

WEBVTT

NOTE duration:"01:03:00"

NOTE recognizability:0.815

NOTE language:en-us

NOTE Confidence: 0.88095556

00:00:00.000 --> 00:00:02.334 Good afternoon, everyone.

NOTE Confidence: 0.88095556

00:00:02.334 --> 00:00:05.446 Good afternoon. So welcome.

NOTE Confidence: 0.88095556

00:00:05.450 --> 00:00:08.514 Welcome to the final grand rounds of January.

NOTE Confidence: 0.88095556

00:00:08.520 --> 00:00:09.435 We've made it.

NOTE Confidence: 0.88095556

00:00:09.435 --> 00:00:10.960 Spring is around the corner,

NOTE Confidence: 0.88095556

00:00:10.960 --> 00:00:13.544 although I didn't feel that way when I

NOTE Confidence: 0.88095556

00:00:13.544 --> 00:00:16.367 saw the snow coming down this morning.

NOTE Confidence: 0.88095556

00:00:16.370 --> 00:00:18.145 So it's a pleasure to welcome you all here,

NOTE Confidence: 0.88095556

00:00:18.150 --> 00:00:19.590 just to preview for next week.

NOTE Confidence: 0.88095556

00:00:19.590 --> 00:00:20.862 As Andres mentioned,

NOTE Confidence: 0.88095556

00:00:20.862 --> 00:00:23.406 we've got a very special compassionate

NOTE Confidence: 0.88095556

00:00:23.406 --> 00:00:25.932 care rounds next week where we'll hear

NOTE Confidence: 0.88095556

00:00:25.932 --> 00:00:28.218 from a family who experienced care

NOTE Confidence: 0.88095556

00:00:28.218 --> 00:00:30.804 here at Yale together with Jillian  
NOTE Confidence: 0.88095556

00:00:30.804 --> 00:00:32.858 Celentano and Christy Alski and  
NOTE Confidence: 0.88095556

00:00:32.858 --> 00:00:35.234 talking about a family in transition  
NOTE Confidence: 0.88095556

00:00:35.234 --> 00:00:37.758 and the importance of embracing  
NOTE Confidence: 0.88095556

00:00:37.758 --> 00:00:39.810 and supporting gender diversity.  
NOTE Confidence: 0.88095556

00:00:39.810 --> 00:00:42.990 And now over to today's presentation,  
NOTE Confidence: 0.88095556

00:00:42.990 --> 00:00:45.769 it is our distinct pleasure to welcome,  
NOTE Confidence: 0.88095556

00:00:45.770 --> 00:00:46.131 Doctor.  
NOTE Confidence: 0.88095556

00:00:46.131 --> 00:00:48.658 At Omar to the Child Study Center,  
NOTE Confidence: 0.88095556

00:00:48.660 --> 00:00:50.980 we've actually tried to coordinate  
NOTE Confidence: 0.88095556

00:00:50.980 --> 00:00:53.056 this talk for around two years.  
NOTE Confidence: 0.88095556

00:00:53.060 --> 00:00:54.356 But as you'll probably have noticed,  
NOTE Confidence: 0.88095556

00:00:54.360 --> 00:00:56.754 Doctor Omar has been pretty busy providing  
NOTE Confidence: 0.88095556

00:00:56.754 --> 00:00:59.060 expert guidance and advice to various  
NOTE Confidence: 0.88095556

00:00:59.060 --> 00:01:00.284 different international organizations  
NOTE Confidence: 0.88095556

00:01:00.284 --> 00:01:02.758 in response to the COVID-19 pandemic.

NOTE Confidence: 0.88095556

00:01:02.758 --> 00:01:06.110 And that's in part due to his expertise

NOTE Confidence: 0.88095556

00:01:06.191 --> 00:01:08.756 on the epidemiology of respiratory

NOTE Confidence: 0.88095556

00:01:08.756 --> 00:01:11.321 viruses and studies on interventions

NOTE Confidence: 0.88095556

00:01:11.403 --> 00:01:13.311 regarding immunization of mothers

NOTE Confidence: 0.88095556

00:01:13.311 --> 00:01:16.173 and the effects on maternal and.

NOTE Confidence: 0.88095556

00:01:16.180 --> 00:01:16.940 Not help.

NOTE Confidence: 0.88095556

00:01:16.940 --> 00:01:18.840 His work has been disseminated

NOTE Confidence: 0.88095556

00:01:18.840 --> 00:01:20.520 widely and cited widely,

NOTE Confidence: 0.88095556

00:01:20.520 --> 00:01:22.991 so at least five of his publications

NOTE Confidence: 0.88095556

00:01:22.991 --> 00:01:25.134 have exceeded that Magic 1000 citations

NOTE Confidence: 0.88095556

00:01:25.134 --> 00:01:27.900 mark to enter into the Milli Pub club.

NOTE Confidence: 0.88095556

00:01:27.900 --> 00:01:28.868 And which is quite,

NOTE Confidence: 0.88095556

00:01:28.868 --> 00:01:29.836 quite tricky to say.

NOTE Confidence: 0.88095556

00:01:29.840 --> 00:01:31.247 And I think I that was data

NOTE Confidence: 0.88095556

00:01:31.247 --> 00:01:32.439 from a few weeks ago,

NOTE Confidence: 0.88095556

00:01:32.440 --> 00:01:34.042 so perhaps there's even more papers  
NOTE Confidence: 0.88095556

00:01:34.042 --> 00:01:35.800 that have exceeded that threshold now.  
NOTE Confidence: 0.88095556

00:01:35.800 --> 00:01:38.470 Last year Doctor Omar was elected  
NOTE Confidence: 0.88095556

00:01:38.470 --> 00:01:41.239 into the National Academy of Medicine.  
NOTE Confidence: 0.88095556

00:01:41.240 --> 00:01:45.356 And then sad news for Yale,  
NOTE Confidence: 0.88095556

00:01:45.360 --> 00:01:46.837 as many of you will have read.  
NOTE Confidence: 0.88095556

00:01:46.840 --> 00:01:47.630 Last week,  
NOTE Confidence: 0.88095556

00:01:47.630 --> 00:01:50.000 but Dean Brown circulated an e-mail  
NOTE Confidence: 0.88095556

00:01:50.000 --> 00:01:52.265 to congratulate as we extend our  
NOTE Confidence: 0.88095556

00:01:52.265 --> 00:01:53.669 congratulations to Doctor Omar  
NOTE Confidence: 0.88095556

00:01:53.669 --> 00:01:55.864 as well on becoming the incoming  
NOTE Confidence: 0.88095556

00:01:55.864 --> 00:01:58.006 and inaugural Dean of the Peter  
NOTE Confidence: 0.88095556

00:01:58.010 --> 00:01:59.780 O'Donnell Junior School of Public  
NOTE Confidence: 0.88095556

00:01:59.780 --> 00:02:02.108 Health at the University of Texas  
NOTE Confidence: 0.88095556

00:02:02.108 --> 00:02:03.590 Southwestern Medical Center.  
NOTE Confidence: 0.88095556

00:02:03.590 --> 00:02:04.910 And the Irish person in me,

NOTE Confidence: 0.88095556  
00:02:04.910 --> 00:02:06.350 when I heard the name of that center,  
NOTE Confidence: 0.88095556  
00:02:06.350 --> 00:02:07.830 the Peter O'Donnell school thought,  
NOTE Confidence: 0.88095556  
00:02:07.830 --> 00:02:08.679 am I related?  
NOTE Confidence: 0.859091962  
00:02:10.690 --> 00:02:11.870 So without any further ado,  
NOTE Confidence: 0.859091962  
00:02:11.870 --> 00:02:12.920 thank you for being with us  
NOTE Confidence: 0.859091962  
00:02:12.920 --> 00:02:13.912 in person today, Doctor Omar,  
NOTE Confidence: 0.859091962  
00:02:13.912 --> 00:02:15.529 and welcome to the Child City Center.  
NOTE Confidence: 0.889098727692308  
00:02:22.950 --> 00:02:24.637 So because of the Irish roots of  
NOTE Confidence: 0.889098727692308  
00:02:24.637 --> 00:02:26.168 our namesake of the new school,  
NOTE Confidence: 0.889098727692308  
00:02:26.170 --> 00:02:30.626 I'm going to the and the Texas existence.  
NOTE Confidence: 0.889098727692308  
00:02:30.630 --> 00:02:33.046 So we should have Irish whiskey as our  
NOTE Confidence: 0.889098727692308  
00:02:33.046 --> 00:02:35.369 official drink and biscuit as official food.  
NOTE Confidence: 0.889098727692308  
00:02:35.370 --> 00:02:37.890 That's the only logical, you know,  
NOTE Confidence: 0.889098727692308  
00:02:37.890 --> 00:02:39.500 thing to do there. Yeah,  
NOTE Confidence: 0.889098727692308  
00:02:39.500 --> 00:02:41.140 that would be my first order of business.  
NOTE Confidence: 0.742406556666667

00:02:49.780 --> 00:02:55.990 So y'all focus mostly on kids.  
NOTE Confidence: 0.742406556666667

00:02:55.990 --> 00:02:58.050 My focus has been pediatric  
NOTE Confidence: 0.742406556666667

00:02:58.050 --> 00:02:59.698 vaccinations and pediatric outcomes,  
NOTE Confidence: 0.742406556666667

00:02:59.700 --> 00:03:01.940 but also maternal immunization and  
NOTE Confidence: 0.742406556666667

00:03:01.940 --> 00:03:04.766 its impact on early infancy and  
NOTE Confidence: 0.742406556666667

00:03:04.766 --> 00:03:06.641 then increasingly long term impact.  
NOTE Confidence: 0.742406556666667

00:03:06.641 --> 00:03:08.650 So what I'll do is I'll describe  
NOTE Confidence: 0.742406556666667

00:03:08.713 --> 00:03:10.484 some of the work that I've been  
NOTE Confidence: 0.742406556666667

00:03:10.484 --> 00:03:12.218 doing and we have been doing.  
NOTE Confidence: 0.742406556666667

00:03:12.220 --> 00:03:14.780 It's a, it's a whole group of collaborators  
NOTE Confidence: 0.742406556666667

00:03:14.780 --> 00:03:16.696 that have been working particularly  
NOTE Confidence: 0.742406556666667

00:03:16.696 --> 00:03:19.120 in low resource settings to actualize  
NOTE Confidence: 0.742406556666667

00:03:19.120 --> 00:03:21.065 the promise of maternal immunization  
NOTE Confidence: 0.742406556666667

00:03:21.065 --> 00:03:23.671 and some of the outcomes are you  
NOTE Confidence: 0.742406556666667

00:03:23.671 --> 00:03:26.408 know what you would expect prevention of.  
NOTE Confidence: 0.742406556666667

00:03:26.410 --> 00:03:27.840 Infant out of of maternal

NOTE Confidence: 0.742406556666667  
00:03:27.840 --> 00:03:29.270 outcomes and all of that,  
NOTE Confidence: 0.742406556666667  
00:03:29.270 --> 00:03:33.653 but also increasingly birth outcomes as  
NOTE Confidence: 0.742406556666667  
00:03:33.653 --> 00:03:36.237 well as you know briefly talk about some  
NOTE Confidence: 0.742406556666667  
00:03:36.237 --> 00:03:39.234 of the new work in longer term outcomes.  
NOTE Confidence: 0.742406556666667  
00:03:39.240 --> 00:03:43.289 So vaccines have been some of the  
NOTE Confidence: 0.742406556666667  
00:03:43.289 --> 00:03:44.804 most effective and cost effective  
NOTE Confidence: 0.742406556666667  
00:03:44.804 --> 00:03:46.180 public health interventions.  
NOTE Confidence: 0.742406556666667  
00:03:46.180 --> 00:03:47.290 In fact,  
NOTE Confidence: 0.742406556666667  
00:03:47.290 --> 00:03:51.730 CDC at the end of the last Millennium  
NOTE Confidence: 0.742406556666667  
00:03:51.854 --> 00:03:56.318 they came up with a list of 100 most.  
NOTE Confidence: 0.742406556666667  
00:03:56.320 --> 00:03:56.762 Useful,  
NOTE Confidence: 0.742406556666667  
00:03:56.762 --> 00:03:58.972 impactful public health interventions and  
NOTE Confidence: 0.742406556666667  
00:03:58.972 --> 00:04:01.820 vaccinations were at the top of that list,  
NOTE Confidence: 0.742406556666667  
00:04:01.820 --> 00:04:04.880 but they swear that it's not a ranked list.  
NOTE Confidence: 0.742406556666667  
00:04:04.880 --> 00:04:06.592 At the end of the day, you know,  
NOTE Confidence: 0.742406556666667

00:04:06.592 --> 00:04:07.696 they're an organization with  
NOTE Confidence: 0.742406556666667

00:04:07.696 --> 00:04:08.800 all sorts of stakeholders,  
NOTE Confidence: 0.742406556666667

00:04:08.800 --> 00:04:12.202 so they don't want to annoy people who favor,  
NOTE Confidence: 0.742406556666667

00:04:12.210 --> 00:04:12.632 you know,  
NOTE Confidence: 0.742406556666667

00:04:12.632 --> 00:04:14.320 water and hygiene and all of that stuff.  
NOTE Confidence: 0.742406556666667

00:04:14.320 --> 00:04:16.320 But it's no coincidence,  
NOTE Confidence: 0.742406556666667

00:04:16.320 --> 00:04:18.320 coincidence that it's not  
NOTE Confidence: 0.742406556666667

00:04:18.320 --> 00:04:19.320 alphabetically there.  
NOTE Confidence: 0.742406556666667

00:04:19.320 --> 00:04:20.708 You know it doesn't.  
NOTE Confidence: 0.742406556666667

00:04:20.708 --> 00:04:22.980 Vaccines don't start with the letter A,  
NOTE Confidence: 0.742406556666667

00:04:22.980 --> 00:04:25.788 but they remain at the top of the  
NOTE Confidence: 0.742406556666667

00:04:25.788 --> 00:04:28.010 list every time they revisit.  
NOTE Confidence: 0.742406556666667

00:04:28.010 --> 00:04:30.426 But the most of the impact we have  
NOTE Confidence: 0.742406556666667

00:04:30.426 --> 00:04:32.682 had is through childhood vaccination  
NOTE Confidence: 0.742406556666667

00:04:32.682 --> 00:04:35.826 and the and the primary schedule  
NOTE Confidence: 0.742406556666667

00:04:35.826 --> 00:04:38.053 although it's increasingly nuanced



NOTE Confidence: 0.742406556666667

00:04:38.053 --> 00:04:41.191 is mostly 610 fourteen weeks for

NOTE Confidence: 0.742406556666667

00:04:41.191 --> 00:04:44.282 most of the world in in the US

NOTE Confidence: 0.742406556666667

00:04:44.282 --> 00:04:46.070 and a lot of the developed world,

NOTE Confidence: 0.742406556666667

00:04:46.070 --> 00:04:48.034 we have two, four,

NOTE Confidence: 0.742406556666667

00:04:48.034 --> 00:04:49.998 six months primary studies.

