WEBVTT

NOTE duration: "00:12:12.0530000"

NOTE language:en-us

NOTE Confidence: 0.86347365

 $00:00:00.000 \longrightarrow 00:00:01.596$ And everyone I'm going to talk

NOTE Confidence: 0.86347365

 $00:00:01.596 \longrightarrow 00:00:03.537$ a bit about policy and politics

NOTE Confidence: 0.86347365

00:00:03.537 --> 00:00:05.169 around vaccines during COVID-19.

NOTE Confidence: 0.86347365

 $00:00:05.170 \dashrightarrow 00:00:08.050$ And like so many of us during this pandemic,

NOTE Confidence: 0.86347365

00:00:08.050 --> 00:00:10.318 our work and what we're doing has

NOTE Confidence: 0.86347365

 $00:00:10.318 \longrightarrow 00:00:12.529$ expanded to meet the moment for me.

NOTE Confidence: 0.86347365

 $00{:}00{:}12.530 \dashrightarrow 00{:}00{:}14.770$ That has meant expanding from my work,

NOTE Confidence: 0.86347365

 $00:00:14.770 \longrightarrow 00:00:16.690$ which is typically looked at analyzing,

NOTE Confidence: 0.86347365

 $00{:}00{:}16.690 \dashrightarrow 00{:}00{:}17.946$ studying the policy process,

NOTE Confidence: 0.86347365

00:00:17.946 --> 00:00:19.830 studying the use of evidence and

NOTE Confidence: 0.86347365

 $00:00:19.890 \longrightarrow 00:00:21.490$ policy making in public health,

NOTE Confidence: 0.86347365

 $00{:}00{:}21.490 \dashrightarrow 00{:}00{:}22.714$ particularly around vaccines and

NOTE Confidence: 0.86347365

 $00:00:22.714 \longrightarrow 00:00:24.550$ thinking about ways in which those

NOTE Confidence: 0.86347365

 $00{:}00{:}24.599 \dashrightarrow 00{:}00{:}25.967$ processes can be strengthened.

 $00{:}00{:}25.970 --> 00{:}00{:}27.350$ I'm still doing that,

NOTE Confidence: 0.86347365

 $00:00:27.350 \longrightarrow 00:00:29.075$ but also have been contributing

NOTE Confidence: 0.86347365

 $00:00:29.075 \longrightarrow 00:00:30.538$ in some ways to the.

NOTE Confidence: 0.86347365

 $00:00:30.540 \longrightarrow 00:00:32.180$ The policy making process contributing

NOTE Confidence: 0.86347365

 $00{:}00{:}32.180 \dashrightarrow 00{:}00{:}34.404$ to the generation of evidence that can

NOTE Confidence: 0.86347365

00:00:34.404 --> 00:00:36.280 inform how we think about these vaccines,

NOTE Confidence: 0.86347365

 $00:00:36.280 \longrightarrow 00:00:38.387$ both in terms of regulation and rollout.

NOTE Confidence: 0.86347365

 $00:00:38.390 \longrightarrow 00:00:39.900$ So in our time today,

NOTE Confidence: 0.86347365

 $00:00:39.900 \longrightarrow 00:00:41.410$ I'll briefly walk through a

NOTE Confidence: 0.86347365

 $00:00:41.410 \longrightarrow 00:00:42.618$ variety of those ways.

NOTE Confidence: 0.86347365

 $00:00:42.620 \longrightarrow 00:00:44.426$ Colleagues and I have been contributing,

NOTE Confidence: 0.86347365

 $00:00:44.430 \longrightarrow 00:00:45.805$ studying the work and also

NOTE Confidence: 0.86347365

 $00{:}00{:}45.805 \dashrightarrow 00{:}00{:}47.180$ contributing to this work around

NOTE Confidence: 0.86347365

 $00{:}00{:}47.232 \dashrightarrow 00{:}00{:}48.957$ COVID-19 vaccine policy and politics.

NOTE Confidence: 0.86347365

 $00:00:48.960 \longrightarrow 00:00:51.074$ I think just by way of context,

 $00:00:51.080 \longrightarrow 00:00:52.914$ we know some of the many challenges

NOTE Confidence: 0.86347365

00:00:52.914 --> 00:00:55.002 before us in terms of a public

NOTE Confidence: 0.86347365

 $00:00:55.002 \longrightarrow 00:00:56.557$ health and health policy community

NOTE Confidence: 0.86347365

00:00:56.557 --> 00:00:58.019 with respect to vaccines,

NOTE Confidence: 0.86347365

00:00:58.020 --> 00:01:00.050 it's a balancing act as I try

NOTE Confidence: 0.86347365

 $00:01:00.050 \longrightarrow 00:01:01.470$ to articulate here between.

NOTE Confidence: 0.86347365

 $00{:}01{:}01.470 \dashrightarrow 00{:}01{:}03.396$ Recognizing the urgency of the crisis,

NOTE Confidence: 0.86347365

 $00:01:03.400 \longrightarrow 00:01:05.000$ the need to rapidly innovate,

NOTE Confidence: 0.86347365

 $00{:}01{:}05.000 --> 00{:}01{:}05.644 \ {\rm including \ innovate},$

NOTE Confidence: 0.86347365

 $00:01:05.644 \longrightarrow 00:01:06.610$ not just scientifically,

NOTE Confidence: 0.86347365

00:01:06.610 --> 00:01:08.734 but with our regulatory and policy

NOTE Confidence: 0.86347365

 $00:01:08.734 \longrightarrow 00:01:10.473$ making activities while also still

NOTE Confidence: 0.86347365

 $00:01:10.473 \longrightarrow 00:01:12.545$ figuring out how we can make most use

NOTE Confidence: 0.86347365

 $00:01:12.545 \longrightarrow 00:01:14.546$ of our mechanisms or processes that

NOTE Confidence: 0.86347365

 $00:01:14.546 \longrightarrow 00:01:16.560$ are in place for evaluating evidence

NOTE Confidence: 0.86347365

 $00:01:16.560 \longrightarrow 00:01:18.480$ and putting that evidence into work.

00:01:18.480 --> 00:01:20.566 And at the same time generating and

NOTE Confidence: 0.86347365

 $00{:}01{:}20.566 \dashrightarrow 00{:}01{:}21.809$ gathering and rapidly incorporating

NOTE Confidence: 0.86347365

 $00:01:21.809 \longrightarrow 00:01:23.860$ the evidence that can help us do

NOTE Confidence: 0.86347365

 $00:01:23.860 \longrightarrow 00:01:25.582$ that more efficiently and more

NOTE Confidence: 0.86347365

 $00:01:25.582 \longrightarrow 00:01:27.387$ effectively with respect to COVID-19

NOTE Confidence: 0.86347365

 $00:01:27.387 \longrightarrow 00:01:29.073$ vaccines in the United States.

