or even a case and someone who is fully vaccinated.

322
00:52:09.840 --> 00:52:14.850
Caitlin Rivers: Maybe arranged for sequencing for that sample so that you can start to get an understanding of what's changing.

323
00:52:17.160 --> 00:52:21.390
Margaret Miller: Great Thank you and there's a few questions on wastewater so surveillance so i'm going to.

324
00:52:21.750 --> 00:52:29.550
Margaret Miller: grab one from john woo from the new Mexico State University, we were running our wastewater surveillance program for Cobra tremendous transmission at Community level.

325
00:52:30.330 --> 00:52:40.260
Margaret Miller: We are working on genome genome sequencing to watch possible variants from wastewater samples and the region where the wastewater genome sequencing been an integrated part of the genome surveillance that you're suggesting.

326
00:52:42.840 --> 00:52:48.870
Dave O'Connor: So i'll see that this is a great a great point to mention the impact of the CDC spheres Program.

327
00:52:49.380 --> 00:52:55.650
Dave O'Connor: which has brought together different types of people with different types of sequencing expertise, the sequencing of wastewater viruses.

328
00:52:56.250 --> 00:53:04.440
Dave O'Connor: is one way of looking at really holistic level about what you're seeing in a specific Community, and I think this afternoon.

329
00:53:04.680 --> 00:53:14.580
Dave O'Connor: there's going to be a CDC spheres, you know call with all of the stakeholders who are doing wastewater surveillance just discussed this very issue of how it can be used to.

330
00:53:15.360 --> 00:53:24.450
Dave O'Connor: You know, and how this can be can be standardized and used most effectively, I know that there's work that's being done in Missouri by a colleague of mine.

331
00:53:25.140 --> 00:53:29.940
Dave O'Connor: who's doing wastewater surveillance, where they actually don't have very many sequences from individuals but.

332
00:53:30.240 --> 00:53:38.550
Dave O'Connor: Their wastewater data can give the indication that there might be some variants of concern that are circulating, and so I think there absolutely is a place for it.

333
00:53:38.970 --> 00:53:50.910
Dave O'Connor: But this sort of spheres network has started as a large slack instance that brings together nearly 1000 people and it's that kind of broad networking that breaks down walls that I think.

334
00:53:51.480 --> 00:54:07.950
Dave O'Connor: We would want to have at a much larger scale as part of a national program because you the answer is all of the above, do you want wastewater surveillance, you want individuals eventually you want medical medically relevant sequencing and I think so, the answer to everything is yes.

335
00:54:11.400 --> 00:54:21.930
Margaret Miller: Great here's a question for Dr reverse from Patrick Iverson given ongoing success as a sequencing in the UK, what can we learn from what patient data they collect and how they implemented analysis and policy.

336
00:54:23.310 --> 00:54:30.990
Caitlin Rivers: yeah that's a great question I think they have the advantage of having a national health system, whereas we are dealing with a much more desegregated and fractured system.

337
00:54:31.260 --> 00:54:39.210
Caitlin Rivers: But I think there are a lot of important lessons to learn from colleague UK which I can't I can't think of what it stands for, right now, but the UK Program.

338
00:54:39.480 --> 00:54:50.040
Caitlin Rivers: And the other place to look for lessons learned is Denmark, which has a very robust sequencing program, so I think there are good templates out there, for what we can learn, we may need to transfer or.

339
00:54:50.610 --> 00:55:00.780
Caitlin Rivers: rejigger it a little bit to account for it using receive in our approach, but, as you mentioned, there are good templates out there and just to highlight something that Dave said that some of this good work.

340
00:55:01.110 --> 00:55:11.310
Caitlin Rivers: is also here underway in the United States, driven by CDC in the spheres program, which is also helping to pioneer what something like that can look like, here in the US.

341
00:55:15.000 --> 00:55:16.080
Margaret Miller: Great Thank you.

342
00:55:17.280 --> 00:55:24.780
Margaret Miller: um, this is a question for Dr George from and Simon what other likely outcomes a federal funding for the Center and data modernization efforts do not come to fruition.

343
00:55:26.250 --> 00:55:26.430
Margaret Miller: Right.

344
00:55:26.670 --> 00:55:29.910
Dylan George: yeah no it's it's really great it's a really great point, so the.

345
00:55:30.180 --> 00:55:39.120
Dylan George: As everyone knows that ever developed a model and it's like garbage in garbage out so if you don't have good data you're not going to have good results and you're not gonna be able to support people making decisions going forward.

346
00:55:39.600 --> 00:55:43.140
Dylan George: The the The thing that i'm most encouraged about right now is that there are.

347
00:55:44.040 --> 00:55:51.450
Dylan George: dollars in the American rescue plan tucked away for improving data systems broadly I mean in the 1.75.

348
00:55:51.840 --> 00:55:59.430
Dylan George: billion for genomic sequencing there's dollars allocated for improving the metadata systems for bringing together clinical.