NOTE Confidence: 0.742406556666667

00:04:50.000 --> 00:04:52.226 But what what happens is that the

NOTE Confidence: 0.742406556666667

00:04:52.226 --> 00:04:54.279 reason we give this primary series

NOTE Confidence: 0.742406556666667

00:04:54.279 --> 00:04:56.687 is because we need 2/3 doses for

NOTE Confidence: 0.742406556666667

00:04:56.759 --> 00:04:58.819 the vaccines to actually start

NOTE Confidence: 0.742406556666667

00:04:58.819 --> 00:05:00.467 having their full impact.

NOTE Confidence: 0.742406556666667

00:05:00.470 --> 00:05:04.820 And so therefore kids have this period

NOTE Confidence: 0.742406556666667

00:05:04.820 --> 00:05:07.820 of vulnerability through the 1st,

NOTE Confidence: 0.742406556666667

00:05:07.820 --> 00:05:10.490 essentially six months of life.

NOTE Confidence: 0.742406556666667

00:05:10.490 --> 00:05:13.811 And this even in a short period of 13

NOTE Confidence: 0.742406556666667

00:05:13.811 --> 00:05:17.446 years and that has increased substantially.

NOTE Confidence: 0.742406556666667

00:05:17.450 --> 00:05:22.780 Between 1990 and or 23 years and 2013  
NOTE Confidence: 0.742406556666667

00:05:22.780 --> 00:05:26.305 there was a substantial reduction.  
NOTE Confidence: 0.742406556666667

00:05:26.310 --> 00:05:31.620 So starting with 2.5 million underage  
NOTE Confidence: 0.742406556666667

00:05:31.620 --> 00:05:35.060 children under age 5 had died of vaccine  
NOTE Confidence: 0.742406556666667

00:05:35.060 --> 00:05:37.412 preventable diseases that reduced to 750,000.  
NOTE Confidence: 0.742406556666667

00:05:37.412 --> 00:05:39.584 This is around the time a  
NOTE Confidence: 0.742406556666667

00:05:39.584 --> 00:05:41.090 little bit before that.  
NOTE Confidence: 0.742406556666667

00:05:41.090 --> 00:05:44.372 A lot of us started focusing  
NOTE Confidence: 0.742406556666667

00:05:44.372 --> 00:05:46.013 on maternal vaccination.  
NOTE Confidence: 0.742406556666667

00:05:46.020 --> 00:05:47.490 And so we said that look,  
NOTE Confidence: 0.742406556666667

00:05:47.490 --> 00:05:50.035 and even the sustainable development  
NOTE Confidence: 0.742406556666667

00:05:50.035 --> 00:05:52.580 goals are Millennium Development Goals.  
NOTE Confidence: 0.742406556666667

00:05:52.580 --> 00:05:55.835 The the least progress we had seen.  
NOTE Confidence: 0.742406556666667

00:05:55.840 --> 00:05:58.125 And same true with sustainable  
NOTE Confidence: 0.742406556666667

00:05:58.125 --> 00:06:00.520 development goals was early infant  
NOTE Confidence: 0.742406556666667

00:06:00.520 --> 00:06:04.240 mortality and unit of mortality was the

NOTE Confidence: 0.742406556666667

00:06:04.240 --> 00:06:07.000 most intractable part of the puzzle.

NOTE Confidence: 0.742406556666667

00:06:07.000 --> 00:06:09.464 And so even in the now approximately

NOTE Confidence: 0.742406556666667

00:06:09.464 --> 00:06:11.291 3,000,000 deaths happen in the it's

NOTE Confidence: 0.742406556666667

00:06:11.291 --> 00:06:13.275 just the 1st 27 days of life and

NOTE Confidence: 0.742406556666667

00:06:13.275 --> 00:06:15.228 then it's not the full six months.

NOTE Confidence: 0.742406556666667

00:06:15.230 --> 00:06:17.512 So one way of dealing with this

NOTE Confidence: 0.742406556666667

00:06:17.512 --> 00:06:20.082 and one way of addressing it

NOTE Confidence: 0.742406556666667

00:06:20.082 --> 00:06:21.597 is vaccinating mothers.

NOTE Confidence: 0.862689946

00:06:21.600 --> 00:06:24.512 And that's one reason is that some

NOTE Confidence: 0.862689946

00:06:24.512 --> 00:06:27.086 infections are indeed more severe in

NOTE Confidence: 0.862689946

00:06:27.086 --> 00:06:29.168 pregnancy and influenza and hepatitis

NOTE Confidence: 0.862689946

00:06:29.168 --> 00:06:32.954 E is is one example and it seems that

NOTE Confidence: 0.862689946

00:06:32.954 --> 00:06:36.129 COVID-19 is is in that category as well.

NOTE Confidence: 0.862689946

00:06:36.129 --> 00:06:38.950 But the other reason is that you

NOTE Confidence: 0.862689946

00:06:39.033 --> 00:06:42.339 obviously vaccinate to protect the child.

NOTE Confidence: 0.862689946

00:06:42.340 --> 00:06:45.844 The first trial actually I did with my  
NOTE Confidence: 0.862689946

00:06:45.844 --> 00:06:49.626 mentor who who was my MPH advisor and then  
NOTE Confidence: 0.862689946

00:06:49.626 --> 00:06:53.428 sort of later when I was a faculty member,  
NOTE Confidence: 0.862689946

00:06:53.430 --> 00:06:56.048 he was continued to be a collaborator.  
NOTE Confidence: 0.862689946

00:06:56.050 --> 00:06:57.730 I worked the first trial I worked  
NOTE Confidence: 0.862689946

00:06:57.730 --> 00:06:59.186 on of maternal immunization level  
NOTE Confidence: 0.862689946

00:06:59.186 --> 00:07:01.244 talk about was called Mother's gift.  
NOTE Confidence: 0.862689946

00:07:01.250 --> 00:07:02.828 You know, initially at that age,  
NOTE Confidence: 0.862689946

00:07:02.830 --> 00:07:05.021 you know when you are at the  
NOTE Confidence: 0.862689946

00:07:05.021 --> 00:07:06.490 faculty things look cheesy.  
NOTE Confidence: 0.862689946

00:07:06.490 --> 00:07:08.978 You know, if it's too on the nose,  
NOTE Confidence: 0.862689946

00:07:08.980 --> 00:07:10.208 but now in retrospect,  
NOTE Confidence: 0.862689946

00:07:10.208 --> 00:07:13.070 I think it was a very appropriate name  
NOTE Confidence: 0.862689946

00:07:13.070 --> 00:07:15.440 because you're vaccinating the mothers  
NOTE Confidence: 0.862689946

00:07:15.440 --> 00:07:18.718 and they are enhancing their immunological  
NOTE Confidence: 0.862689946

00:07:18.718 --> 00:07:23.088 or physiological gift to protect the baby.

NOTE Confidence: 0.862689946

00:07:23.090 --> 00:07:25.862 So a little bit about Physiology

NOTE Confidence: 0.862689946

00:07:25.862 --> 00:07:28.870 and immunology in pregnancy.

NOTE Confidence: 0.862689946

00:07:28.870 --> 00:07:32.278 Pregnancy is a dynamic stage and so you

NOTE Confidence: 0.862689946

00:07:32.278 --> 00:07:35.460 have an increase in in the sex hormones.

NOTE Confidence: 0.862689946

00:07:35.460 --> 00:07:37.185 I'm assuming this pointer shows

NOTE Confidence: 0.862689946

00:07:37.185 --> 00:07:39.519 up on the zoom side as well.

NOTE Confidence: 0.862689946

00:07:39.520 --> 00:07:42.888 And so, you know, the sex hormones increase,

NOTE Confidence: 0.862689946

00:07:42.890 --> 00:07:45.210 but it's not like a nice clean line.

NOTE Confidence: 0.862689946

00:07:45.210 --> 00:07:46.650 And obviously even this is a,

NOTE Confidence: 0.862689946

00:07:46.650 --> 00:07:47.889 you know, approximation,

NOTE Confidence: 0.862689946

00:07:47.889 --> 00:07:51.258 but it's it goes in steps, in stages,

NOTE Confidence: 0.862689946

00:07:51.258 --> 00:07:53.478 and there's some threshold effect.

NOTE Confidence: 0.862689946

00:07:53.480 --> 00:07:55.020 I'll come back to these two panels.

NOTE Confidence: 0.862689946

00:07:55.020 --> 00:07:57.036 But but if you look at it as a

NOTE Confidence: 0.862689946

00:07:57.036 --> 00:07:58.899 result of that and other changes,

NOTE Confidence: 0.862689946

00:07:58.900 --> 00:08:01.540 there are certain parts of the  
NOTE Confidence: 0.862689946

00:08:01.540 --> 00:08:03.973 immune system that get upregulated  
NOTE Confidence: 0.862689946

00:08:03.973 --> 00:08:06.270 as the pregnancy progresses.  
NOTE Confidence: 0.862689946

00:08:06.270 --> 00:08:09.020 For example, monocytes and fibrocytes,  
NOTE Confidence: 0.862689946

00:08:09.020 --> 00:08:09.664 dendritic cells.  
NOTE Confidence: 0.862689946

00:08:09.664 --> 00:08:12.725 So a lot of the cells of the innate  
NOTE Confidence: 0.862689946

00:08:12.725 --> 00:08:14.765 immune system and T regulatory  
NOTE Confidence: 0.862689946

00:08:14.765 --> 00:08:17.571 cells which sort of keep the abuses  
NOTE Confidence: 0.862689946

00:08:17.571 --> 00:08:19.767 of the immune system in check.  
NOTE Confidence: 0.862689946

00:08:19.770 --> 00:08:21.359 So think of it as the internal  
NOTE Confidence: 0.862689946

00:08:21.359 --> 00:08:23.000 affairs of the Police Department.  
NOTE Confidence: 0.862689946

00:08:23.000 --> 00:08:25.040 And and so.  
NOTE Confidence: 0.862689946

00:08:25.040 --> 00:08:27.878 On the other hand does she  
NOTE Confidence: 0.862689946

00:08:27.878 --> 00:08:30.052 remodeling goes down because you  
NOTE Confidence: 0.862689946

00:08:30.052 --> 00:08:32.308 don't want that level of remodeling.  
NOTE Confidence: 0.862689946

00:08:32.310 --> 00:08:34.060 You know as the pregnancy

NOTE Confidence: 0.862689946

00:08:34.060 --> 00:08:35.460 progresses earlier on you,

NOTE Confidence: 0.862689946

00:08:35.460 --> 00:08:38.428 you want it and cell mediated immunity

NOTE Confidence: 0.862689946

00:08:38.428 --> 00:08:40.520 especially CD4 and CD8 cells,

NOTE Confidence: 0.862689946

00:08:40.520 --> 00:08:43.082 they go down and they're sort of

NOTE Confidence: 0.862689946

00:08:43.082 --> 00:08:44.981 functions decline if you will

NOTE Confidence: 0.862689946

00:08:44.981 --> 00:08:47.159 and natural killer cells go down.

NOTE Confidence: 0.862689946

00:08:47.160 --> 00:08:49.020 And as a result,

NOTE Confidence: 0.862689946

00:08:49.020 --> 00:08:51.314 perhaps you have things that are

NOTE Confidence: 0.862689946

00:08:51.314 --> 00:08:53.102 more severe like malaria that are

NOTE Confidence: 0.862689946

00:08:53.102 --> 00:08:54.887 more severe in early pregnancy.

NOTE Confidence: 0.862689946

00:08:54.890 --> 00:08:55.850 But there are other infections,

NOTE Confidence: 0.862689946

00:08:55.850 --> 00:09:00.300 especially viral infections that become,

NOTE Confidence: 0.862689946

00:09:00.300 --> 00:09:01.596 you know and they become malaria,

NOTE Confidence: 0.862689946

00:09:01.600 --> 00:09:02.900 becomes less severe at,

NOTE Confidence: 0.862689946

00:09:02.900 --> 00:09:04.525 becomes less severe as the

NOTE Confidence: 0.862689946

00:09:04.525 --> 00:09:05.500 pregnancy progresses.  
NOTE Confidence: 0.862689946

00:09:05.500 --> 00:09:08.020 But there are other infections with  
NOTE Confidence: 0.862689946

00:09:08.020 --> 00:09:10.520 severity goes up with pregnancy.  
NOTE Confidence: 0.862689946

00:09:10.520 --> 00:09:13.317 And then sort of there is increasing  
NOTE Confidence: 0.862689946

00:09:13.317 --> 00:09:15.505 evidence that with progression  
NOTE Confidence: 0.862689946

00:09:15.505 --> 00:09:18.240 of pregnancy there are certain  
NOTE Confidence: 0.862689946

00:09:18.318 --> 00:09:20.890 vaccine immunogenicity is no one.  
NOTE Confidence: 0.862689946

00:09:20.890 --> 00:09:22.390 Sometimes it's the same and  
NOTE Confidence: 0.862689946

00:09:22.390 --> 00:09:23.900 sometimes it's diminished with  
NOTE Confidence: 0.862689946

00:09:23.900 --> 00:09:25.600 the similar clinical effects.  
NOTE Confidence: 0.862689946

00:09:25.600 --> 00:09:28.012 But what we do know that in terms of  
NOTE Confidence: 0.862689946

00:09:28.012 --> 00:09:30.059 vaccine immunogenicity in pregnancy,  
NOTE Confidence: 0.862689946

00:09:30.060 --> 00:09:34.183 we can mount very good clinically meaningful  
NOTE Confidence: 0.862689946

00:09:34.183 --> 00:09:38.268 effects of these vaccines and pregnancy.  
NOTE Confidence: 0.862689946

00:09:38.270 --> 00:09:40.570 And and and therefore and  
NOTE Confidence: 0.862689946

00:09:40.570 --> 00:09:42.870 the other thing is that



NOTE Confidence: 0.790312820625

00:09:42.965 --> 00:09:46.439 through protection of moms to babies.

NOTE Confidence: 0.790312820625

00:09:46.440 --> 00:09:47.940 Through antibodies, which we enhance,

NOTE Confidence: 0.790312820625

00:09:47.940 --> 00:09:50.208 that's one major mechanism of giving

NOTE Confidence: 0.790312820625

00:09:50.208 --> 00:09:53.169 moms the vaccine so that there's a

NOTE Confidence: 0.790312820625

00:09:53.169 --> 00:09:55.005 transplacental transfer of these

NOTE Confidence: 0.790312820625

00:09:55.005 --> 00:09:58.886 antibodies that goes up not in a linear,

NOTE Confidence: 0.790312820625

00:09:58.886 --> 00:10:00.608 nice linear pressure.

NOTE Confidence: 0.790312820625

00:10:00.610 --> 00:10:02.566 A fashion, they're kind of a

NOTE Confidence: 0.790312820625

00:10:02.566 --> 00:10:04.393 sort of a substantial increase

NOTE Confidence: 0.790312820625

00:10:04.393 --> 00:10:08.010 after 2032 weeks of vaccines,

NOTE Confidence: 0.790312820625

00:10:08.010 --> 00:10:09.950 32 weeks of pregnancy.

NOTE Confidence: 0.790312820625

00:10:09.950 --> 00:10:13.846 And so therefore you know how you time if

NOTE Confidence: 0.790312820625

00:10:13.846 --> 00:10:16.316 your primary mechanism is just passive

NOTE Confidence: 0.790312820625

00:10:16.316 --> 00:10:18.008 vaccination through antibody transfer.