NOTE Confidence: 0.86347365

00:01:29.073 --> 00:01:30.678 As you heard earlier today,

NOTE Confidence: 0.86347365

 $00:01:30.680 \longrightarrow 00:01:32.678$ and are no doubt well aware.

NOTE Confidence: 0.86347365

 $00:01:32.680 \longrightarrow 00:01:34.774$ Operation Warp Speed is perhaps the

NOTE Confidence: 0.86347365

 $00:01:34.774 \longrightarrow 00:01:36.543$ most visible representation of those

NOTE Confidence: 0.86347365

 $00:01:36.543 \longrightarrow 00:01:38.415$ efforts to innovate in to accelerate

NOTE Confidence: 0.86347365

 $00:01:38.415 \longrightarrow 00:01:40.470$ the research and development process,

NOTE Confidence: 0.86347365

 $00:01:40.470 \longrightarrow 00:01:42.240$ and you've heard about it.

NOTE Confidence: 0.86347365

 $00:01:42.240 \longrightarrow 00:01:44.340$ There's months of slowie the scientific

NOTE Confidence: 0.86347365

 $00:01:44.340 \longrightarrow 00:01:46.840$ head of the operation warp speed effort,

00:01:46.840 --> 00:01:49.664 and then you've heard about that their work.

NOTE Confidence: 0.86347365

00:01:49.670 --> 00:01:51.539 I don't need to repeat the way

NOTE Confidence: 0.86347365

00:01:51.539 --> 00:01:53.550 in which they were intended to

NOTE Confidence: 0.86347365

 $00:01:53.550 \longrightarrow 00:01:55.842$ facilitate and accelerate some of the

NOTE Confidence: 0.86347365

 $00:01:55.842 \longrightarrow 00:01:57.809$ research and development programs,

NOTE Confidence: 0.86347365

 $00:01:57.810 \longrightarrow 00:02:00.743$ as well as the manufacturing of vaccines

NOTE Confidence: 0.86347365

 $00:02:00.743 \longrightarrow 00:02:03.575$ where that balancing act in in terms of of.

NOTE Confidence: 0.86347365

 $00{:}02{:}03.580 \dashrightarrow 00{:}02{:}05.518$ How we think about that first

NOTE Confidence: 0.86347365

 $00:02:05.518 \longrightarrow 00:02:06.487$ sort of tension?

NOTE Confidence: 0.86347365

 $00:02:06.490 \longrightarrow 00:02:08.374$ I articulated where the questions around

NOTE Confidence: 0.86347365

 $00{:}02{:}08.374 \dashrightarrow 00{:}02{:}10.369$ the review and evaluation of vaccine

NOTE Confidence: 0.86347365

 $00{:}02{:}10.369 \dashrightarrow 00{:}02{:}11.741$ candidates and persisting concerns

NOTE Confidence: 0.86347365

00:02:11.741 --> 00:02:13.589 throughout the summer into the fall,

NOTE Confidence: 0.86347365

 $00{:}02{:}13.590 \dashrightarrow 00{:}02{:}15.215$ and actually just recently affirmed

NOTE Confidence: 0.86347365

 $00:02:15.215 \longrightarrow 00:02:17.519$ just in the past few hours by

NOTE Confidence: 0.86347365

00:02:17.519 --> 00:02:18.755 by Doctor Stephen Hahn.

00:02:18.760 --> 00:02:20.264 The current FDA commissioner

NOTE Confidence: 0.86347365

 $00{:}02{:}20.264 \dashrightarrow 00{:}02{:}21.768$ regarding concerns about pressure

NOTE Confidence: 0.86347365

 $00:02:21.768 \longrightarrow 00:02:23.950$ to two on the part of the White

NOTE Confidence: 0.86347365

 $00:02:23.950 \longrightarrow 00:02:26.004$ House on the part of the outgoing

NOTE Confidence: 0.86347365

 $00:02:26.004 \longrightarrow 00:02:27.809$ president to accelerate to interfere.

NOTE Confidence: 0.86347365

 $00:02:27.810 \longrightarrow 00:02:29.700$ Perhaps with the review of vaccine

NOTE Confidence: 0.86347365

 $00:02:29.700 \longrightarrow 00:02:31.695$ candidates by the Food and Drug

NOTE Confidence: 0.86347365

 $00:02:31.695 \longrightarrow 00:02:33.723$ Administration over over this past fall.

NOTE Confidence: 0.86347365

 $00:02:33.730 \longrightarrow 00:02:35.255$ And we heard repeatedly into

NOTE Confidence: 0.86347365

00:02:35.255 --> 00:02:36.780 great credit of Doctor Marx,

NOTE Confidence: 0.86347365

 $00:02:36.780 \longrightarrow 00:02:39.220$ who will hear from in a little bit,

NOTE Confidence: 0.86347365

 $00{:}02{:}39.220 \dashrightarrow 00{:}02{:}40.918$ and his colleagues at the FDA

NOTE Confidence: 0.86347365

 $00{:}02{:}40.918 --> 00{:}02{:}42.050$ loud and clear in

NOTE Confidence: 0.8427949

00:02:42.119 --> 00:02:44.039 this paper in JAMA is a

NOTE Confidence: 0.8427949

 $00:02:44.039 \longrightarrow 00:02:45.319$ representative example of it.

00:02:45.320 --> 00:02:46.988 From September, the degree to which

NOTE Confidence: 0.8427949

00:02:46.988 --> 00:02:48.680 they were committed to preserving,

NOTE Confidence: 0.8427949

 $00:02:48.680 \longrightarrow 00:02:50.445$ to strengthening to defending the

NOTE Confidence: 0.8427949

 $00{:}02{:}50.445 \dashrightarrow 00{:}02{:}52.210$ scientific review process of these

NOTE Confidence: 0.8427949

 $00:02:52.267 \longrightarrow 00:02:54.451$ vaccine candidates to allow there not to

NOTE Confidence: 0.8427949

00:02:54.451 --> 00:02:56.395 be compromises with respect to the to

NOTE Confidence: 0.8427949

 $00:02:56.395 \longrightarrow 00:02:58.135$ the speed and quality of the evidence.