349
00:55:59.730 --> 00:56:10.020
Dylan George: EPI and genomic sequencing together in some ways, obviously, that needs to come to fruition there's also a dollars tucked away for in the equity portions of the American rescue plan.

350
00:56:10.350 --> 00:56:22.320
Dylan George: There is some in the vaccination campaign so there's there's dollars for improving the data system, I think we've all recognized that we need a better data system, we need a 21st century data system for these 21st century problems.

351
00:56:23.370 --> 00:56:32.310
Dylan George: And, and so I think that there's dollars in there to make this going forward, but it is a critical component, that we have good data so that we can actually improve upon.

352
00:56:34.230 --> 00:56:40.830
Dylan George: Going forward in the Center will be it will will really rely on how good the data are going forward so it's a great point.

353
00:56:43.080 --> 00:56:53.520
Margaret Miller: Great thanks for the panelists due to the many variants that are emerging to do you feel that the Cobra 19 vaccine may need a booster shot annual basis.

354
00:56:57.240 --> 00:57:03.540
Caitlin Rivers: I don't think we know the cadence that an update might be required, I do think that over the long term, we will have to.

355
00:57:03.810 --> 00:57:12.990
Caitlin Rivers: readjust the vaccines to match what is circulating in our communities, just like we do for seasonal influenza, we know that the current vaccines in use are very effective against the.

356
00:57:13.350 --> 00:57:23.340
Caitlin Rivers: The very first identified in the UK, there may be some reduction and efficacy from the variants identified in South Africa and Brazil, but again, those two are circulating at very low levels in the US.

357
00:57:23.610 --> 00:57:39.360
Caitlin Rivers: So I think it's a situation to watch and I think we should be taking advantage of this time to prepare the infrastructure, so that we can do the identification to the characterization to the updating of the vaccines as needed and as it becomes apparent that that that will be useful.

358
00:57:41.880 --> 00:57:50.370
Margaret Miller: Okay, great i'll ask one final question and then turn it back to Anita for for a final question or remarks this one we haven't talked much about on this session, yet so.

359
00:57:51.000 --> 00:58:01.590
Margaret Miller: here's a question from megan Davis, as the identification of the mink variant with go back into local communities in the Netherlands and elsewhere, demonstrates what about animal testing and genomic surveillance.

360
00:58:02.160 --> 00:58:12.960
Margaret Miller: that's important to one health perspective, what is being done in the US to address this and livestock and companion species of animals, particularly given the susceptibility of mink and domestic and exotic cat.

361
00:58:16.590 --> 00:58:27.690
Caitlin Rivers: i'll just comment briefly that I agree that surveillance in animals is an important area of opportunity, because we know that it is possible for stars could be to to infect some animals usda has a dashboard.

362
00:58:28.110 --> 00:58:38.070
Caitlin Rivers: Through the atheist program that tallies infections that have been identified in animals, mostly in large cats in non human primates and and make.

363
00:58:38.610 --> 00:58:46.650
Caitlin Rivers: But I think there's clearly a lot of room to expand that surveillance program because there's only been about 3000 cases reported through January through that dashboard.

364
00:58:47.010 --> 00:58:59.220
Caitlin Rivers: But again, if the $1.75 billion, that is, in the draft legislative text comes to pass, there will be funding, I think that could be extended to animal surveillance, because we know that this is an important issue that we need to stay ahead of.

365
00:59:00.600 --> 00:59:07.290
Dave O'Connor: If I can add I think this idea of one health is critically important because what happens in animals also happens to us and.

366
00:59:07.920 --> 00:59:18.570
Dave O'Connor: We have lots of evidence of spillover infections into people that genomic surveillance of on you know, unbiased sequencing someone shows up within encephalitis.

367
00:59:19.050 --> 00:59:23.310
Dave O'Connor: Why are they sick well they lived on a farm or they you know, took care of livestock.

368
00:59:23.580 --> 00:59:33.510
Dave O'Connor: This is another place where genomic surveillance has already been used over the last decade, to try to solve some of these medical mysteries and it's just another example of how this sort of investment.

369
00:59:33.780 --> 00:59:42.000
Dave O'Connor: modernize is our ability to look for infectious diseases respond and make for better outcomes down the road.

370
00:59:44.880 --> 01:00:00.390
Anita Cicero: Thank you, I want to thank all of our panelists and speakers today for really data rich and then policy, you know practical policy recommendations kind of conversation.

371
01:00:01.020 --> 01:00:10.680
Anita Cicero: really appreciate your time and and your devotion to this topic, and thank you for joining us today Thank you to everyone who submitted questions and.

372
01:00:11.130 --> 01:00:20.850
Anita Cicero: I think we got too many of them I sorry if we would couldn't have time to get to yours, but, but I think this has been a really fruitful discussion and.

373
01:00:21.330 --> 01:00:38.160
Anita Cicero: would like to invite you all to join us for the next meeting of the Capitol Hill steering committee on march 30 and that will be at 11am and more information will be forthcoming about that event soon so with that I will say goodbye, and thank you so much.