NOTE Confidence: 0.790312820625

00:10:18.010 --> 00:10:20.710 So you time it around you

NOTE Confidence: 0.790312820625

00:10:20.710 --> 00:10:22.510 know late second trimester,  
NOTE Confidence: 0.790312820625

00:10:22.510 --> 00:10:23.854 early 3rd trimester so that you are  
NOTE Confidence: 0.790312820625

00:10:23.854 --> 00:10:25.165 at the peak of antibody response  
NOTE Confidence: 0.790312820625

00:10:25.165 --> 00:10:26.768 and that's where you when we design  
NOTE Confidence: 0.790312820625

00:10:26.816 --> 00:10:27.921 I do maternal immunization trials  
NOTE Confidence: 0.790312820625

00:10:27.921 --> 00:10:29.814 as well if you don't know anything  
NOTE Confidence: 0.790312820625

00:10:29.814 --> 00:10:30.990 about the physiological.  
NOTE Confidence: 0.790312820625

00:10:30.990 --> 00:10:33.275 Sponsor adequacy of response you  
NOTE Confidence: 0.790312820625

00:10:33.275 --> 00:10:35.560 that's where you vaccinate most  
NOTE Confidence: 0.790312820625

00:10:35.560 --> 00:10:37.756 women in the first trials and  
NOTE Confidence: 0.790312820625

00:10:37.756 --> 00:10:39.220 then you expand recommendations.  
NOTE Confidence: 0.790312820625

00:10:39.220 --> 00:10:42.604 And so we have you know embryo is also  
NOTE Confidence: 0.790312820625

00:10:42.604 --> 00:10:44.559 developing and so initially earlier  
NOTE Confidence: 0.790312820625

00:10:44.559 --> 00:10:47.820 on if you have an impact on systems,  
NOTE Confidence: 0.790312820625

00:10:47.820 --> 00:10:50.020 sometimes there is spontaneous abortion  
NOTE Confidence: 0.790312820625

00:10:50.020 --> 00:10:52.811 that you concerned about even you know

NOTE Confidence: 0.790312820625

00:10:52.811 --> 00:10:54.973 after vaccination or as an adverse

NOTE Confidence: 0.790312820625

00:10:54.973 --> 00:10:57.619 event that we look out for us as we

NOTE Confidence: 0.790312820625

00:10:57.619 --> 00:10:59.364 are developing these vaccines later

NOTE Confidence: 0.790312820625

00:10:59.364 --> 00:11:01.330 on it's more functional etcetera.

NOTE Confidence: 0.790312820625

00:11:01.330 --> 00:11:04.018 So the fact is, the bottom line is

NOTE Confidence: 0.790312820625

00:11:04.018 --> 00:11:06.069 that pregnancy is a dynamic state.

NOTE Confidence: 0.790312820625

00:11:06.070 --> 00:11:08.146 It's a non linearly dynamic state,

NOTE Confidence: 0.790312820625

00:11:08.150 --> 00:11:10.586 and if you will in terms of

NOTE Confidence: 0.790312820625

00:11:10.590 --> 00:11:11.625 immunology of pregnancy,

NOTE Confidence: 0.790312820625

00:11:11.625 --> 00:11:13.350 you can be slightly pregnant.

NOTE Confidence: 0.912887444

00:11:16.610 --> 00:11:18.450 When it comes to vaccines,

NOTE Confidence: 0.912887444

00:11:18.450 --> 00:11:20.578 the the there have been so tetanus

NOTE Confidence: 0.912887444

00:11:20.578 --> 00:11:22.510 has been with us for a while,

NOTE Confidence: 0.912887444

00:11:22.510 --> 00:11:23.719 technus vaccination etcetera

NOTE Confidence: 0.912887444

00:11:23.719 --> 00:11:24.928 in several countries.

NOTE Confidence: 0.912887444

00:11:24.930 --> 00:11:27.978 But that modern change started with  
NOTE Confidence: 0.912887444

00:11:27.978 --> 00:11:30.134 influenza and and you know the story  
NOTE Confidence: 0.912887444

00:11:30.134 --> 00:11:32.271 starts with I had the privilege of  
NOTE Confidence: 0.912887444

00:11:32.271 --> 00:11:34.215 being part of this trial because  
NOTE Confidence: 0.912887444

00:11:34.215 --> 00:11:36.684 in the US we had been recommending  
NOTE Confidence: 0.912887444

00:11:36.684 --> 00:11:40.670 actually after the 1960s pandemic  
NOTE Confidence: 0.912887444

00:11:40.670 --> 00:11:43.070 there was a flu pandemic in early 60s.  
NOTE Confidence: 0.912887444

00:11:43.070 --> 00:11:44.775 That's when the so-called Advisory  
NOTE Confidence: 0.912887444

00:11:44.775 --> 00:11:45.798 Committee on Immunization  
NOTE Confidence: 0.912887444

00:11:45.798 --> 00:11:47.270 Practices was actually formed.  
NOTE Confidence: 0.912887444

00:11:47.270 --> 00:11:50.222 The CDC, that is the main body that that  
NOTE Confidence: 0.912887444

00:11:50.222 --> 00:11:52.830 develops recommendations for vaccinations,  
NOTE Confidence: 0.912887444

00:11:52.830 --> 00:11:55.368 and one of the initial vaccination  
NOTE Confidence: 0.912887444

00:11:55.368 --> 00:11:56.637 recommendations was vaccination  
NOTE Confidence: 0.912887444

00:11:56.637 --> 00:11:58.730 against influenza in pregnant women.  
NOTE Confidence: 0.912887444

00:11:58.730 --> 00:12:00.389 But that is that was one vaccination

NOTE Confidence: 0.912887444

00:12:00.389 --> 00:12:02.338 that was more aspirational for decades.

NOTE Confidence: 0.912887444

00:12:02.340 --> 00:12:05.262 It stuck around like 5 to 12% maximum.

NOTE Confidence: 0.912887444

00:12:05.262 --> 00:12:06.150 In a good year,

NOTE Confidence: 0.912887444

00:12:06.150 --> 00:12:07.662 it would be 15%.

NOTE Confidence: 0.912887444

00:12:07.662 --> 00:12:08.796 And that but,

NOTE Confidence: 0.912887444

00:12:08.800 --> 00:12:10.732 but there was a paradox you could

NOTE Confidence: 0.912887444

00:12:10.732 --> 00:12:12.192 because the primary indication was

NOTE Confidence: 0.912887444

00:12:12.192 --> 00:12:14.215 mothers and we could not do trials,

NOTE Confidence: 0.912887444

00:12:14.220 --> 00:12:15.390 randomized trials.

NOTE Confidence: 0.888436126

00:12:17.430 --> 00:12:19.130 Of these, because, you know,

NOTE Confidence: 0.888436126

00:12:19.130 --> 00:12:20.978 the so-called standard of care was

NOTE Confidence: 0.888436126

00:12:20.978 --> 00:12:22.576 that it was already recommended

NOTE Confidence: 0.888436126

00:12:22.576 --> 00:12:25.040 in the US and so we couldn't do

NOTE Confidence: 0.888436126

00:12:25.040 --> 00:12:26.718 randomized control trials of influenza

NOTE Confidence: 0.888436126

00:12:26.718 --> 00:12:29.032 vaccines in the US for this reason

NOTE Confidence: 0.888436126

00:12:29.032 --> 00:12:31.036 and for the reason of exploring  
NOTE Confidence: 0.888436126

00:12:31.036 --> 00:12:33.468 the impact in low income countries,  
NOTE Confidence: 0.888436126

00:12:33.470 --> 00:12:36.080 we did this trial in Bangladesh  
NOTE Confidence: 0.888436126

00:12:36.080 --> 00:12:38.965 in early 2000s caused the mother's  
NOTE Confidence: 0.888436126

00:12:38.965 --> 00:12:41.576 gift trial where we, you know,  
NOTE Confidence: 0.888436126

00:12:41.576 --> 00:12:43.347 vaccinated moms and looked at the lab,  
NOTE Confidence: 0.888436126

00:12:43.350 --> 00:12:45.408 confirmed influenza in infants and this  
NOTE Confidence: 0.888436126

00:12:45.408 --> 00:12:47.720 was the first trial to demonstrate.  
NOTE Confidence: 0.888436126

00:12:47.720 --> 00:12:49.700 But you can actually predict,  
NOTE Confidence: 0.888436126

00:12:49.700 --> 00:12:51.440 prevent lab confirm in that case  
NOTE Confidence: 0.888436126

00:12:51.440 --> 00:12:52.600 it was rapid test,  
NOTE Confidence: 0.888436126

00:12:52.600 --> 00:12:55.316 it was a relatively small trial and  
NOTE Confidence: 0.888436126

00:12:55.316 --> 00:12:58.525 showed 63% reduction in infant influenza  
NOTE Confidence: 0.888436126

00:12:58.525 --> 00:13:01.340 after maternal vaccination in pregnancy.  
NOTE Confidence: 0.888436126

00:13:01.340 --> 00:13:04.000 The first initial question was  
NOTE Confidence: 0.888436126

00:13:04.000 --> 00:13:06.731 in terms of early childhood that

NOTE Confidence: 0.888436126

00:13:06.731 --> 00:13:09.370 was it happening due to some some

NOTE Confidence: 0.888436126

00:13:09.443 --> 00:13:11.320 sort of differential breastfeeding

NOTE Confidence: 0.888436126

00:13:11.320 --> 00:13:13.720 rates in the two groups.

NOTE Confidence: 0.888436126

00:13:13.720 --> 00:13:18.172 We know that breastfeeding is very

NOTE Confidence: 0.888436126

00:13:18.172 --> 00:13:21.140 protective against respiratory outcomes,

NOTE Confidence: 0.888436126

00:13:21.140 --> 00:13:23.636 you know the ammonia etcetera and

NOTE Confidence: 0.888436126

00:13:23.636 --> 00:13:26.622 all of that stuff in in babies even

NOTE Confidence: 0.888436126

00:13:26.622 --> 00:13:28.194 though it was a randomized trial,

NOTE Confidence: 0.888436126

00:13:28.200 --> 00:13:30.040 you know we went in and we looked at it

NOTE Confidence: 0.888436126

00:13:30.096 --> 00:13:32.040 and it turned out this was in Bangladesh.

NOTE Confidence: 0.888436126

00:13:32.040 --> 00:13:36.888 So exclusive breastfeeding.

NOTE Confidence: 0.888436126

00:13:36.890 --> 00:13:38.350 Everyone was bad for breastfeeding.

NOTE Confidence: 0.888436126

00:13:38.350 --> 00:13:41.167 So we could not say yes or no breastfeeding,

NOTE Confidence: 0.888436126

00:13:41.170 --> 00:13:43.354 but we could say exclusive and

NOTE Confidence: 0.888436126

00:13:43.354 --> 00:13:44.446 non exclusive breastfeeding.

NOTE Confidence: 0.888436126

00:13:44.450 --> 00:13:46.536 And we found that secession was happening

NOTE Confidence: 0.888436126

00:13:46.536 --> 00:13:49.162 if if if anything was happening in the

NOTE Confidence: 0.888436126

00:13:49.162 --> 00:13:51.370 influenza arm a little bit earlier.

NOTE Confidence: 0.888436126

00:13:51.370 --> 00:13:52.300 And so that wasn't the case.

NOTE Confidence: 0.888436126

00:13:52.300 --> 00:13:53.480 But that didn't mean that

NOTE Confidence: 0.888436126

00:13:53.480 --> 00:13:54.424 it wasn't being modified.

NOTE Confidence: 0.888436126

00:13:54.430 --> 00:13:57.657 And actually that rabbit hole has led

NOTE Confidence: 0.888436126

00:13:57.657 --> 00:14:01.059 me into actually looking at some very

NOTE Confidence: 0.888436126

00:14:01.059 --> 00:14:03.635 novel vaccine mechanisms of early

NOTE Confidence: 0.888436126

00:14:03.635 --> 00:14:06.845 vaccination. So stay tuned I got.

NOTE Confidence: 0.888436126

00:14:06.850 --> 00:14:09.010 Sidetracked during the pandemic

NOTE Confidence: 0.888436126

00:14:09.010 --> 00:14:11.170 uh have come back,

NOTE Confidence: 0.888436126

00:14:11.170 --> 00:14:13.714 have been coming back to my sort of

NOTE Confidence: 0.888436126

00:14:13.714 --> 00:14:16.346 passion of that so earlier on based on

NOTE Confidence: 0.888436126

00:14:16.346 --> 00:14:19.995 this work and the fact that in 2009,

NOTE Confidence: 0.888436126

00:14:19.995 --> 00:14:20.520 2010.



NOTE Confidence: 0.8428462933333333  
00:14:23.140 --> 00:14:27.320 We had the H1N1 influenza  
NOTE Confidence: 0.8428462933333333  
00:14:27.320 --> 00:14:30.220 pandemic and because that trial  
NOTE Confidence: 0.8428462933333333  
00:14:30.220 --> 00:14:33.423 was out there, it was cited.  
NOTE Confidence: 0.8428462933333333  
00:14:33.423 --> 00:14:36.178 And both domestically and internationally,  
NOTE Confidence: 0.8428462933333333  
00:14:36.180 --> 00:14:38.292 pregnant women were for the first  
NOTE Confidence: 0.8428462933333333  
00:14:38.292 --> 00:14:39.700 time prioritized to protect  
NOTE Confidence: 0.8428462933333333  
00:14:39.757 --> 00:14:41.836 themselves and the babies during  
NOTE Confidence: 0.8428462933333333  
00:14:41.836 --> 00:14:45.016 that pandemic for flu vaccination.  
NOTE Confidence: 0.8428462933333333  
00:14:45.020 --> 00:14:48.812 And WHO also went and said that the  
NOTE Confidence: 0.8428462933333333  
00:14:48.812 --> 00:14:51.145 countries that are going to prioritize,  
NOTE Confidence: 0.8428462933333333  
00:14:51.145 --> 00:14:52.485 they're going to introduce.  
NOTE Confidence: 0.8428462933333333  
00:14:52.490 --> 00:14:55.598 Influenza vaccines should prioritize  
NOTE Confidence: 0.8428462933333333  
00:14:55.598 --> 00:14:57.929 maternal influenza vaccine.  
NOTE Confidence: 0.8428462933333333  
00:14:57.930 --> 00:15:00.354 But then flu is a fickle friend in  
NOTE Confidence: 0.8428462933333333  
00:15:00.354 --> 00:15:02.890 the sense that it changes every year.  
NOTE Confidence: 0.8428462933333333

00:15:02.890 --> 00:15:05.370 The vaccine effectiveness changes.  
NOTE Confidence: 0.8428462933333333

00:15:05.370 --> 00:15:06.758 And, you know,  
NOTE Confidence: 0.8428462933333333

00:15:06.758 --> 00:15:09.062 I'm more surprised by the consistency  
NOTE Confidence: 0.8428462933333333

00:15:09.062 --> 00:15:11.084 from place to place and year  
NOTE Confidence: 0.8428462933333333

00:15:11.084 --> 00:15:13.294 to year of influenza than I am  
NOTE Confidence: 0.8428462933333333

00:15:13.294 --> 00:15:15.059 by variation between the two.  
NOTE Confidence: 0.8428462933333333

00:15:15.060 --> 00:15:18.875 So, you know, a couple in Seattle.  
NOTE Confidence: 0.8428462933333333

00:15:18.880 --> 00:15:19.587 Called,  
NOTE Confidence: 0.8428462933333333

00:15:19.587 --> 00:15:23.829 Bill and Melinda Gates were increased.  
NOTE Confidence: 0.8428462933333333

00:15:23.830 --> 00:15:26.086 Increasingly intrigued by this  
NOTE Confidence: 0.8428462933333333

00:15:26.086 --> 00:15:28.906 prospect and with their team  
NOTE Confidence: 0.8428462933333333

00:15:28.906 --> 00:15:30.527 commissioned three additional  
NOTE Confidence: 0.8428462933333333

00:15:30.527 --> 00:15:33.443 trials to verify the findings from  
NOTE Confidence: 0.8428462933333333

00:15:33.443 --> 00:15:36.610 our little trial that could to see  
NOTE Confidence: 0.8428462933333333

00:15:36.610 --> 00:15:38.725 if these are consistent across  
NOTE Confidence: 0.8428462933333333

00:15:38.730 --> 00:15:40.122 geographies and and and the main

NOTE Confidence: 0.8428462933333333

00:15:40.122 --> 00:15:41.510 interest was low income countries,

NOTE Confidence: 0.8428462933333333

00:15:41.510 --> 00:15:42.480 low and middle income countries.