NOTE Confidence: 0.8427949

00:02:58.135 --> 00:03:00.270 Review, even as we were moving quickly,

NOTE Confidence: 0.8427949

00:03:00.270 --> 00:03:02.100 still still in a rigorous way,

NOTE Confidence: 0.8427949

00:03:02.100 --> 00:03:03.655 but quickly through the vaccine

NOTE Confidence: 0.8427949

 $00{:}03{:}03.655 \dashrightarrow 00{:}03{:}05.210$ development process that balancing act.

NOTE Confidence: 0.8427949

 $00:03:05.210 \longrightarrow 00:03:07.233$ And that that work to preserve the

NOTE Confidence: 0.8427949

00:03:07.233 --> 00:03:09.239 integrity of the FDA review process,

NOTE Confidence: 0.8427949

00:03:09.240 --> 00:03:11.640 I think, was a was a great asset

NOTE Confidence: 0.8427949

 $00:03:11.640 \longrightarrow 00:03:13.268$ and remains a great asset,

NOTE Confidence: 0.8427949

 $00:03:13.270 \longrightarrow 00:03:15.223$ taking one one of the challenges off

 $00:03:15.223 \longrightarrow 00:03:17.459$ the table that we now encounter with

NOTE Confidence: 0.8427949

00:03:17.459 --> 00:03:19.463 respect to these vaccines in September,

NOTE Confidence: 0.8427949

 $00:03:19.470 \longrightarrow 00:03:20.582$ the New England Journal.

NOTE Confidence: 0.8427949

00:03:20.582 --> 00:03:22.653 Drawing upon my prior work studying the

NOTE Confidence: 0.8427949

 $00:03:22.653 \dashrightarrow 00:03:24.428 \ {\it Vaccine Expert Advisory Committee process},$

NOTE Confidence: 0.8427949

00:03:24.430 --> 00:03:26.488 the role of expert advisors and public

NOTE Confidence: 0.8427949

00:03:26.488 --> 00:03:27.951 health policy making more generally

NOTE Confidence: 0.8427949

 $00:03:27.951 \longrightarrow 00:03:29.799$ in the important role they can play

NOTE Confidence: 0.8427949

00:03:29.799 --> 00:03:31.613 in transparency and in promoting

NOTE Confidence: 0.8427949

 $00{:}03{:}31.613 \dashrightarrow 00{:}03{:}33.109$ public confidence in vaccines.

NOTE Confidence: 0.8427949

 $00{:}03{:}33.110 \dashrightarrow 00{:}03{:}35.590$ I wrote a piece that supported this measure,

NOTE Confidence: 0.8427949

 $00:03:35.590 \longrightarrow 00:03:37.140$ relying on our government scientists.

NOTE Confidence: 0.8427949

 $00{:}03{:}37.140 \dashrightarrow 00{:}03{:}38.770$ Those expert advisors such as.

NOTE Confidence: 0.8427949

 $00:03:38.770 \longrightarrow 00:03:40.435$ Burp active vaccines Advisory committee

NOTE Confidence: 0.8427949

 $00:03:40.435 \longrightarrow 00:03:42.503$ that met so prominently with our

 $00:03:42.503 \longrightarrow 00:03:44.258$ initial vaccine candidates in December.

NOTE Confidence: 0.8427949

 $00:03:44.260 \longrightarrow 00:03:46.390$ The value that those mechanisms those

NOTE Confidence: 0.8427949

 $00:03:46.390 \longrightarrow 00:03:48.172$ processes those time tested review

NOTE Confidence: 0.8427949

00:03:48.172 --> 00:03:50.008 entities serve even in this time

NOTE Confidence: 0.8427949

 $00:03:50.008 \longrightarrow 00:03:51.800$ of great urgency and innovation.

NOTE Confidence: 0.8427949

00:03:51.800 --> 00:03:54.328 And I think the review process that we

NOTE Confidence: 0.8427949

 $00:03:54.328 \longrightarrow 00:03:56.758$ found ourselves with left us with not

NOTE Confidence: 0.8427949

00:03:56.758 --> 00:03:58.488 just highly efficacious ANAN vaccines

NOTE Confidence: 0.8427949

 $00{:}03{:}58.549 \dashrightarrow 00{:}04{:}00.715$ with a very favorable safety profile,

NOTE Confidence: 0.8427949

 $00:04:00.720 \longrightarrow 00:04:03.248$ but real confidence in the quality of the

NOTE Confidence: 0.8427949

 $00:04:03.248 \longrightarrow 00:04:05.874$ work by which that evidence was collected

NOTE Confidence: 0.8427949

00:04:05.874 --> 00:04:08.779 and by which that evidence was analyzing.

NOTE Confidence: 0.8427949

00:04:08.780 --> 00:04:09.948 At the state level,

NOTE Confidence: 0.8427949

 $00:04:09.948 \longrightarrow 00:04:11.700$ we're seeing lots of attention

NOTE Confidence: 0.8427949

00:04:11.762 --> 00:04:13.694 to the role that states are playing

NOTE Confidence: 0.8427949

 $00:04:13.694 \longrightarrow 00:04:15.020$ in the vaccine rollout,

 $00:04:15.020 \longrightarrow 00:04:16.550$ including not just the issues

NOTE Confidence: 0.8427949

 $00:04:16.550 \longrightarrow 00:04:18.080$ around allocation that are getting

NOTE Confidence: 0.8427949

 $00:04:18.130 \longrightarrow 00:04:19.470$ a lot of attention recently.

NOTE Confidence: 0.8427949

00:04:19.470 --> 00:04:20.960 Of course, for understandable reasons,

NOTE Confidence: 0.8427949

 $00:04:20.960 \longrightarrow 00:04:22.604$ but also the question about how

NOTE Confidence: 0.8427949

 $00:04:22.604 \longrightarrow 00:04:24.537$ the science can inform the way in

NOTE Confidence: 0.8427949

00:04:24.537 --> 00:04:26.091 which the state of Connecticut and

NOTE Confidence: 0.8427949

 $00:04:26.091 \longrightarrow 00:04:27.792$ other states are supporting the

NOTE Confidence: 0.8427949

 $00:04:27.792 \longrightarrow 00:04:29.522$ rollout and distribution of these

NOTE Confidence: 0.8427949

 $00{:}04{:}29.522 \dashrightarrow 00{:}04{:}30.761$ vaccines here in Connecticut.

NOTE Confidence: 0.8427949

 $00:04:30.761 \longrightarrow 00:04:31.949$ As, as you heard,

NOTE Confidence: 0.8427949

 $00{:}04{:}31.950 \dashrightarrow 00{:}04{:}34.030$ were one of those states that has a

NOTE Confidence: 0.8427949

 $00{:}04{:}34.030 \dashrightarrow 00{:}04{:}35.507$ vaccine advisory committee on which

NOTE Confidence: 0.8427949

 $00:04:35.507 \longrightarrow 00:04:37.307$ I serve along with aryel colleagues

NOTE Confidence: 0.8427949

 $00:04:37.307 \longrightarrow 00:04:39.070$ Brick Martinello and Albert Cohen.

 $00:04:39.070 \longrightarrow 00:04:39.666$ Jim hadler.

NOTE Confidence: 0.8427949

 $00:04:39.666 \longrightarrow 00:04:41.752$ On our main advisory group and the

NOTE Confidence: 0.8427949

00:04:41.752 --> 00:04:43.435 Science subcommittee and one of

NOTE Confidence: 0.8427949

 $00:04:43.435 \longrightarrow 00:04:45.090$ the responsibilities of our group

NOTE Confidence: 0.8427949

 $00:04:45.090 \longrightarrow 00:04:46.808$ is not to replace or usurp,

NOTE Confidence: 0.8427949

00:04:46.810 --> 00:04:49.582 or to duplicate the work that the FDA did.

NOTE Confidence: 0.8427949

 $00{:}04{:}49.590 \dashrightarrow 00{:}04{:}50.822$ Reviewing the vaccine candidates.

NOTE Confidence: 0.8427949

00:04:50.822 --> 00:04:51.130 But,

NOTE Confidence: 0.8427949

 $00:04:51.130 \longrightarrow 00:04:53.279$ as these vaccines were being made available,

NOTE Confidence: 0.8427949

 $00:04:53.280 \longrightarrow 00:04:54.834$ and as they had been authorized

NOTE Confidence: 0.8427949

 $00{:}04{:}54.834 \dashrightarrow 00{:}04{:}57.036$ by the FDA to affirm the integrity

NOTE Confidence: 0.8427949

00:04:57.036 --> 00:04:59.244 of those review processes to look

NOTE Confidence: 0.8427949

 $00:04:59.244 \longrightarrow 00:05:00.368$ carefully at the data,

NOTE Confidence: 0.8427949

00:05:00.370 --> 00:05:02.826 the way in which the data was collected,

NOTE Confidence: 0.8427949

 $00:05:02.830 \longrightarrow 00:05:04.986$ the way in which it was reviewed,

NOTE Confidence: 0.8427949

 $00:05:04.990 \longrightarrow 00:05:07.446$ and to provide one more set of eyes,

 $00:05:07.450 \longrightarrow 00:05:09.352$ one more vote of confidence that

NOTE Confidence: 0.8427949

 $00:05:09.352 \longrightarrow 00:05:10.303$ we could have.

NOTE Confidence: 0.8427949

 $00:05:10.310 \longrightarrow 00:05:12.515$ We could we could trust the mechanisms

NOTE Confidence: 0.8427949

 $00:05:12.515 \longrightarrow 00:05:15.010$ that were used to help us get the

NOTE Confidence: 0.8427949

 $00:05:15.010 \longrightarrow 00:05:16.800$ vaccines that we're now rolling out,

NOTE Confidence: 0.8427949

 $00:05:16.800 \longrightarrow 00:05:18.324$ and you can see the summary

NOTE Confidence: 0.8427949

 $00:05:18.324 \longrightarrow 00:05:19.340$ statement here affirming the

NOTE Confidence: 0.8151021

 $00:05:19.394 \longrightarrow 00:05:21.214$ integrity of the processor recommendation

NOTE Confidence: 0.8151021

00:05:21.214 --> 00:05:22.670 that our science subcommittee,

NOTE Confidence: 0.8151021

 $00:05:22.670 \longrightarrow 00:05:24.215$ major Governor Lamont first for

NOTE Confidence: 0.8151021

00:05:24.215 --> 00:05:25.760 the Pfizer by Ontech vaccine,

NOTE Confidence: 0.8151021

 $00{:}05{:}25.760 \dashrightarrow 00{:}05{:}27.608$ and again for the Moderna vaccine

NOTE Confidence: 0.8151021

 $00{:}05{:}27.608 \dashrightarrow 00{:}05{:}29.470$ in a process, will continue for

NOTE Confidence: 0.8151021

 $00{:}05{:}29.470 \dashrightarrow 00{:}05{:}30.400$ subsequent vaccine candidates.

NOTE Confidence: 0.8151021

 $00:05:30.400 \longrightarrow 00:05:32.612$ As part of this broader effort to

 $00:05:32.612 \longrightarrow 00:05:34.627$ build confidence in the vaccines and

NOTE Confidence: 0.8151021

 $00{:}05{:}34.627 \dashrightarrow 00{:}05{:}36.631$ to help support and evidenced way

NOTE Confidence: 0.8151021

 $00{:}05{:}36.631 \dashrightarrow 00{:}05{:}38.877$ their rollout and their distribution.

NOTE Confidence: 0.8151021

 $00:05:38.880 \longrightarrow 00:05:43.785$ As we turn to the issues around rollout and.

NOTE Confidence: 0.8151021

 $00:05:43.790 \longrightarrow 00:05:45.758$ Next slide here is not advancing,

NOTE Confidence: 0.8151021

 $00:05:45.760 \longrightarrow 00:05:47.400$ which is a bit problematic.

NOTE Confidence: 0.8151021

 $00:05:47.400 \longrightarrow 00:05:49.832$ Excuse me here as we turn to the

NOTE Confidence: 0.8151021

 $00:05:49.832 \longrightarrow 00:05:51.890$ issues around roll out and hopefully

NOTE Confidence: 0.8151021

 $00{:}05{:}51.890 \dashrightarrow 00{:}05{:}53.954$ you can still see that slide.

NOTE Confidence: 0.8151021

 $00:05:53.960 \longrightarrow 00:05:55.969$ Here colleagues and I picking up on

NOTE Confidence: 0.8151021

 $00{:}05{:}55.969 \dashrightarrow 00{:}05{:}58.217$ some of the work that Jenny Pitts

NOTE Confidence: 0.8151021

00:05:58.217 --> 00:06:00.197 and her colleagues in the public

NOTE Confidence: 0.8151021

 $00:06:00.263 \longrightarrow 00:06:02.158$ Health Modeling Unit are doing.