NOTE Confidence: 0.8428462933333333

00:15:42.480 --> 00:15:43.380 So there are three.

NOTE Confidence: 0.680946227647059

00:15:46.450 --> 00:15:50.032 Groups of three vaccines were commissioned

NOTE Confidence: 0.680946227647059

00:15:50.032 --> 00:15:53.645 and that commissioning was three trial

NOTE Confidence: 0.680946227647059

00:15:53.645 --> 00:15:56.485 vaccine Trials Commission in Mali,

NOTE Confidence: 0.680946227647059

00:15:56.490 --> 00:15:58.262 Nepal and South Africa.

NOTE Confidence: 0.680946227647059

00:15:58.262 --> 00:16:00.920 And then they sort of contacted

NOTE Confidence: 0.680946227647059

00:16:01.005 --> 00:16:03.699 me to actually pull their data

NOTE Confidence: 0.680946227647059

00:16:03.699 --> 00:16:05.284 together and say, look,

NOTE Confidence: 0.680946227647059

00:16:05.284 --> 00:16:07.930 what is the overall synthesis from this?

NOTE Confidence: 0.680946227647059

00:16:07.930 --> 00:16:09.666 So it turns out.

NOTE Confidence: 0.680946227647059

00:16:09.666 --> 00:16:11.366 Uh, it worked.

NOTE Confidence: 0.680946227647059

00:16:11.366 --> 00:16:15.164 The vaccines worked across all sides

NOTE Confidence: 0.680946227647059

00:16:15.164 --> 00:16:19.162 to prevent infant influenza and and

NOTE Confidence: 0.680946227647059

00:16:19.162 --> 00:16:22.420 which is you know which was good  
NOTE Confidence: 0.680946227647059

00:16:22.420 --> 00:16:24.756 and it wasn't surprising for us  
NOTE Confidence: 0.680946227647059

00:16:24.756 --> 00:16:27.353 that that it raised the effect sizes  
NOTE Confidence: 0.680946227647059

00:16:27.353 --> 00:16:29.130 ranged vary from place to place.  
NOTE Confidence: 0.680946227647059

00:16:29.130 --> 00:16:31.398 That's true for every you know adult  
NOTE Confidence: 0.680946227647059

00:16:31.398 --> 00:16:33.572 flu vaccine and and childhood flu  
NOTE Confidence: 0.680946227647059

00:16:33.572 --> 00:16:35.852 vaccines you know so that wasn't  
NOTE Confidence: 0.680946227647059

00:16:35.852 --> 00:16:37.724 surprising but but but we showed  
NOTE Confidence: 0.680946227647059

00:16:37.724 --> 00:16:39.621 and they showed that you know.  
NOTE Confidence: 0.680946227647059

00:16:39.621 --> 00:16:41.926 This vaccine works pretty consistently  
NOTE Confidence: 0.680946227647059

00:16:41.926 --> 00:16:43.770 to prevent sizeable proportion  
NOTE Confidence: 0.680946227647059

00:16:43.832 --> 00:16:45.867 of influenza and influenza is  
NOTE Confidence: 0.680946227647059

00:16:45.867 --> 00:16:47.088 impactful is dangerous,  
NOTE Confidence: 0.680946227647059

00:16:47.090 --> 00:16:48.425 particularly dangerous for  
NOTE Confidence: 0.680946227647059

00:16:48.425 --> 00:16:50.650 young infants and older people,  
NOTE Confidence: 0.680946227647059

00:16:50.650 --> 00:16:53.520 and these are the highest risk groups.

NOTE Confidence: 0.680946227647059  
00:16:53.520 --> 00:16:54.414 But it also,  
NOTE Confidence: 0.680946227647059  
00:16:54.414 --> 00:16:56.500 we also show that overall in in,  
NOTE Confidence: 0.680946227647059  
00:16:56.500 --> 00:16:57.541 in the Paul,  
NOTE Confidence: 0.680946227647059  
00:16:57.541 --> 00:16:58.929 the confidence intervals were  
NOTE Confidence: 0.680946227647059  
00:16:58.929 --> 00:17:00.762 crossed and all but essentially  
NOTE Confidence: 0.680946227647059  
00:17:00.762 --> 00:17:02.587 it was protecting moms themselves  
NOTE Confidence: 0.680946227647059  
00:17:02.587 --> 00:17:04.879 as well and it was pretty safe.  
NOTE Confidence: 0.680946227647059  
00:17:04.880 --> 00:17:06.860 But we also found intriguingly the  
NOTE Confidence: 0.680946227647059  
00:17:06.860 --> 00:17:09.369 beauty of pooling data from 4 sites  
NOTE Confidence: 0.680946227647059  
00:17:09.369 --> 00:17:11.249 that were designed intentionally to  
NOTE Confidence: 0.680946227647059  
00:17:11.249 --> 00:17:12.969 compare outcomes that that happens  
NOTE Confidence: 0.680946227647059  
00:17:12.969 --> 00:17:15.076 when you know all their checks are  
NOTE Confidence: 0.680946227647059  
00:17:15.080 --> 00:17:17.860 coming from the same benefactors.  
NOTE Confidence: 0.680946227647059  
00:17:17.860 --> 00:17:20.261 They can nudge trial us to sit  
NOTE Confidence: 0.680946227647059  
00:17:20.261 --> 00:17:22.246 together and align their protocols  
NOTE Confidence: 0.680946227647059

00:17:22.246 --> 00:17:24.018 rather than a company.  
NOTE Confidence: 0.680946227647059

00:17:24.020 --> 00:17:26.120 Like Pfizer and and Mark doing  
NOTE Confidence: 0.680946227647059

00:17:26.120 --> 00:17:28.456 trials you know that's they have to  
NOTE Confidence: 0.680946227647059

00:17:28.456 --> 00:17:30.888 have more of a nudging from FDA to  
NOTE Confidence: 0.680946227647059

00:17:30.888 --> 00:17:32.868 do that and that rarely happens.  
NOTE Confidence: 0.680946227647059

00:17:32.870 --> 00:17:35.495 So this was pullable and what we  
NOTE Confidence: 0.680946227647059

00:17:35.495 --> 00:17:38.421 found was that there was a reduction  
NOTE Confidence: 0.680946227647059

00:17:38.421 --> 00:17:41.001 in all cause pneumonia in babies  
NOTE Confidence: 0.680946227647059

00:17:41.010 --> 00:17:44.748 of 20% or 20 percentage points  
NOTE Confidence: 0.680946227647059

00:17:44.750 --> 00:17:46.187 that's pretty substantial.  
NOTE Confidence: 0.680946227647059

00:17:46.187 --> 00:17:49.540 So pneumonia is one of the biggest  
NOTE Confidence: 0.680946227647059

00:17:49.625 --> 00:17:52.068 killers and the way it happens is we  
NOTE Confidence: 0.680946227647059

00:17:52.068 --> 00:17:54.237 think it happens and we did other work.  
NOTE Confidence: 0.680946227647059

00:17:54.240 --> 00:17:57.248 To show that as well that it's  
NOTE Confidence: 0.680946227647059

00:17:57.248 --> 00:18:00.846 the one two punch of maternal of  
NOTE Confidence: 0.680946227647059

00:18:00.846 --> 00:18:03.938 influenza virus predisposing babies

NOTE Confidence: 0.680946227647059  
00:18:03.940 --> 00:18:07.740 for through to bacterial pneumonia.  
NOTE Confidence: 0.680946227647059  
00:18:07.740 --> 00:18:08.900 And this is what's happening.  
NOTE Confidence: 0.680946227647059  
00:18:08.900 --> 00:18:11.180 In fact,  
NOTE Confidence: 0.680946227647059  
00:18:11.180 --> 00:18:14.120 a gentleman called Tony Fauci and  
NOTE Confidence: 0.680946227647059  
00:18:14.120 --> 00:18:17.196 his colleagues went to Walter Reed  
NOTE Confidence: 0.680946227647059  
00:18:17.196 --> 00:18:20.128 and looked at specimens from 1918  
NOTE Confidence: 0.680946227647059  
00:18:20.128 --> 00:18:22.792 pandemic and actually showed that a  
NOTE Confidence: 0.680946227647059  
00:18:22.792 --> 00:18:26.420 lot of the deaths were happening from.  
NOTE Confidence: 0.680946227647059  
00:18:26.420 --> 00:18:28.036 Secondary influenza to secondary  
NOTE Confidence: 0.680946227647059  
00:18:28.036 --> 00:18:30.056 bacterial infection after the influence.  
NOTE Confidence: 0.680946227647059  
00:18:30.060 --> 00:18:31.420 It was the influenza pandemic,  
NOTE Confidence: 0.680946227647059  
00:18:31.420 --> 00:18:34.210 but it was the pneumococcus and  
NOTE Confidence: 0.680946227647059  
00:18:34.210 --> 00:18:35.996 perhaps HIV influenza diabetes  
NOTE Confidence: 0.680946227647059  
00:18:35.996 --> 00:18:38.136 that was actually killing people.  
NOTE Confidence: 0.680946227647059  
00:18:38.140 --> 00:18:41.492 So it was that one two punch I used  
NOTE Confidence: 0.680946227647059

00:18:41.492 --> 00:18:44.657 to show a slide of Muhammad Ali  
NOTE Confidence: 0.680946227647059

00:18:44.657 --> 00:18:46.552 delivering his famous 1/2 punch  
NOTE Confidence: 0.680946227647059

00:18:46.552 --> 00:18:49.015 and then someone stole that slide  
NOTE Confidence: 0.680946227647059

00:18:49.015 --> 00:18:51.920 and I have never been more annoyed.  
NOTE Confidence: 0.680946227647059

00:18:51.920 --> 00:18:55.252 So so people, you know,  
NOTE Confidence: 0.680946227647059

00:18:55.252 --> 00:18:57.236 steal someone's work fine.  
NOTE Confidence: 0.680946227647059

00:18:57.240 --> 00:18:58.684 Don't steal someone's jokes.  
NOTE Confidence: 0.680946227647059

00:18:58.684 --> 00:19:00.128 That's that's outright that's  
NOTE Confidence: 0.680946227647059

00:19:00.128 --> 00:19:02.058 cruel plagiarism, but in any case.  
NOTE Confidence: 0.680946227647059

00:19:02.058 --> 00:19:03.870 There's that one two punch that  
NOTE Confidence: 0.680946227647059

00:19:03.939 --> 00:19:06.228 were that was that the virus was  
NOTE Confidence: 0.680946227647059

00:19:06.228 --> 00:19:08.710 delivering and then you could leverage  
NOTE Confidence: 0.680946227647059

00:19:08.710 --> 00:19:10.618 that through maternal vaccination.  
NOTE Confidence: 0.680946227647059

00:19:10.620 --> 00:19:11.596 But here's the question.  
NOTE Confidence: 0.680946227647059

00:19:11.596 --> 00:19:11.840 Look,  
NOTE Confidence: 0.680946227647059

00:19:11.840 --> 00:19:13.815 this is a pretty substantial



NOTE Confidence: 0.680946227647059

00:19:13.815 --> 00:19:15.810 reducing 20% of all calls.

NOTE Confidence: 0.739849052

00:19:18.970 --> 00:19:21.930 Influenza pneumonia across three

NOTE Confidence: 0.739849052

00:19:21.930 --> 00:19:24.890 sites is pretty substantial.

NOTE Confidence: 0.739849052

00:19:24.890 --> 00:19:27.970 Is it true and if it were to be true,

NOTE Confidence: 0.739849052

00:19:27.970 --> 00:19:30.665 how could you show it and leverage

NOTE Confidence: 0.739849052

00:19:30.665 --> 00:19:31.820 this unique characteristics

NOTE Confidence: 0.739849052

00:19:31.892 --> 00:19:33.508 of influenza virus itself?

NOTE Confidence: 0.739849052

00:19:33.510 --> 00:19:35.700 Well, you leverage the seasonality of

NOTE Confidence: 0.739849052

00:19:35.700 --> 00:19:38.921 the virus and you see that if there was

NOTE Confidence: 0.739849052

00:19:38.921 --> 00:19:41.350 more virus circulating in the Community,

NOTE Confidence: 0.739849052

00:19:41.350 --> 00:19:44.732 you would have a higher effect size of

NOTE Confidence: 0.739849052

00:19:44.732 --> 00:19:47.144 this vaccine on infant influence and

NOTE Confidence: 0.739849052

00:19:47.144 --> 00:19:50.035 you would have literally or or sort

NOTE Confidence: 0.739849052

00:19:50.035 --> 00:19:52.746 of virtually no effect when there was

NOTE Confidence: 0.739849052

00:19:52.746 --> 00:19:54.634 no influenza in those communities.

NOTE Confidence: 0.739849052

00:19:54.634 --> 00:19:56.600 Where, where these trials were happening.  
NOTE Confidence: 0.739849052

00:19:56.600 --> 00:19:59.267 So yes, when there was no influenza,  
NOTE Confidence: 0.739849052

00:19:59.270 --> 00:20:02.485 there was no impact on infant pneumonia,  
NOTE Confidence: 0.739849052

00:20:02.485 --> 00:20:04.860 all cosmia of maternal vaccination.  
NOTE Confidence: 0.739849052

00:20:04.860 --> 00:20:08.156 The more virus there was in the community,  
NOTE Confidence: 0.739849052

00:20:08.160 --> 00:20:11.040 the more impactful.  
NOTE Confidence: 0.739849052

00:20:11.040 --> 00:20:13.775 Influenza vaccines were in protecting  
NOTE Confidence: 0.739849052

00:20:13.775 --> 00:20:15.740 children against influenza,  
NOTE Confidence: 0.739849052

00:20:15.740 --> 00:20:19.220 against all cause pneumonia.  
NOTE Confidence: 0.739849052

00:20:19.220 --> 00:20:21.230 So it was pretty early on.  
NOTE Confidence: 0.739849052

00:20:21.230 --> 00:20:23.180 So this is from 2012 actually.  
NOTE Confidence: 0.739849052

00:20:23.180 --> 00:20:25.580 But to show that very earlier  
NOTE Confidence: 0.739849052

00:20:25.580 --> 00:20:27.180 on these trials we,  
NOTE Confidence: 0.739849052

00:20:27.180 --> 00:20:30.404 we published our trial in Bangladesh trial in  
NOTE Confidence: 0.739849052

00:20:30.410 --> 00:20:33.637 2008 and the other trials came subsequently.  
NOTE Confidence: 0.739849052

00:20:33.640 --> 00:20:35.332 But very early on these were

NOTE Confidence: 0.739849052

00:20:35.332 --> 00:20:36.460 incorporated in global policy.

NOTE Confidence: 0.739849052

00:20:36.460 --> 00:20:40.790 But since then the lower income

NOTE Confidence: 0.739849052

00:20:40.790 --> 00:20:44.140 countries still have this barrier,

NOTE Confidence: 0.739849052

00:20:44.140 --> 00:20:49.160 they don't vaccinate against influenza.

NOTE Confidence: 0.739849052

00:20:49.160 --> 00:20:50.081 Yahoo does it.

NOTE Confidence: 0.739849052

00:20:50.081 --> 00:20:51.309 the US does it.

NOTE Confidence: 0.739849052

00:20:51.310 --> 00:20:53.067 A lot of other countries do it.

NOTE Confidence: 0.739849052

00:20:53.070 --> 00:20:54.450 So Latin America does it,

NOTE Confidence: 0.739849052

00:20:54.450 --> 00:20:58.248 but that's the next next frontier.

NOTE Confidence: 0.739849052

00:20:58.250 --> 00:21:00.950 Then there is another virus,

NOTE Confidence: 0.739849052

00:21:00.950 --> 00:21:02.874 another bacterium or another

NOTE Confidence: 0.739849052

00:21:02.874 --> 00:21:05.279 just really pathogen for tassis

NOTE Confidence: 0.739849052

00:21:05.279 --> 00:21:07.436 which causes a lot of cases.

NOTE Confidence: 0.739849052

00:21:07.440 --> 00:21:08.430 And uh.

NOTE Confidence: 0.739849052

00:21:08.430 --> 00:21:10.410 But it disproportionately impacts

NOTE Confidence: 0.739849052

00:21:10.410 --> 00:21:13.570 children too young to be vaccinated.  
NOTE Confidence: 0.739849052

00:21:13.570 --> 00:21:15.162 It has more disease,  
NOTE Confidence: 0.739849052

00:21:15.162 --> 00:21:17.152 severe disease in young infants,  
NOTE Confidence: 0.739849052

00:21:17.160 --> 00:21:19.680 and then the.  
NOTE Confidence: 0.739849052

00:21:19.680 --> 00:21:23.166 This vaccine was after a few outbreaks,  
NOTE Confidence: 0.739849052

00:21:23.170 --> 00:21:24.928 which we expect by the way,  
NOTE Confidence: 0.739849052

00:21:24.930 --> 00:21:26.975 a few more outbreaks because  
NOTE Confidence: 0.739849052

00:21:26.975 --> 00:21:29.020 routine vaccination has gone down  
NOTE Confidence: 0.739849052

00:21:29.089 --> 00:21:31.069 in the US during the pandemic.  
NOTE Confidence: 0.739849052

00:21:31.070 --> 00:21:33.278 And the two most unforgiving childhood  
NOTE Confidence: 0.739849052

00:21:33.278 --> 00:21:35.390 pathogens are measles and pertussis,  
NOTE Confidence: 0.739849052

00:21:35.390 --> 00:21:36.590 because they have,  
NOTE Confidence: 0.739849052

00:21:36.590 --> 00:21:38.590 they have the higher so-called  
NOTE Confidence: 0.739849052

00:21:38.590 --> 00:21:39.930 basic reproductive numbers,  
NOTE Confidence: 0.739849052

00:21:39.930 --> 00:21:41.840 meaning they're most more infectious  
NOTE Confidence: 0.739849052

00:21:41.840 --> 00:21:44.510 than a lot of other pathogens.

NOTE Confidence: 0.739849052

00:21:44.510 --> 00:21:46.966 And so you know, in the US after

NOTE Confidence: 0.739849052

00:21:46.966 --> 00:21:48.550 these outbreaks in California,

NOTE Confidence: 0.739849052

00:21:48.550 --> 00:21:50.008 et cetera, and folks in Texas.

NOTE Confidence: 0.739849052

00:21:50.010 --> 00:21:52.698 Saying that we can't do protect,

NOTE Confidence: 0.739849052

00:21:52.700 --> 00:21:56.020 do cocooning or you know,

NOTE Confidence: 0.739849052

00:21:56.020 --> 00:21:57.712 protect young infants through

NOTE Confidence: 0.739849052

00:21:57.712 --> 00:21:59.827 eliminating the transmission of the

NOTE Confidence: 0.739849052

00:21:59.827 --> 00:22:02.490 virus of the of the bacterium from

NOTE Confidence: 0.739849052

00:22:02.490 --> 00:22:03.942 their surrounding by vaccinating

NOTE Confidence: 0.739849052

00:22:04.007 --> 00:22:05.138 adults around them.

NOTE Confidence: 0.739849052

00:22:05.140 --> 00:22:08.241 It was return of the immunization was

NOTE Confidence: 0.739849052

00:22:08.241 --> 00:22:11.550 recommended but it was recommended without.

NOTE Confidence: 0.739849052

00:22:11.550 --> 00:22:13.878 The the evidence of from from

NOTE Confidence: 0.739849052

00:22:13.878 --> 00:22:15.430 a randomized controlled trial,

NOTE Confidence: 0.739849052

00:22:15.430 --> 00:22:18.030 so the first priority.

NOTE Confidence: 0.739849052

00:22:18.030 --> 00:22:21.480 Was to actually look at the safety of this,  
NOTE Confidence: 0.739849052

00:22:21.480 --> 00:22:27.880 and the safety of this vaccine was.  
NOTE Confidence: 0.739849052

00:22:27.880 --> 00:22:30.010 Was pretty good with the exception  
NOTE Confidence: 0.739849052

00:22:30.010 --> 00:22:31.075 of two signals.  
NOTE Confidence: 0.739849052

00:22:31.080 --> 00:22:32.832 So there was chorioamnionitis  
NOTE Confidence: 0.739849052

00:22:32.832 --> 00:22:35.460 that was higher in the vaccinated  
NOTE Confidence: 0.739849052

00:22:35.533 --> 00:22:37.757 group versus unvaccinated group.  
NOTE Confidence: 0.739849052

00:22:37.760 --> 00:22:40.225 But interestingly for task says  
NOTE Confidence: 0.739849052

00:22:40.225 --> 00:22:42.690 the preterm delivery rates were  
NOTE Confidence: 0.739849052

00:22:42.772 --> 00:22:44.260 were not different.  
NOTE Confidence: 0.739849052

00:22:44.260 --> 00:22:45.625 If anything it was lower  
NOTE Confidence: 0.739849052

00:22:45.625 --> 00:22:46.717 in the vaccinated group.  
NOTE Confidence: 0.739849052

00:22:46.720 --> 00:22:48.160 So that was reassuring.  
NOTE Confidence: 0.739849052

00:22:48.160 --> 00:22:50.758 The other thing was this was done  
NOTE Confidence: 0.739849052

00:22:50.758 --> 00:22:52.918 in large linked databases from Hmos  
NOTE Confidence: 0.739849052

00:22:52.918 --> 00:22:55.211 and when we looked at this and

NOTE Confidence: 0.739849052

00:22:55.211 --> 00:22:57.508 this was led by one of my postdocs.

NOTE Confidence: 0.739849052

00:22:57.508 --> 00:22:59.860 Was not at CDC and and I was

NOTE Confidence: 0.801256078888889

00:22:59.935 --> 00:23:02.519 engaged with it as part of you know,

NOTE Confidence: 0.801256078888889

00:23:02.520 --> 00:23:03.447 this this network.

NOTE Confidence: 0.801256078888889

00:23:03.447 --> 00:23:05.840 And when we looked at this actually no,

NOTE Confidence: 0.801256078888889

00:23:05.840 --> 00:23:07.368 this was not led by my post doc.

NOTE Confidence: 0.801256078888889

00:23:07.370 --> 00:23:08.160 That was the next study.

NOTE Confidence: 0.801256078888889

00:23:08.160 --> 00:23:09.432 It was led by a colleague

NOTE Confidence: 0.801256078888889

00:23:09.432 --> 00:23:10.550 that was involved with this.

NOTE Confidence: 0.864307449444444

00:23:12.680 --> 00:23:16.570 And what we you know what was what we found

NOTE Confidence: 0.864307449444444

00:23:16.661 --> 00:23:23.300 was that if you looked at the evidence of.

NOTE Confidence: 0.864307449444444

00:23:23.300 --> 00:23:25.724 Supporting evidence of chorioamnionitis.

NOTE Confidence: 0.864307449444444

00:23:25.724 --> 00:23:28.995 Only 50% had any even sort of

NOTE Confidence: 0.864307449444444

00:23:28.995 --> 00:23:30.228 flimsy supporting evidence.

NOTE Confidence: 0.864307449444444

00:23:30.230 --> 00:23:33.534 So what was happening was OB's were

NOTE Confidence: 0.864307449444444

00:23:33.534 --> 00:23:35.400 essentially classifying all fever  
NOTE Confidence: 0.864307449444444

00:23:35.400 --> 00:23:39.845 in 3rd trimester as core um unitus.  
NOTE Confidence: 0.864307449444444

00:23:39.850 --> 00:23:42.262 Likely, and there is evidence of  
NOTE Confidence: 0.864307449444444

00:23:42.262 --> 00:23:44.804 supporting that, likely due to  
NOTE Confidence: 0.864307449444444

00:23:44.804 --> 00:23:47.116 concerns associated with litigation.  
NOTE Confidence: 0.864307449444444

00:23:47.120 --> 00:23:48.808 And so, so that was a little bit  
NOTE Confidence: 0.864307449444444

00:23:48.808 --> 00:23:50.902 going on but the most you know  
NOTE Confidence: 0.864307449444444

00:23:50.902 --> 00:23:52.198 concerning outcome again thankfully  
NOTE Confidence: 0.864307449444444

00:23:52.198 --> 00:23:54.017 which is preterm birth of course  
NOTE Confidence: 0.864307449444444

00:23:54.017 --> 00:23:55.804 you have minus wasn't showing that.  
NOTE Confidence: 0.864307449444444

00:23:55.804 --> 00:23:58.212 The other thing was the US recommended  
NOTE Confidence: 0.864307449444444

00:23:58.212 --> 00:23:59.908 this vaccine in every pregnancy  
NOTE Confidence: 0.864307449444444

00:23:59.908 --> 00:24:02.106 and with a tetanus and it's given  
NOTE Confidence: 0.864307449444444

00:24:02.170 --> 00:24:04.350 as a combined tetanus diphtheria  
NOTE Confidence: 0.864307449444444

00:24:04.350 --> 00:24:06.094 and acellular pertussis vaccine.  
NOTE Confidence: 0.864307449444444

00:24:06.100 --> 00:24:08.338 And so therefore you know especially



NOTE Confidence: 0.864307449444444

00:24:08.340 --> 00:24:10.664 vaccine is very safe but it can

NOTE Confidence: 0.864307449444444

00:24:10.664 --> 00:24:11.660 be reacted genic,

NOTE Confidence: 0.864307449444444

00:24:11.660 --> 00:24:14.108 it can give you you know it's like mouthwash

NOTE Confidence: 0.864307449444444

00:24:14.108 --> 00:24:16.470 if it's hurting a little it's working.

NOTE Confidence: 0.864307449444444

00:24:16.470 --> 00:24:19.765 And and and it does hurt and is in

NOTE Confidence: 0.864307449444444

00:24:19.765 --> 00:24:21.545 terms of short-term reactogenicity,

NOTE Confidence: 0.864307449444444

00:24:21.550 --> 00:24:22.578 it does have that.

NOTE Confidence: 0.864307449444444

00:24:22.578 --> 00:24:24.464 And the concern was that if you

NOTE Confidence: 0.864307449444444

00:24:24.464 --> 00:24:26.186 are doing it too close together,

NOTE Confidence: 0.864307449444444

00:24:26.190 --> 00:24:28.512 a lot of women get pregnant

NOTE Confidence: 0.864307449444444

00:24:28.512 --> 00:24:29.286 pretty frequently.

NOTE Confidence: 0.864307449444444

00:24:29.290 --> 00:24:30.706 And so therefore we wanted to

NOTE Confidence: 0.864307449444444

00:24:30.706 --> 00:24:32.369 see if there was a difference.

NOTE Confidence: 0.864307449444444

00:24:32.370 --> 00:24:35.370 So compared to a greater than five years,

NOTE Confidence: 0.864307449444444

00:24:35.370 --> 00:24:37.440 if you women received this

NOTE Confidence: 0.864307449444444

00:24:37.440 --> 00:24:39.510 vaccine less than two years,  
NOTE Confidence: 0.864307449444444

00:24:39.510 --> 00:24:40.806 there was less than two year  
NOTE Confidence: 0.864307449444444

00:24:40.806 --> 00:24:42.430 gap and two to five year gap.  
NOTE Confidence: 0.864307449444444

00:24:42.430 --> 00:24:44.929 There was no difference in terms of  
NOTE Confidence: 0.864307449444444

00:24:44.929 --> 00:24:47.390 local reactions, the big ones small.  
NOTE Confidence: 0.864307449444444

00:24:47.390 --> 00:24:49.130 Gestational age and freedom.  
NOTE Confidence: 0.864307449444444

00:24:49.130 --> 00:24:50.858 That was good.  
NOTE Confidence: 0.864307449444444

00:24:50.860 --> 00:24:52.785 So then we have another vaccine that  
NOTE Confidence: 0.864307449444444

00:24:52.785 --> 00:24:55.050 is coming down the Pike, GBS vaccine.  
NOTE Confidence: 0.864307449444444

00:24:55.050 --> 00:24:58.165 So Group B Strep is a problem.  
NOTE Confidence: 0.864307449444444

00:24:58.170 --> 00:25:00.702 There are two types of groupies  
NOTE Confidence: 0.864307449444444

00:25:00.702 --> 00:25:02.960 strep which is early onset,  
NOTE Confidence: 0.864307449444444

00:25:02.960 --> 00:25:05.776 not so creatively named early and late onset,  
NOTE Confidence: 0.864307449444444

00:25:05.780 --> 00:25:07.705 but but very appropriately described  
NOTE Confidence: 0.864307449444444

00:25:07.705 --> 00:25:10.097 in the sense that early onset  
NOTE Confidence: 0.864307449444444

00:25:10.097 --> 00:25:12.077 happens before it's seven days,

NOTE Confidence: 0.864307449444444

00:25:12.080 --> 00:25:14.570 late onset happens after between

NOTE Confidence: 0.864307449444444

00:25:14.570 --> 00:25:17.580 7 to 90 days of age.

NOTE Confidence: 0.864307449444444

00:25:17.580 --> 00:25:21.234 The early onset presents without a focus.