NOTE Confidence: 0.8151021

00:06:02.160 --> 00:06:04.128 Another of their colleagues in mind,

NOTE Confidence: 0.8151021

 $00{:}06{:}04.130 \dashrightarrow 00{:}06{:}06.092$ David Pal teal from the School

NOTE Confidence: 0.8151021

00:06:06.092 --> 00:06:07.073 of Public Health,

00:06:07.080 --> 00:06:08.720 along with Doctor Rochelle Lenski,

NOTE Confidence: 0.8151021

 $00:06:08.720 \longrightarrow 00:06:10.688$ the incoming director of the CDC,

NOTE Confidence: 0.8151021

 $00:06:10.690 \longrightarrow 00:06:12.062$ and the new administration.

NOTE Confidence: 0.8151021

00:06:12.062 --> 00:06:13.434 We looked using mathematical

NOTE Confidence: 0.8151021

 $00:06:13.434 \longrightarrow 00:06:14.815$ modeling techniques at how

NOTE Confidence: 0.8151021

 $00:06:14.815 \longrightarrow 00:06:15.790$ different vaccine candidates.

NOTE Confidence: 0.8151021

00:06:15.790 --> 00:06:16.792 Having different profiles,

NOTE Confidence: 0.8151021

 $00:06:16.792 \longrightarrow 00:06:18.128$ hypothetical profiles with respect

NOTE Confidence: 0.8151021

 $00:06:18.128 \longrightarrow 00:06:20.006$ to their efficacy as defined in

NOTE Confidence: 0.8151021

 $00:06:20.006 \longrightarrow 00:06:21.106$ different ways against infection

NOTE Confidence: 0.8151021

 $00:06:21.106 \longrightarrow 00:06:22.360$ or transmission or severity.

NOTE Confidence: 0.8151021

 $00:06:22.360 \longrightarrow 00:06:24.478$ Looking at different ways in which

NOTE Confidence: 0.8151021

 $00{:}06{:}24.478 \dashrightarrow 00{:}06{:}26.205$ vaccines are implemented in terms

NOTE Confidence: 0.8151021

 $00{:}06{:}26.205 --> 00{:}06{:}27.997$ of the pace of their roll out,

NOTE Confidence: 0.8151021

 $00:06:28.000 \longrightarrow 00:06:29.960$ the number of individuals in terms of

00:06:29.960 --> 00:06:32.069 the fraction of the population reached,

NOTE Confidence: 0.8151021

 $00:06:32.070 \longrightarrow 00:06:34.158$ as well as what the state of the

NOTE Confidence: 0.8151021

 $00{:}06{:}34.158 \dashrightarrow 00{:}06{:}35.794$ pandemic is at the circumstances

NOTE Confidence: 0.8151021

 $00:06:35.794 \longrightarrow 00:06:37.894$ which in which a vaccine is

NOTE Confidence: 0.8151021

 $00:06:37.894 \longrightarrow 00:06:39.255$ introduced as measured through

NOTE Confidence: 0.8151021

 $00:06:39.255 \longrightarrow 00:06:41.765$ through our party and what we did in

NOTE Confidence: 0.8151021

00:06:41.765 --> 00:06:43.900 collapsing a lot of work and into

NOTE Confidence: 0.8151021

 $00:06:43.900 \longrightarrow 00:06:46.278$ a single slide that that could be.

NOTE Confidence: 0.8151021

 $00:06:46.280 \longrightarrow 00:06:48.458$ Full paper was to look at,

NOTE Confidence: 0.8151021

 $00:06:48.460 \longrightarrow 00:06:50.626$ see what factors could help drive

NOTE Confidence: 0.8151021

 $00{:}06{:}50.626 {\:\dashrightarrow\:} 00{:}06{:}52.879$ a vaccine rollout that could be

NOTE Confidence: 0.8151021

00:06:52.879 --> 00:06:54.719 most effective at reducing cases

NOTE Confidence: 0.8151021

00:06:54.719 --> 00:06:56.587 of COVID-19 and reducing deaths

NOTE Confidence: 0.8151021

00:06:56.587 --> 00:06:58.327 and what we found summarizing

NOTE Confidence: 0.8151021

 $00:06:58.327 \longrightarrow 00:07:00.668$ a lot of information into a key

NOTE Confidence: 0.8151021

 $00:07:00.668 \longrightarrow 00:07:02.600$ point was looking at the effects

 $00{:}07{:}02.663 \dashrightarrow 00{:}07{:}04.479$ that implementation really has.

NOTE Confidence: 0.8151021

 $00:07:04.480 \longrightarrow 00:07:05.672$ As the title suggests,

NOTE Confidence: 0.8151021

 $00:07:05.672 \longrightarrow 00:07:08.041$ here that even if we have very

NOTE Confidence: 0.8151021

 $00{:}07{:}08.041 \dashrightarrow 00{:}07{:}09.580$ highly efficacious vaccines,

NOTE Confidence: 0.8151021

 $00:07:09.580 \longrightarrow 00:07:12.485$ this slide only went up to 75% efficacy,

NOTE Confidence: 0.8151021

 $00:07:12.485 \longrightarrow 00:07:15.040$ but the pattern holds that even 95%

NOTE Confidence: 0.8151021

 $00:07:15.040 \longrightarrow 00:07:17.644$ efficacy that what will be matter critically.

NOTE Confidence: 0.8151021

 $00:07:17.650 \longrightarrow 00:07:19.778$ Or it is the pace in which we

NOTE Confidence: 0.8151021

 $00{:}07{:}19.778 \dashrightarrow 00{:}07{:}21.309$ can implement these vaccines,

NOTE Confidence: 0.8151021

 $00:07:21.310 \longrightarrow 00:07:24.055$ the speed at which we can roll them out,

NOTE Confidence: 0.8151021

 $00{:}07{:}24.060 \dashrightarrow 00{:}07{:}26.090$ the number of the percentage of the

NOTE Confidence: 0.8151021

 $00:07:26.090 \longrightarrow 00:07:27.970$ population we can reach and how

NOTE Confidence: 0.8151021

 $00{:}07{:}27.970 \dashrightarrow 00{:}07{:}29.555$ effectively we are holding down

NOTE Confidence: 0.8151021

 $00{:}07{:}29.555 \dashrightarrow 00{:}07{:}31.726$ the pandemic at the time in which

NOTE Confidence: 0.8151021

 $00:07:31.726 \longrightarrow 00:07:33.201$ the vaccines are being introduced

 $00:07:33.210 \longrightarrow 00:07:34.925$ as measured through RT that we can

NOTE Confidence: 0.8151021

 $00{:}07{:}34.925 {\: -->\:} 00{:}07{:}36.432$ accrue much greater vaccine related

NOTE Confidence: 0.8151021

 $00:07:36.432 \longrightarrow 00:07:37.868$ benefits around those circumstances

NOTE Confidence: 0.8151021

 $00:07:37.868 \longrightarrow 00:07:39.656$ of implementation almost as much

NOTE Confidence: 0.8151021

 $00:07:39.656 \longrightarrow 00:07:41.156$ so as some incremental advantages

NOTE Confidence: 0.8151021

00:07:41.156 --> 00:07:42.356 in vaccine efficacy itself,

NOTE Confidence: 0.8151021

 $00:07:42.360 \longrightarrow 00:07:44.663$ we summarize some of these key findings

NOTE Confidence: 0.8151021

00:07:44.663 --> 00:07:46.926 in a companion Op Ed and USA TODAY.

NOTE Confidence: 0.8151021

 $00:07:46.930 \longrightarrow 00:07:47.881$ Back in November,

NOTE Confidence: 0.8151021

 $00:07:47.881 \longrightarrow 00:07:49.466$ when we wrote this paper.

NOTE Confidence: 0.8151021

 $00{:}07{:}49.470 \dashrightarrow 00{:}07{:}51.744$ Really emphasizing things that we're all

NOTE Confidence: 0.8151021

00:07:51.744 --> 00:07:53.899 living through and seeing right now,

NOTE Confidence: 0.8151021

 $00:07:53.900 \longrightarrow 00:07:55.868$ and the public health community has

NOTE Confidence: 0.8151021

 $00{:}07{:}55.868 \dashrightarrow 00{:}07{:}57.666$ been thinking about for sometime

NOTE Confidence: 0.8151021

00:07:57.666 --> 00:07:59.796 about the importance of distribution,

NOTE Confidence: 0.8151021

 $00:07:59.800 \longrightarrow 00:08:01.590$ the importance of continuing our

 $00:08:01.590 \longrightarrow 00:08:03.827$ public health strategies to keep the

NOTE Confidence: 0.8151021

 $00:08:03.827 \longrightarrow 00:08:05.704$ virus manageable, all things considered,

NOTE Confidence: 0.8151021

 $00:08:05.704 \longrightarrow 00:08:07.544$ an the importance in investment.

NOTE Confidence: 0.86860204

 $00:08:07.550 \longrightarrow 00:08:09.390$ The investment in implementation of

NOTE Confidence: 0.86860204

 $00:08:09.390 \longrightarrow 00:08:10.862$ vaccine distribution and delivery.

NOTE Confidence: 0.86860204

 $00:08:10.870 \longrightarrow 00:08:13.090$ As we wrote in in November,

NOTE Confidence: 0.86860204

 $00:08:13.090 \longrightarrow 00:08:15.666$ challenges that we're continuing to see now,

NOTE Confidence: 0.86860204

00:08:15.670 --> 00:08:17.535 and hopefully efforts that will

NOTE Confidence: 0.86860204

 $00:08:17.535 \longrightarrow 00:08:20.210$ improve as the weeks and months ago.

NOTE Confidence: 0.86860204

 $00:08:20.210 \longrightarrow 00:08:22.786$ Along with respect to the to the

NOTE Confidence: 0.86860204

00:08:22.786 --> 00:08:24.448 investments in vaccine rollout

NOTE Confidence: 0.86860204

 $00:08:24.448 \longrightarrow 00:08:26.376$ that we're now encountering.

NOTE Confidence: 0.86860204

 $00{:}08{:}26.380 \dashrightarrow 00{:}08{:}28.452$ My colleagues and I have continued this

NOTE Confidence: 0.86860204

 $00{:}08{:}28.452 \dashrightarrow 00{:}08{:}30.471$ work looking using that model as well

NOTE Confidence: 0.86860204

 $00:08:30.471 \longrightarrow 00:08:32.091$ to think about questions that have

00:08:32.147 --> 00:08:34.013 also come up earlier today thinking

NOTE Confidence: 0.86860204

 $00{:}08{:}34.013 \dashrightarrow 00{:}08{:}35.555$ about particular one dose vaccines,

NOTE Confidence: 0.86860204

 $00:08:35.555 \longrightarrow 00:08:37.325$ windows vaccines or Windows vaccine regimens.

NOTE Confidence: 0.86860204

00:08:37.330 --> 00:08:39.106 If there are studied and confirmed,

NOTE Confidence: 0.86860204

 $00:08:39.110 \longrightarrow 00:08:40.972$ what would we look at in terms

NOTE Confidence: 0.86860204

 $00:08:40.972 \longrightarrow 00:08:43.432$ of the of the trade offs in over

NOTE Confidence: 0.86860204

 $00:08:43.432 \longrightarrow 00:08:45.027$ a six month time horizon?

NOTE Confidence: 0.86860204

 $00:08:45.030 \longrightarrow 00:08:47.568$ Is this paper looks at in terms of the

NOTE Confidence: 0.86860204

 $00{:}08{:}47.568 {\:\raisebox{--}{\text{--}}}{\:\raisebox{--}{\text{--}}}{\:\raisebox{--}{\text{--}}} 00{:}08{:}49.353$ advantages of a one dose formulation

NOTE Confidence: 0.86860204

 $00:08:49.353 \longrightarrow 00:08:51.159$ in terms of of providing efficacy

NOTE Confidence: 0.86860204

 $00:08:51.159 \longrightarrow 00:08:53.294$ more quickly than two doses in terms

NOTE Confidence: 0.86860204

 $00:08:53.294 \longrightarrow 00:08:56.450$ of what level of efficacy might?

NOTE Confidence: 0.86860204

 $00:08:56.450 \longrightarrow 00:08:58.781$ Below that 95% threshold we now have

NOTE Confidence: 0.86860204

 $00:08:58.781 \longrightarrow 00:09:01.401$ result in as many infections or deaths

NOTE Confidence: 0.86860204

00:09:01.401 --> 00:09:04.479 averted and what we found using our model,

NOTE Confidence: 0.86860204

 $00:09:04.480 \longrightarrow 00:09:06.670$ which again no model is perfect.

 $00:09:06.670 \longrightarrow 00:09:08.495$ But they help frame and

NOTE Confidence: 0.86860204

 $00{:}09{:}08.495 \dashrightarrow 00{:}09{:}09{:}955$ hopefully inform the debate.