NOTE Confidence: 0.864307449444444

00:25:21.240 --> 00:25:23.075 Access without a focus pneumonia

NOTE Confidence: 0.864307449444444

00:25:23.075 --> 00:25:24.543 meningitis in late onset.

NOTE Confidence: 0.864307449444444

00:25:24.550 --> 00:25:27.416 Meningitis is more focused,

NOTE Confidence: 0.864307449444444

00:25:27.416 --> 00:25:32.390 more frequent and the cases 30% are

NOTE Confidence: 0.864307449444444

00:25:32.390 --> 00:25:34.670 reasonable proportion have permanent

NOTE Confidence: 0.864307449444444

00:25:34.670 --> 00:25:38.781 sequelae you in the US what was

NOTE Confidence: 0.864307449444444

00:25:38.781 --> 00:25:41.676 recommended was universal screening and.

NOTE Confidence: 0.864307449444444

00:25:41.680 --> 00:25:44.408 You know antibiotic prophylaxis

NOTE Confidence: 0.864307449444444

00:25:44.408 --> 00:25:48.500 and that reduced the in pregnancy

NOTE Confidence: 0.864307449444444

00:25:48.607 --> 00:25:51.817 that reduced the rates of early

NOTE Confidence: 0.864307449444444

00:25:51.817 --> 00:25:54.365 onset Group B strep substantially,

NOTE Confidence: 0.864307449444444

00:25:54.365 --> 00:25:57.605 but the late onset disease remained the same.

NOTE Confidence: 0.864307449444444

00:25:57.610 --> 00:26:00.340 And so therefore there was this  
NOTE Confidence: 0.8643074494444444

00:26:00.340 --> 00:26:01.705 room for vaccination.  
NOTE Confidence: 0.8643074494444444

00:26:01.710 --> 00:26:03.425 But why do we worry about this?  
NOTE Confidence: 0.8643074494444444

00:26:03.430 --> 00:26:04.417 Well, it causes,  
NOTE Confidence: 0.8643074494444444

00:26:04.417 --> 00:26:06.391 if you look at invasive Group  
NOTE Confidence: 0.8643074494444444

00:26:06.391 --> 00:26:07.750 B strep disease,  
NOTE Confidence: 0.8643074494444444

00:26:07.750 --> 00:26:09.190 which is one form of disease,  
NOTE Confidence: 0.8643074494444444

00:26:09.190 --> 00:26:13.530 it causes a lot of stillbirths or  
NOTE Confidence: 0.8643074494444444

00:26:13.530 --> 00:26:15.952 spontaneous abortions and can have  
NOTE Confidence: 0.8643074494444444

00:26:15.952 --> 00:26:17.528 other adverse pregnancy outcomes.  
NOTE Confidence: 0.8643074494444444

00:26:17.530 --> 00:26:20.410 But but to to look into that in  
NOTE Confidence: 0.8643074494444444

00:26:20.410 --> 00:26:23.395 the fuller context, you have GBS,  
NOTE Confidence: 0.8643074494444444

00:26:23.395 --> 00:26:23.890 colonization,  
NOTE Confidence: 0.8643074494444444

00:26:23.890 --> 00:26:27.600 the supportive data that you know through.  
NOTE Confidence: 0.8643074494444444

00:26:27.600 --> 00:26:29.660 Intra amniotic you retract  
NOTE Confidence: 0.8643074494444444

00:26:29.660 --> 00:26:31.720 or systemic GBS infection,

NOTE Confidence: 0.864307449444444

00:26:31.720 --> 00:26:33.568 you have an association with preterm birth,

NOTE Confidence: 0.864307449444444

00:26:33.570 --> 00:26:35.930 which is the big thing that you're trying

NOTE Confidence: 0.864307449444444

00:26:35.930 --> 00:26:38.119 to prevent in terms of birth outcomes,

NOTE Confidence: 0.864307449444444

00:26:38.120 --> 00:26:39.653 adverse birth outcome.

NOTE Confidence: 0.864307449444444

00:26:39.653 --> 00:26:41.697 This preliminary data but

NOTE Confidence: 0.864307449444444

00:26:41.697 --> 00:26:43.230 increasing supporting data

NOTE Confidence: 0.745398697857143

00:26:43.299 --> 00:26:44.727 that due to systemic.

NOTE Confidence: 0.745398697857143

00:26:44.730 --> 00:26:47.020 Colonization and all due to

NOTE Confidence: 0.745398697857143

00:26:47.020 --> 00:26:50.080 systemic factors like cytokines etc.

NOTE Confidence: 0.745398697857143

00:26:50.080 --> 00:26:51.768 Even colonization may be

NOTE Confidence: 0.745398697857143

00:26:51.768 --> 00:26:53.456 associated with preterm birth.

NOTE Confidence: 0.745398697857143

00:26:53.460 --> 00:26:55.020 So there were like several vaccines

NOTE Confidence: 0.745398697857143

00:26:55.020 --> 00:26:56.800 initially it was this vaccine trial.

NOTE Confidence: 0.745398697857143

00:26:56.800 --> 00:26:58.225 And there are new vaccines

NOTE Confidence: 0.745398697857143

00:26:58.225 --> 00:26:59.980 coming in coming down the Pike.

NOTE Confidence: 0.745398697857143

00:26:59.980 --> 00:27:02.010 And we hope to see a vaccine  
NOTE Confidence: 0.745398697857143

00:27:02.010 --> 00:27:04.379 for GBS in the next few years.  
NOTE Confidence: 0.745398697857143

00:27:04.380 --> 00:27:06.696 Then there is respiratory sensational virus.  
NOTE Confidence: 0.745398697857143

00:27:06.700 --> 00:27:07.908 I couldn't have imagined  
NOTE Confidence: 0.745398697857143

00:27:07.908 --> 00:27:09.116 like before the pandemic,  
NOTE Confidence: 0.745398697857143

00:27:09.120 --> 00:27:12.074 the people would actually be talking about,  
NOTE Confidence: 0.745398697857143

00:27:12.080 --> 00:27:14.948 you know, on PBS.  
NOTE Confidence: 0.745398697857143

00:27:14.950 --> 00:27:17.295 Could be asked about RSV or like  
NOTE Confidence: 0.745398697857143

00:27:17.295 --> 00:27:19.515 people would be talking about RSV  
NOTE Confidence: 0.745398697857143

00:27:19.515 --> 00:27:21.795 which was frankly a niche virus  
NOTE Confidence: 0.745398697857143

00:27:21.800 --> 00:27:25.040 for well physicians know about it,  
NOTE Confidence: 0.745398697857143

00:27:25.040 --> 00:27:26.596 pediatricians know about it,  
NOTE Confidence: 0.745398697857143

00:27:26.596 --> 00:27:29.366 but it's not a sort of virus  
NOTE Confidence: 0.745398697857143

00:27:29.366 --> 00:27:31.837 well known but it has you know,  
NOTE Confidence: 0.745398697857143

00:27:31.840 --> 00:27:33.820 you can ask me why we had those surge etc.  
NOTE Confidence: 0.745398697857143

00:27:33.820 --> 00:27:35.737 But in any case those of us who do

NOTE Confidence: 0.745398697857143

00:27:35.737 --> 00:27:37.699 this for a living knew that RSV was

NOTE Confidence: 0.745398697857143

00:27:37.699 --> 00:27:39.725 a big problem and that's why they're

NOTE Confidence: 0.745398697857143

00:27:39.725 --> 00:27:41.887 there are vaccines in the pipeline and

NOTE Confidence: 0.745398697857143

00:27:41.887 --> 00:27:44.183 there's a lot of good news around this.

NOTE Confidence: 0.745398697857143

00:27:44.190 --> 00:27:47.654 And so it it is just RSV respiratory

NOTE Confidence: 0.745398697857143

00:27:47.654 --> 00:27:49.647 sensational virus disproportionately

NOTE Confidence: 0.745398697857143

00:27:49.647 --> 00:27:53.730 impacts infants younger than five months.

NOTE Confidence: 0.745398697857143

00:27:53.730 --> 00:27:55.455 And premature infants.

NOTE Confidence: 0.745398697857143

00:27:55.455 --> 00:27:58.765 So there are antibody products that are out

NOTE Confidence: 0.745398697857143

00:27:58.765 --> 00:28:00.350 there for especially premature infants,

NOTE Confidence: 0.745398697857143

00:28:00.350 --> 00:28:02.810 but it's not a viable strategy

NOTE Confidence: 0.745398697857143

00:28:02.810 --> 00:28:05.000 at the mass population level.

NOTE Confidence: 0.745398697857143

00:28:05.000 --> 00:28:05.999 And you know,

NOTE Confidence: 0.745398697857143

00:28:05.999 --> 00:28:07.331 early estimates showed that

NOTE Confidence: 0.745398697857143

00:28:07.331 --> 00:28:08.800 in the neonatal period,

NOTE Confidence: 0.745398697857143

00:28:08.800 --> 00:28:10.900 RSP was associated with a little  
NOTE Confidence: 0.745398697857143

00:28:10.900 --> 00:28:14.048 over 2% of all cause mortality  
NOTE Confidence: 0.745398697857143

00:28:14.048 --> 00:28:17.018 and 7% of all cause mortality in  
NOTE Confidence: 0.745398697857143

00:28:17.018 --> 00:28:19.989 the post unit or infancy period.  
NOTE Confidence: 0.745398697857143

00:28:19.990 --> 00:28:22.738 That's pretty that's a lot of debts but  
NOTE Confidence: 0.745398697857143

00:28:22.738 --> 00:28:24.962 by a single pathogen and This is why  
NOTE Confidence: 0.745398697857143

00:28:24.962 --> 00:28:27.838 it is an attractive target for prevention.  
NOTE Confidence: 0.745398697857143

00:28:27.840 --> 00:28:29.401 We did some work in Australia that  
NOTE Confidence: 0.745398697857143

00:28:29.401 --> 00:28:30.910 showed that some of this infection,  
NOTE Confidence: 0.745398697857143

00:28:30.910 --> 00:28:32.098 early infection can,  
NOTE Confidence: 0.745398697857143

00:28:32.098 --> 00:28:33.682 is pretty convincingly associated  
NOTE Confidence: 0.745398697857143

00:28:33.682 --> 00:28:35.439 with later development of asthma.  
NOTE Confidence: 0.745398697857143

00:28:35.440 --> 00:28:35.670 Uh,  
NOTE Confidence: 0.745398697857143

00:28:35.670 --> 00:28:36.130 et cetera.  
NOTE Confidence: 0.745398697857143

00:28:36.130 --> 00:28:38.451 And so a whole host of work points to  
NOTE Confidence: 0.745398697857143

00:28:38.451 --> 00:28:40.747 this pathogen being actually a pretty bad



NOTE Confidence: 0.745398697857143  
00:28:40.747 --> 00:28:42.736 pathogen that we should try to prevent.  
NOTE Confidence: 0.745398697857143  
00:28:42.740 --> 00:28:44.000 These numbers have sort of.  
NOTE Confidence: 0.745398697857143  
00:28:44.000 --> 00:28:46.295 I've been part of a lot of studies that  
NOTE Confidence: 0.745398697857143  
00:28:46.295 --> 00:28:48.356 have added nuance to these numbers.  
NOTE Confidence: 0.745398697857143  
00:28:48.360 --> 00:28:49.986 So the numbers are more variable.  
NOTE Confidence: 0.745398697857143  
00:28:49.990 --> 00:28:52.396 They vary from region to region.  
NOTE Confidence: 0.745398697857143  
00:28:52.400 --> 00:28:53.117 But the answer,  
NOTE Confidence: 0.745398697857143  
00:28:53.117 --> 00:28:55.380 the bottom line of all the burden assessment,  
NOTE Confidence: 0.745398697857143  
00:28:55.380 --> 00:28:57.390 especially from low income countries,  
NOTE Confidence: 0.745398697857143  
00:28:57.390 --> 00:28:58.982 including low income countries,  
NOTE Confidence: 0.745398697857143  
00:28:58.982 --> 00:29:02.140 is that this pathogen is worth preventing.  
NOTE Confidence: 0.893116164285714  
00:29:04.350 --> 00:29:06.646 And so there is this robust pipeline.  
NOTE Confidence: 0.893116164285714  
00:29:06.650 --> 00:29:09.206 This has been updated very recently.  
NOTE Confidence: 0.893116164285714  
00:29:09.210 --> 00:29:12.048 There was this vaccine by Novavax,  
NOTE Confidence: 0.893116164285714  
00:29:12.050 --> 00:29:15.658 which again to my surprise became a Moderna  
NOTE Confidence: 0.893116164285714

00:29:15.658 --> 00:29:19.279 and Novavax used to be very niche companies.

NOTE Confidence: 0.893116164285714

00:29:19.280 --> 00:29:23.065 Without a lot of public recognition of them.

NOTE Confidence: 0.893116164285714

00:29:23.065 --> 00:29:25.666 Novavax had a product now Pfizer's

NOTE Confidence: 0.893116164285714

00:29:25.666 --> 00:29:27.170 product had moved forward.

NOTE Confidence: 0.893116164285714

00:29:27.170 --> 00:29:30.810 And then GSK, you know, Santa Fe.

NOTE Confidence: 0.893116164285714

00:29:30.810 --> 00:29:32.550 The product is also moving forward,

NOTE Confidence: 0.893116164285714

00:29:32.550 --> 00:29:36.421 but essentially after the initial work

NOTE Confidence: 0.893116164285714

00:29:36.421 --> 00:29:38.826 by Novavax Gates Foundation invested

NOTE Confidence: 0.893116164285714

00:29:38.826 --> 00:29:41.943 heavily in this vaccine and I'll tell

NOTE Confidence: 0.893116164285714

00:29:41.943 --> 00:29:44.533 you a nuanced story of this vaccine.

NOTE Confidence: 0.893116164285714

00:29:44.540 --> 00:29:46.800 That Novavax vaccine was done,

NOTE Confidence: 0.893116164285714

00:29:46.800 --> 00:29:49.685 it was a nanoparticle vaccine

NOTE Confidence: 0.893116164285714

00:29:49.685 --> 00:29:51.993 of a post fusion.

NOTE Confidence: 0.893116164285714

00:29:52.000 --> 00:29:53.056 I wouldn't get into the detail,

NOTE Confidence: 0.893116164285714

00:29:53.060 --> 00:29:55.514 but essentially there's a pre fusion

NOTE Confidence: 0.893116164285714

00:29:55.514 --> 00:29:58.320 molecule and a post fusion molecule

NOTE Confidence: 0.893116164285714

00:29:58.320 --> 00:30:01.344 post fusion is like in lab studies.

NOTE Confidence: 0.893116164285714

00:30:01.350 --> 00:30:03.534 Was shown to be likely more effective,

NOTE Confidence: 0.893116164285714

00:30:03.540 --> 00:30:05.997 but these guys had a pre fusion

NOTE Confidence: 0.893116164285714

00:30:05.997 --> 00:30:08.382 product and they recruited from all

NOTE Confidence: 0.893116164285714

00:30:08.382 --> 00:30:11.301 sorts of sites but essentially half of

NOTE Confidence: 0.893116164285714

00:30:11.382 --> 00:30:14.016 the subjects came from South Africa.