NOTE Confidence: 0.86860204

 $00:09:09.960 \dashrightarrow 00:09:12.976$ We found that a single dose vaccine that

NOTE Confidence: 0.86860204

 $00:09:12.976 \longrightarrow 00:09:14.837$ provides protection over an indefinite

NOTE Confidence: 0.86860204

00:09:14.837 --> 00:09:17.259 period could have an efficacy of 55%

NOTE Confidence: 0.86860204

 $00:09:17.260 \longrightarrow 00:09:19.962$ and invert as many infections over a

NOTE Confidence: 0.86860204

 $00:09:19.962 \longrightarrow 00:09:22.730$ six month period as that 95% two dose

NOTE Confidence: 0.86860204

 $00:09:22.730 \longrightarrow 00:09:24.920$ vaccine series and if efficacy wanes,

NOTE Confidence: 0.86860204

 $00{:}09{:}24.920 \to 00{:}09{:}26.750$ obviously that's an important consideration.

NOTE Confidence: 0.86860204

 $00:09:26.750 \longrightarrow 00:09:28.294$ Well then, even uh.

NOTE Confidence: 0.86860204

00:09:28.294 --> 00:09:28.995 Duration, mean,

NOTE Confidence: 0.86860204

00:09:28.995 --> 00:09:30.570 duration of efficacy of 75%,

NOTE Confidence: 0.86860204

 $00{:}09{:}30.570 \dashrightarrow 00{:}09{:}32.768$ mean duration of efficacy of six months,

NOTE Confidence: 0.86860204

 $00{:}09{:}32.770 \dashrightarrow 00{:}09{:}34.696$ rather even a 75% efficacy could

NOTE Confidence: 0.86860204

 $00:09:34.696 \longrightarrow 00:09:36.640$ avert the same number of infections

 $00:09:36.640 \longrightarrow 00:09:38.125$ as a two dose series.

NOTE Confidence: 0.86860204

 $00{:}09{:}38.130 \dashrightarrow 00{:}09{:}39.705$ Just looking at the advantages

NOTE Confidence: 0.86860204

00:09:39.705 --> 00:09:41.280 of getting immunity more quickly.

NOTE Confidence: 0.86860204

 $00:09:41.280 \longrightarrow 00:09:43.135$ Not to mention the issues around pacing

NOTE Confidence: 0.86860204

 $00:09:43.135 \longrightarrow 00:09:45.059$ and speed of vaccine distribution.

NOTE Confidence: 0.86860204

 $00:09:45.060 \longrightarrow 00:09:47.328$ So one data point again a full

NOTE Confidence: 0.86860204

00:09:47.328 --> 00:09:49.252 paper that's hard to do justice

NOTE Confidence: 0.86860204

 $00:09:49.252 \longrightarrow 00:09:50.727$ to in a single slide.

NOTE Confidence: 0.86860204

 $00{:}09{:}50.730 \mathrel{--}{>} 00{:}09{:}52.515$ That helps us to try and think

NOTE Confidence: 0.86860204

 $00:09:52.515 \longrightarrow 00:09:54.056$ about some of these considerations

NOTE Confidence: 0.86860204

 $00:09:54.056 \longrightarrow 00:09:56.569$ that might emerge in the weeks and

NOTE Confidence: 0.86860204

 $00{:}09{:}56.569 \dashrightarrow 00{:}09{:}58.725$ months ahead as we begin thinking

NOTE Confidence: 0.86860204

 $00{:}09{:}58.725 \dashrightarrow 00{:}10{:}00.113$ about collecting more data.

NOTE Confidence: 0.86860204

 $00:10:00.120 \longrightarrow 00:10:01.419$ Out windows alternatives.

NOTE Confidence: 0.86860204

 $00:10:01.419 \longrightarrow 00:10:04.923$ Very briefly and then to try to help

NOTE Confidence: 0.86860204

 $00:10:04.923 \longrightarrow 00:10:07.269$ us return a closer to schedule,

 $00:10:07.270 \longrightarrow 00:10:10.294$ I want to turn to the global context here.

NOTE Confidence: 0.86860204

 $00{:}10{:}10.300 \dashrightarrow 00{:}10{:}11.644$ Such an important consideration.

NOTE Confidence: 0.86860204

 $00{:}10{:}11.644 \dashrightarrow 00{:}10{:}14.041$ Lots of our colleagues here at Yale

NOTE Confidence: 0.86860204

 $00:10:14.041 \longrightarrow 00:10:15.991$ and elsewhere have been thinking much

NOTE Confidence: 0.86860204

 $00:10:15.991 \longrightarrow 00:10:18.358$ more deeply around the global vaccine story,

NOTE Confidence: 0.86860204

 $00:10:18.360 \longrightarrow 00:10:20.040$ including my colleagues at over,

NOTE Confidence: 0.86860204

 $00:10:20.040 \longrightarrow 00:10:21.148$ who's up next year.

NOTE Confidence: 0.86860204

 $00:10:21.148 \longrightarrow 00:10:23.233$ But it's such an important part of

NOTE Confidence: 0.86860204

 $00{:}10{:}23.233 \rightarrow 00{:}10{:}25.078$ this broader policy and politics

NOTE Confidence: 0.86860204

00:10:25.078 --> 00:10:27.100 conversation around around covid vaccines.

NOTE Confidence: 0.86860204

 $00{:}10{:}27.100 \dashrightarrow 00{:}10{:}29.068$ BMJ published two very nice papers

NOTE Confidence: 0.86860204

00:10:29.068 --> 00:10:30.790 earlier this year last month.

NOTE Confidence: 0.86860204

 $00{:}10{:}30.790 \dashrightarrow 00{:}10{:}32.630$ Actually in December. Looking at.

NOTE Confidence: 0.86860204

 $00{:}10{:}32.630 \dashrightarrow 00{:}10{:}34.620$ The market place of vaccine reservations

NOTE Confidence: 0.86860204

 $00:10:34.620 \longrightarrow 00:10:37.250$ that exist for cobin 19 vaccines.

 $00:10:37.250 \longrightarrow 00:10:39.225$ The countries that are procured

NOTE Confidence: 0.86860204

 $00{:}10{:}39.225 \dashrightarrow 00{:}10{:}41.870$ vaccines how many have been procured.

NOTE Confidence: 0.86860204

 $00:10:41.870 \longrightarrow 00:10:43.970$ The the vaccine supply anticipated

NOTE Confidence: 0.86860204

 $00:10:43.970 \longrightarrow 00:10:45.230$ for a vaccination.