NOTE Confidence: 0.893116164285714

00:30:14.020 --> 00:30:16.620 For various reasons they overshot

NOTE Confidence: 0.893116164285714

00:30:16.620 --> 00:30:19.220 their optimism of the initial

NOTE Confidence: 0.893116164285714

00:30:19.310 --> 00:30:21.790 sample size was pretty decent,

NOTE Confidence: 0.893116164285714

00:30:21.790 --> 00:30:24.254 but then due to commercial reasons they

NOTE Confidence: 0.893116164285714

00:30:24.254 --> 00:30:26.973 had an early unplanned look and when you

NOTE Confidence: 0.893116164285714

00:30:26.973 --> 00:30:29.789 look at your data a little bit early.

NOTE Confidence: 0.893116164285714

00:30:29.790 --> 00:30:32.390 Regulatory entities add a penalty,

NOTE Confidence: 0.893116164285714

00:30:32.390 --> 00:30:34.430 you have a higher bar burden,

NOTE Confidence: 0.893116164285714

00:30:34.430 --> 00:30:35.290 statistical burden.

NOTE Confidence: 0.893116164285714

00:30:35.290 --> 00:30:37.010 So your P value,  
NOTE Confidence: 0.893116164285714

00:30:37.010 --> 00:30:38.962 the target alpha changes,  
NOTE Confidence: 0.893116164285714

00:30:38.962 --> 00:30:40.426 that's what happened.  
NOTE Confidence: 0.893116164285714

00:30:40.430 --> 00:30:43.685 And then they became a little bit  
NOTE Confidence: 0.893116164285714

00:30:43.690 --> 00:30:46.630 over optimistic based on the early  
NOTE Confidence: 0.893116164285714

00:30:46.630 --> 00:30:49.730 data and they stopped the trial at  
NOTE Confidence: 0.893116164285714

00:30:49.730 --> 00:30:54.770 based on the events in a pretty lower,  
NOTE Confidence: 0.893116164285714

00:30:54.770 --> 00:30:57.465 almost half that initial target sample size.  
NOTE Confidence: 0.893116164285714

00:30:57.470 --> 00:30:58.502 Here's what So what?  
NOTE Confidence: 0.893116164285714

00:30:58.502 --> 00:31:00.469 What they did was they did safety  
NOTE Confidence: 0.893116164285714

00:31:00.469 --> 00:31:01.917 assessment for six months,  
NOTE Confidence: 0.893116164285714

00:31:01.920 --> 00:31:04.195 safety assessments for mom for six months,  
NOTE Confidence: 0.893116164285714

00:31:04.200 --> 00:31:05.352 infants for one year,  
NOTE Confidence: 0.893116164285714

00:31:05.352 --> 00:31:06.504 efficacy of three months,  
NOTE Confidence: 0.893116164285714

00:31:06.510 --> 00:31:07.094 four months,  
NOTE Confidence: 0.893116164285714

00:31:07.094 --> 00:31:09.138 five months and six years and then

NOTE Confidence: 0.893116164285714

00:31:09.138 --> 00:31:11.056 they were randomized to have two is

NOTE Confidence: 0.893116164285714

00:31:11.056 --> 00:31:12.896 to one more vaccine than placebo.

NOTE Confidence: 0.893116164285714

00:31:12.896 --> 00:31:15.373 You know when you have more confidence

NOTE Confidence: 0.893116164285714

00:31:15.373 --> 00:31:18.028 sometimes you give more vaccines et cetera.

NOTE Confidence: 0.893116164285714

00:31:18.028 --> 00:31:19.900 You know up up to one is  $2/3$ ,

NOTE Confidence: 0.893116164285714

00:31:19.900 --> 00:31:22.324 you get pretty good statistical efficiency

NOTE Confidence: 0.893116164285714

00:31:22.324 --> 00:31:25.500 very close to one is to 1 randomization.

NOTE Confidence: 0.893116164285714

00:31:25.500 --> 00:31:26.532 So that's done pretty

NOTE Confidence: 0.893116164285714

00:31:26.532 --> 00:31:27.564 frequently in vaccine trials.

NOTE Confidence: 0.818179771428571

00:31:29.720 --> 00:31:32.100 Efficacy is defined as in their case,

NOTE Confidence: 0.818179771428571

00:31:32.100 --> 00:31:35.850 prevention of infant lab confirmed.

NOTE Confidence: 0.818179771428571

00:31:35.850 --> 00:31:38.865 Outcomes of RSV and these are I'll show you

NOTE Confidence: 0.818179771428571

00:31:38.865 --> 00:31:42.038 go through the primary outcomes etcetera.

NOTE Confidence: 0.818179771428571

00:31:42.040 --> 00:31:44.545 This is medically significant RSV

NOTE Confidence: 0.818179771428571

00:31:44.545 --> 00:31:46.549 lower respiratory tract infection.

NOTE Confidence: 0.818179771428571

00:31:46.550 --> 00:31:48.250 So they had specifically criteria  
NOTE Confidence: 0.818179771428571

00:31:48.250 --> 00:31:50.510 and this was the main outcome.  
NOTE Confidence: 0.818179771428571

00:31:50.510 --> 00:31:52.050 This is the primary endpoint.  
NOTE Confidence: 0.818179771428571

00:31:52.050 --> 00:31:54.540 Look what happened.  
NOTE Confidence: 0.818179771428571

00:31:54.540 --> 00:31:55.916 It caused the null.  
NOTE Confidence: 0.818179771428571

00:31:55.916 --> 00:31:57.980 And at the age of remember,  
NOTE Confidence: 0.818179771428571

00:31:57.980 --> 00:31:59.500 these are not uniform distributions,  
NOTE Confidence: 0.818179771428571

00:31:59.500 --> 00:32:01.200 so the tails are narrower,  
NOTE Confidence: 0.818179771428571

00:32:01.200 --> 00:32:05.519 so it barely failed their primary endpoint,  
NOTE Confidence: 0.818179771428571

00:32:05.520 --> 00:32:07.380 but on the other hand,  
NOTE Confidence: 0.818179771428571

00:32:07.380 --> 00:32:11.136 for most of the other stuff.  
NOTE Confidence: 0.818179771428571

00:32:11.140 --> 00:32:13.666 You know, on the overall analysis,  
NOTE Confidence: 0.818179771428571

00:32:13.670 --> 00:32:17.258 primary endpoint with extended data set,  
NOTE Confidence: 0.818179771428571

00:32:17.260 --> 00:32:19.756 which was pretty justifiable,  
NOTE Confidence: 0.818179771428571

00:32:19.756 --> 00:32:22.240 the vaccine performed reasonably well.  
NOTE Confidence: 0.818179771428571

00:32:22.240 --> 00:32:24.070 I don't work with any vaccine

NOTE Confidence: 0.818179771428571  
00:32:24.070 --> 00:32:25.895 companies in the sense that I don't  
NOTE Confidence: 0.818179771428571  
00:32:25.895 --> 00:32:27.530 get paid with them for by them,  
NOTE Confidence: 0.818179771428571  
00:32:27.530 --> 00:32:28.156 including Novavax.  
NOTE Confidence: 0.818179771428571  
00:32:28.156 --> 00:32:31.452 I pay for my own meals if I show up  
NOTE Confidence: 0.818179771428571  
00:32:31.452 --> 00:32:33.600 at any of the scientific meetings.  
NOTE Confidence: 0.818179771428571  
00:32:33.600 --> 00:32:35.126 And the reason is not that there's  
NOTE Confidence: 0.818179771428571  
00:32:35.126 --> 00:32:36.386 nothing wrong with working with  
NOTE Confidence: 0.818179771428571  
00:32:36.386 --> 00:32:37.786 vaccines companies because I work  
NOTE Confidence: 0.818179771428571  
00:32:37.786 --> 00:32:39.000 on vaccine acceptance as well.  
NOTE Confidence: 0.818179771428571  
00:32:39.000 --> 00:32:41.051 That's I get to yell a little  
NOTE Confidence: 0.818179771428571  
00:32:41.051 --> 00:32:42.470 harder at some people.  
NOTE Confidence: 0.818179771428571  
00:32:42.470 --> 00:32:44.588 If, if I don't do that,  
NOTE Confidence: 0.818179771428571  
00:32:44.590 --> 00:32:45.810 but so with you know,  
NOTE Confidence: 0.818179771428571  
00:32:45.810 --> 00:32:47.352 disclosing that sort of kind of  
NOTE Confidence: 0.818179771428571  
00:32:47.352 --> 00:32:48.890 lack of conflict of interest,  
NOTE Confidence: 0.818179771428571

00:32:48.890 --> 00:32:50.227 I have no personal interest in this.  
NOTE Confidence: 0.818179771428571

00:32:50.230 --> 00:32:51.502 But this vaccine works.  
NOTE Confidence: 0.818179771428571

00:32:51.502 --> 00:32:53.863 It doesn't work if you just stratify  
NOTE Confidence: 0.818179771428571

00:32:53.863 --> 00:32:56.185 because most of the recruitment came  
NOTE Confidence: 0.818179771428571

00:32:56.185 --> 00:32:58.345 from outside the US so obviously  
NOTE Confidence: 0.818179771428571

00:32:58.345 --> 00:33:00.529 us only won't work and that wasn't  
NOTE Confidence: 0.818179771428571

00:33:00.530 --> 00:33:02.150 the primary endpoint as well,  
NOTE Confidence: 0.818179771428571

00:33:02.150 --> 00:33:04.985 but South Africa where most half of  
NOTE Confidence: 0.818179771428571

00:33:04.985 --> 00:33:07.103 the subjects came. So it failed.  
NOTE Confidence: 0.818179771428571

00:33:07.103 --> 00:33:09.210 And Dan Weinberger at the School of  
NOTE Confidence: 0.818179771428571

00:33:09.272 --> 00:33:11.288 Public Health and I and a couple  
NOTE Confidence: 0.818179771428571

00:33:11.288 --> 00:33:13.019 of others have been pushing.  
NOTE Confidence: 0.818179771428571

00:33:13.020 --> 00:33:16.430 4 actually.  
NOTE Confidence: 0.818179771428571

00:33:16.430 --> 00:33:19.209 Doing what we call a Bayesian trial,  
NOTE Confidence: 0.818179771428571

00:33:19.210 --> 00:33:23.450 take the the data from the previous trial.  
NOTE Confidence: 0.818179771428571

00:33:23.450 --> 00:33:26.005 Add the next a few more subjects



NOTE Confidence: 0.818179771428571  
00:33:26.005 --> 00:33:28.461 and then add a statistical penalty  
NOTE Confidence: 0.818179771428571  
00:33:28.461 --> 00:33:31.618 of doing it in two stages and  
NOTE Confidence: 0.818179771428571  
00:33:31.618 --> 00:33:34.658 then get gets the licensure.  
NOTE Confidence: 0.818179771428571  
00:33:34.660 --> 00:33:36.436 The company wasn't interested.  
NOTE Confidence: 0.818179771428571  
00:33:36.436 --> 00:33:38.656 Gates pulled their support because  
NOTE Confidence: 0.818179771428571  
00:33:38.656 --> 00:33:41.317 they were enamored by the next product.  
NOTE Confidence: 0.818179771428571  
00:33:41.320 --> 00:33:45.320 But are we so Nice is to think that you know,  
NOTE Confidence: 0.818179771428571  
00:33:45.320 --> 00:33:47.994 one magic product will be accessible to  
NOTE Confidence: 0.818179771428571  
00:33:47.994 --> 00:33:51.020 to the places where it's most required,  
NOTE Confidence: 0.818179771428571  
00:33:51.020 --> 00:33:53.114 despite all sorts of assurances and  
NOTE Confidence: 0.818179771428571  
00:33:53.114 --> 00:33:55.200 and press conferences and agreements?  
NOTE Confidence: 0.818179771428571  
00:33:55.200 --> 00:33:57.289 Now this,  
NOTE Confidence: 0.818179771428571  
00:33:57.289 --> 00:34:01.150 you know and and if you have any doubts  
NOTE Confidence: 0.818179771428571  
00:34:01.246 --> 00:34:04.270 about that you know Pfizer with with its.  
NOTE Confidence: 0.818179771428571  
00:34:04.270 --> 00:34:05.150 \$100 billion,  
NOTE Confidence: 0.818179771428571

00:34:05.150 --> 00:34:06.910 that's a, you know,  
NOTE Confidence: 0.818179771428571

00:34:06.910 --> 00:34:12.294 billion with a B windfall and lack of.  
NOTE Confidence: 0.818179771428571

00:34:12.300 --> 00:34:14.971 Access to M RNA vaccines throughout 2021.  
NOTE Confidence: 0.818179771428571

00:34:14.971 --> 00:34:17.699 Now when the horse has left the barn,  
NOTE Confidence: 0.818179771428571

00:34:17.700 --> 00:34:20.880 as in the neighboring barn,  
NOTE Confidence: 0.818179771428571

00:34:20.880 --> 00:34:22.592 munching on some hay,  
NOTE Confidence: 0.818179771428571

00:34:22.592 --> 00:34:25.160 now all the vaccine is available,  
NOTE Confidence: 0.818179771428571

00:34:25.160 --> 00:34:25.770 et cetera.  
NOTE Confidence: 0.818179771428571

00:34:25.770 --> 00:34:26.075 So.  
NOTE Confidence: 0.818179771428571

00:34:26.075 --> 00:34:28.604 So the point I'm trying to make it  
NOTE Confidence: 0.818179771428571

00:34:28.604 --> 00:34:30.872 is that it was a perfectly decent  
NOTE Confidence: 0.818179771428571

00:34:30.872 --> 00:34:33.426 vaccine and they had much more stable  
NOTE Confidence: 0.818179771428571

00:34:33.426 --> 00:34:35.879 agreements because they were a new company.  
NOTE Confidence: 0.818179771428571

00:34:35.880 --> 00:34:38.088 Gates and other key players had  
NOTE Confidence: 0.818179771428571

00:34:38.088 --> 00:34:40.537 much more say in global access  
NOTE Confidence: 0.818179771428571

00:34:40.537 --> 00:34:43.237 and there was a lost opportunity.