NOTE Confidence: 0.86860204

00:10:45.230 --> 00:10:48.170 Programs in low and middle income countries,

NOTE Confidence: 0.86860204

 $00:10:48.170 \longrightarrow 00:10:49.355$ particularly through international

NOTE Confidence: 0.86860204

 $00:10:49.355 \longrightarrow 00:10:49.750$ collaborations.

NOTE Confidence: 0.86860204

 $00:10:49.750 \longrightarrow 00:10:52.441$ In one paper and the other looked

NOTE Confidence: 0.86860204

 $00:10:52.441 \longrightarrow 00:10:53.778$ at the demand, you know,

NOTE Confidence: 0.86860204

00:10:53.778 --> 00:10:55.626 tried to measure what the actual need,

NOTE Confidence: 0.86860204

 $00:10:55.630 \longrightarrow 00:10:57.604$ the demand for these vaccines will be

NOTE Confidence: 0.86860204

00:10:57.604 --> 00:10:59.455 a globally depending on how we think

NOTE Confidence: 0.86860204

00:10:59.455 --> 00:11:00.883 about high priority groups or how

NOTE Confidence: 0.84265244

 $00:11:00.937 \longrightarrow 00:11:01.957$ we cast broader Nets.

NOTE Confidence: 0.84265244

 $00:11:01.960 \longrightarrow 00:11:03.780$ And they asked me to write a

NOTE Confidence: 0.84265244

 $00{:}11{:}03.780 \rightarrow 00{:}11{:}05.067$ companion tutorial that I'll close

 $00:11:05.067 \longrightarrow 00:11:06.867$ with here just to return us to the

NOTE Confidence: 0.84265244

00:11:06.923 --> 00:11:08.988 issue of of politics and policy in

NOTE Confidence: 0.84265244

00:11:08.988 --> 00:11:10.408 those intersections that I study.

NOTE Confidence: 0.84265244

00:11:10.408 --> 00:11:11.728 In most of my work,

NOTE Confidence: 0.84265244

 $00:11:11.730 \longrightarrow 00:11:13.834$ and as as we know here at this,

NOTE Confidence: 0.84265244

 $00:11:13.840 \longrightarrow 00:11:15.160$ at this moment of transition,

NOTE Confidence: 0.84265244

 $00:11:15.160 \longrightarrow 00:11:16.590$ and at this important inflection

NOTE Confidence: 0.84265244

 $00:11:16.590 \longrightarrow 00:11:18.020$ point in our vaccination effort

NOTE Confidence: 0.84265244

 $00:11:18.073 \longrightarrow 00:11:19.477$ here in the United States and

NOTE Confidence: 0.84265244

 $00:11:19.477 \longrightarrow 00:11:20.770$ around the world, you know.

NOTE Confidence: 0.84265244

 $00:11:20.770 \longrightarrow 00:11:22.245$ We know that how important

NOTE Confidence: 0.84265244

00:11:22.245 --> 00:11:23.830 this spirit of solidarity,

NOTE Confidence: 0.84265244

 $00{:}11{:}23.830 --> 00{:}11{:}24.510 \ global \ collaboration,$

NOTE Confidence: 0.84265244

00:11:24.510 --> 00:11:25.530 but particularly leadership,

NOTE Confidence: 0.84265244

 $00:11:25.530 \longrightarrow 00:11:27.005$ from from high income wealthy

00:11:27.005 --> 00:11:28.949 countries will be to the success

NOTE Confidence: 0.84265244

 $00{:}11{:}28.949 \dashrightarrow 00{:}11{:}30.609$ of global vaccination efforts,

NOTE Confidence: 0.84265244

00:11:30.610 --> 00:11:32.310 both in the financial, logistical,

NOTE Confidence: 0.84265244

 $00:11:32.310 \longrightarrow 00:11:34.000$ technical way as important partners.

NOTE Confidence: 0.84265244

 $00:11:34.000 \longrightarrow 00:11:36.373$ If we're going to have an equitable

NOTE Confidence: 0.84265244

 $00:11:36.373 \longrightarrow 00:11:37.390$ global vaccine rollout,

NOTE Confidence: 0.84265244

 $00:11:37.390 \longrightarrow 00:11:39.090$ and as I know here,

NOTE Confidence: 0.84265244

 $00:11:39.090 \longrightarrow 00:11:41.306$ I think we're at a point where the

NOTE Confidence: 0.84265244

 $00:11:41.306 \longrightarrow 00:11:43.355$ re engagement of the United States

NOTE Confidence: 0.84265244

 $00:11:43.355 \longrightarrow 00:11:45.145$ in that global health community

NOTE Confidence: 0.84265244

 $00{:}11{:}45.145 \dashrightarrow 00{:}11{:}47.054$ beginning tomorrow with the return

NOTE Confidence: 0.84265244

00:11:47.054 --> 00:11:48.914 to the World Health Organization,

NOTE Confidence: 0.84265244

 $00:11:48.920 \longrightarrow 00:11:51.152$ and hopefully what that signals for

NOTE Confidence: 0.84265244

 $00:11:51.152 \longrightarrow 00:11:53.130$ COVID-19 vaccine efforts globally as well.

NOTE Confidence: 0.84265244

00:11:53.130 --> 00:11:55.138 It is a very favorable signal that will

NOTE Confidence: 0.84265244

 $00:11:55.138 \longrightarrow 00:11:56.970$ certainly not solve their problems ahead,

00:11:56.970 --> 00:11:58.946 but will be really valuable in getting us

NOTE Confidence: 0.84265244

 $00:11:58.946 \longrightarrow 00:12:01.349$ in the right direction on the global front.

NOTE Confidence: 0.84265244

00:12:01.350 --> 00:12:03.342 So with that I will conclude I'm happy

NOTE Confidence: 0.84265244

 $00{:}12{:}03.342 \dashrightarrow 00{:}12{:}05.189$ to follow up individually by email.

NOTE Confidence: 0.84265244

 $00{:}12{:}05.190 \dashrightarrow 00{:}12{:}06.828$ There's my Twitter handle as well,

NOTE Confidence: 0.84265244

 $00{:}12{:}06.830 \dashrightarrow 00{:}12{:}09.021$ and thanks again for the opportunity to

NOTE Confidence: 0.84265244

 $00:12:09.021 \longrightarrow 00:12:11.657$ be part of this group this afternoon.

NOTE Confidence: 0.84265244

00:12:11.660 --> 00:12:12.052 Thank you.