NOTE Confidence: 0.818179771428571  
00:34:43.240 --> 00:34:44.640 Even if the best case scenario is so  
NOTE Confidence: 0.818179771428571  
00:34:44.640 --> 00:34:46.067 there's a new vaccine that has shown.  
NOTE Confidence: 0.784098731428571  
00:34:46.070 --> 00:34:48.198 I'm not showing the data in the interest  
NOTE Confidence: 0.784098731428571  
00:34:48.198 --> 00:34:50.262 of time that has shown that maternal  
NOTE Confidence: 0.784098731428571  
00:34:50.262 --> 00:34:52.826 you know the new vaccine works but major  
NOTE Confidence: 0.784098731428571  
00:34:52.826 --> 00:34:54.716 pharmaceutical companies it's it's a  
NOTE Confidence: 0.784098731428571  
00:34:54.716 --> 00:34:57.230 risky bet for global access it will  
NOTE Confidence: 0.784098731428571  
00:34:57.230 --> 00:34:59.827 come our kids etcetera and the US will  
NOTE Confidence: 0.784098731428571  
00:34:59.827 --> 00:35:02.091 be protected for and and and moms and  
NOTE Confidence: 0.784098731428571  
00:35:02.100 --> 00:35:05.268 young kids will be protected starting  
NOTE Confidence: 0.784098731428571  
00:35:05.268 --> 00:35:08.176 ideally you know next year or so.  
NOTE Confidence: 0.784098731428571  
00:35:08.180 --> 00:35:11.558 So then COVID-19.  
NOTE Confidence: 0.784098731428571  
00:35:11.560 --> 00:35:13.520 So I had the privilege.  
NOTE Confidence: 0.784098731428571  
00:35:13.520 --> 00:35:15.216 I've done a few things around the pandemic,  
NOTE Confidence: 0.784098731428571  
00:35:15.220 --> 00:35:16.132 but including vaccines,  
NOTE Confidence: 0.784098731428571

00:35:16.132 --> 00:35:18.520 and I had the privilege of being part  
NOTE Confidence: 0.784098731428571

00:35:18.520 --> 00:35:20.465 of The Who COVID-19 vaccine group and  
NOTE Confidence: 0.784098731428571

00:35:20.465 --> 00:35:22.860 also the National Academy of Medicine Group.  
NOTE Confidence: 0.784098731428571

00:35:22.860 --> 00:35:24.908 That said, who gets it for a second?  
NOTE Confidence: 0.784098731428571

00:35:24.910 --> 00:35:28.949 That's that that described that overall plan.  
NOTE Confidence: 0.784098731428571

00:35:28.950 --> 00:35:30.231 Now, in retrospect,  
NOTE Confidence: 0.784098731428571

00:35:30.231 --> 00:35:31.939 there's consensus that elderly,  
NOTE Confidence: 0.784098731428571

00:35:31.940 --> 00:35:34.118 the elderly should, should get it.  
NOTE Confidence: 0.784098731428571

00:35:34.120 --> 00:35:35.136 But when we were,  
NOTE Confidence: 0.784098731428571

00:35:35.136 --> 00:35:37.788 when the sausage was being made, Oh my God,  
NOTE Confidence: 0.784098731428571

00:35:37.788 --> 00:35:40.738 like, we got thousands of comments.  
NOTE Confidence: 0.784098731428571

00:35:40.738 --> 00:35:43.768 We're impassioned pleas of prioritizing  
NOTE Confidence: 0.784098731428571

00:35:43.768 --> 00:35:47.520 one group versus another, et cetera.  
NOTE Confidence: 0.784098731428571

00:35:47.520 --> 00:35:51.090 And so, and pregnant women were  
NOTE Confidence: 0.784098731428571

00:35:51.090 --> 00:35:52.806 included in those things.  
NOTE Confidence: 0.784098731428571

00:35:52.806 --> 00:35:53.550 But remember,

NOTE Confidence: 0.784098731428571

00:35:53.550 --> 00:35:54.470 we didn't have data.

NOTE Confidence: 0.784098731428571

00:35:54.470 --> 00:35:56.538 And so, despite years of pushing

NOTE Confidence: 0.784098731428571

00:35:56.538 --> 00:35:58.548 that in public health emergencies,

NOTE Confidence: 0.784098731428571

00:35:58.550 --> 00:36:01.892 myself and my colleague Ruth Faden

NOTE Confidence: 0.784098731428571

00:36:01.892 --> 00:36:03.563 at Johns Hopkins,

NOTE Confidence: 0.784098731428571

00:36:03.570 --> 00:36:06.960 who who founded their bioethics institute.

NOTE Confidence: 0.784098731428571

00:36:06.960 --> 00:36:09.648 Have been and others have been

NOTE Confidence: 0.784098731428571

00:36:09.648 --> 00:36:11.688 pushing for early trials in

NOTE Confidence: 0.784098731428571

00:36:11.688 --> 00:36:13.673 pregnant women during public health

NOTE Confidence: 0.784098731428571

00:36:13.673 --> 00:36:15.378 emergencies because we know that,

NOTE Confidence: 0.784098731428571

00:36:15.380 --> 00:36:16.150 you know,

NOTE Confidence: 0.784098731428571

00:36:16.150 --> 00:36:19.072 that's where the questions will come within.

NOTE Confidence: 0.784098731428571

00:36:19.072 --> 00:36:21.520 Hours of the announcement,

NOTE Confidence: 0.784098731428571

00:36:21.520 --> 00:36:24.096 so I would get the announcement on the

NOTE Confidence: 0.784098731428571

00:36:24.096 --> 00:36:26.379 Sunday afternoon because of the the cadence,

NOTE Confidence: 0.784098731428571

00:36:26.380 --> 00:36:28.528 because of regulatory requirements,  
NOTE Confidence: 0.784098731428571

00:36:28.528 --> 00:36:31.213 they would release their results  
NOTE Confidence: 0.784098731428571

00:36:31.213 --> 00:36:33.120 on a Monday morning.  
NOTE Confidence: 0.784098731428571

00:36:33.120 --> 00:36:35.320 So that because if it goes out early  
NOTE Confidence: 0.784098731428571

00:36:35.320 --> 00:36:37.659 it can move the markets et cetera.  
NOTE Confidence: 0.784098731428571

00:36:37.660 --> 00:36:41.578 So I would get an embargoed.  
NOTE Confidence: 0.784098731428571

00:36:41.580 --> 00:36:44.667 Sort of results usually on a a  
NOTE Confidence: 0.784098731428571

00:36:44.667 --> 00:36:48.669 call from a reporter on a on a on  
NOTE Confidence: 0.784098731428571

00:36:48.669 --> 00:36:51.087 a Sunday afternoon for as these  
NOTE Confidence: 0.784098731428571

00:36:51.087 --> 00:36:54.369 results were coming in saying I have  
NOTE Confidence: 0.784098731428571

00:36:54.369 --> 00:36:56.058 something that I will share with you.  
NOTE Confidence: 0.784098731428571

00:36:56.060 --> 00:36:57.740 I cannot tell you what it is but  
NOTE Confidence: 0.784098731428571

00:36:57.740 --> 00:36:59.159 are you available between this  
NOTE Confidence: 0.784098731428571

00:36:59.159 --> 00:37:00.419 hour and this hour?  
NOTE Confidence: 0.784098731428571

00:37:00.420 --> 00:37:03.216 I'll send it to you 1520 minutes  
NOTE Confidence: 0.784098731428571

00:37:03.216 --> 00:37:05.840 before I call you on a Sunday evening.

NOTE Confidence: 0.784098731428571

00:37:05.840 --> 00:37:07.992 We're was like it was like we get

NOTE Confidence: 0.784098731428571

00:37:07.992 --> 00:37:10.240 embargoed stuff all the time but this

NOTE Confidence: 0.784098731428571

00:37:10.240 --> 00:37:11.560 was strictly strictly embargoed.

NOTE Confidence: 0.784098731428571

00:37:11.560 --> 00:37:14.568 For for understandable reasons.

NOTE Confidence: 0.784098731428571

00:37:14.570 --> 00:37:16.940 And so.

NOTE Confidence: 0.784098731428571

00:37:16.940 --> 00:37:19.796 So, so as soon as I remember,

NOTE Confidence: 0.784098731428571

00:37:19.800 --> 00:37:24.637 the first vaccine comes out the 1st.

NOTE Confidence: 0.784098731428571

00:37:24.640 --> 00:37:28.046 Of, you know, an announcement comes out,

NOTE Confidence: 0.784098731428571

00:37:28.050 --> 00:37:29.230 it works.

NOTE Confidence: 0.784098731428571

00:37:29.230 --> 00:37:31.590 Within hours of that,

NOTE Confidence: 0.784098731428571

00:37:31.590 --> 00:37:34.134 I get a start getting emails on the

NOTE Confidence: 0.784098731428571

00:37:34.134 --> 00:37:36.863 first one from a pretty senior Yale

NOTE Confidence: 0.784098731428571

00:37:36.863 --> 00:37:38.878 colleague saying my daughter is

NOTE Confidence: 0.784098731428571

00:37:38.957 --> 00:37:41.056 also a physician and she's pregnant.

NOTE Confidence: 0.784098731428571

00:37:41.056 --> 00:37:43.310 What do you think about the safety

NOTE Confidence: 0.784098731428571

00:37:43.378 --> 00:37:45.406 of this vaccine in pregnant women?  
NOTE Confidence: 0.784098731428571

00:37:45.410 --> 00:37:45.754 Remember,  
NOTE Confidence: 0.784098731428571

00:37:45.754 --> 00:37:47.474 no pregnant women were included  
NOTE Confidence: 0.784098731428571

00:37:47.474 --> 00:37:48.506 in these trials.  
NOTE Confidence: 0.784098731428571

00:37:48.510 --> 00:37:50.334 And this was after years of  
NOTE Confidence: 0.784098731428571

00:37:50.334 --> 00:37:51.570 advocacy saying that, look,  
NOTE Confidence: 0.784098731428571

00:37:51.570 --> 00:37:54.130 and I'll talk about the ethics of it,  
NOTE Confidence: 0.784098731428571

00:37:54.130 --> 00:37:54.778 that look,  
NOTE Confidence: 0.784098731428571

00:37:54.778 --> 00:37:56.722 you can't do that because otherwise  
NOTE Confidence: 0.784098731428571

00:37:56.722 --> 00:37:59.936 you're putting them by, you know,  
NOTE Confidence: 0.784098731428571

00:37:59.936 --> 00:38:00.979 avoiding.  
NOTE Confidence: 0.784098731428571

00:38:00.980 --> 00:38:03.290 Including them in in in primary trials,  
NOTE Confidence: 0.784098731428571

00:38:03.290 --> 00:38:04.975 you're putting them at risk  
NOTE Confidence: 0.784098731428571

00:38:04.975 --> 00:38:06.660 by giving they will get  
NOTE Confidence: 0.782594010909091

00:38:06.731 --> 00:38:08.120 it, they'll have to get it  
NOTE Confidence: 0.782594010909091

00:38:08.120 --> 00:38:09.310 especially the high risk months.



NOTE Confidence: 0.782594010909091

00:38:09.310 --> 00:38:11.884 And so therefore you know that was a concern.

NOTE Confidence: 0.782594010909091

00:38:11.890 --> 00:38:13.570 So very briefly I don't have

NOTE Confidence: 0.782594010909091

00:38:13.570 --> 00:38:15.569 the time to show all the data,

NOTE Confidence: 0.782594010909091

00:38:15.570 --> 00:38:18.515 but essentially very early on

NOTE Confidence: 0.782594010909091

00:38:18.515 --> 00:38:22.110 we knew that ICU admission. Was.

NOTE Confidence: 0.871897208

00:38:24.680 --> 00:38:27.164 Was more likely if you were

NOTE Confidence: 0.871897208

00:38:27.164 --> 00:38:28.820 pregnant versus non pregnant.

NOTE Confidence: 0.871897208

00:38:28.820 --> 00:38:31.610 It was behaving like a respiratory

NOTE Confidence: 0.871897208

00:38:31.610 --> 00:38:33.454 viral infection, like flu.

NOTE Confidence: 0.871897208

00:38:33.454 --> 00:38:35.739 Like other infections that do,

NOTE Confidence: 0.871897208

00:38:35.740 --> 00:38:37.068 RSV is not particularly

NOTE Confidence: 0.871897208

00:38:37.068 --> 00:38:38.396 dangerous in pregnant women.

NOTE Confidence: 0.871897208

00:38:38.400 --> 00:38:40.747 Not all of them do it, but it was

NOTE Confidence: 0.871897208

00:38:40.747 --> 00:38:43.610 not like it wasn't a huge surprise.

NOTE Confidence: 0.871897208

00:38:43.610 --> 00:38:46.466 The other thing is invasive ventilation

NOTE Confidence: 0.871897208

00:38:46.470 --> 00:38:49.403 and ECMO risk was higher if you're  
NOTE Confidence: 0.871897208

00:38:49.403 --> 00:38:51.131 pregnant versus non pregnant  
NOTE Confidence: 0.871897208

00:38:51.131 --> 00:38:53.847 and it was looking at you know,  
NOTE Confidence: 0.871897208

00:38:53.850 --> 00:38:56.022 treatment bias, et cetera,  
NOTE Confidence: 0.871897208

00:38:56.022 --> 00:38:57.360 healthcare seeking, no,  
NOTE Confidence: 0.871897208

00:38:57.360 --> 00:38:58.860 even if you accounted for that,  
NOTE Confidence: 0.871897208

00:38:58.860 --> 00:38:59.787 these were adjusted.  
NOTE Confidence: 0.871897208

00:38:59.787 --> 00:39:01.641 That's why I'm just showing adjusted  
NOTE Confidence: 0.871897208

00:39:01.641 --> 00:39:02.988 relative risk and odds ratios.  
NOTE Confidence: 0.871897208

00:39:02.990 --> 00:39:04.450 This was very early on.  
NOTE Confidence: 0.871897208

00:39:04.450 --> 00:39:06.480 So we knew this and since then  
NOTE Confidence: 0.871897208

00:39:06.480 --> 00:39:08.036 impact on birth outcomes has  
NOTE Confidence: 0.871897208

00:39:08.036 --> 00:39:10.192 come out and all of that stuff.  
NOTE Confidence: 0.871897208

00:39:10.200 --> 00:39:12.648 But here's the thing I want to focus on.  
NOTE Confidence: 0.871897208

00:39:12.650 --> 00:39:16.024 How do you not make this policy  
NOTE Confidence: 0.871897208

00:39:16.024 --> 00:39:18.860 taking into account that 75% of

NOTE Confidence: 0.871897208

00:39:18.860 --> 00:39:21.135 your healthcare workforce is women?

NOTE Confidence: 0.871897208

00:39:21.140 --> 00:39:23.378 Uh, and at a given time,

NOTE Confidence: 0.871897208

00:39:23.380 --> 00:39:26.602 like the day you start your

NOTE Confidence: 0.871897208

00:39:26.602 --> 00:39:27.676 vaccination program.

NOTE Confidence: 0.871897208

00:39:27.680 --> 00:39:33.328 Approximately 330,000 are pregnant.

NOTE Confidence: 0.871897208

00:39:33.330 --> 00:39:33.846 You know,

NOTE Confidence: 0.871897208

00:39:33.846 --> 00:39:35.652 babies are not brought in by stocks.

NOTE Confidence: 0.871897208

00:39:35.660 --> 00:39:39.006 They're not surprises that come out of,

NOTE Confidence: 0.871897208

00:39:39.010 --> 00:39:40.300 you know, at the individual level,

NOTE Confidence: 0.871897208

00:39:40.300 --> 00:39:41.650 they some of them are surprises.

NOTE Confidence: 0.871897208

00:39:41.650 --> 00:39:44.010 I was a big one after 20 years of marriage,

NOTE Confidence: 0.871897208

00:39:44.010 --> 00:39:46.102 but having, you know,

NOTE Confidence: 0.871897208

00:39:46.102 --> 00:39:50.150 we can plan for this and we did.

NOTE Confidence: 0.871897208

00:39:50.150 --> 00:39:52.145 And these were the first set of

NOTE Confidence: 0.871897208

00:39:52.145 --> 00:39:54.020 questions that these were the most

NOTE Confidence: 0.871897208

00:39:54.020 --> 00:39:55.630 agonizing questions that we were,

NOTE Confidence: 0.871897208

00:39:55.630 --> 00:39:56.658 you know, the advisor.

NOTE Confidence: 0.871897208

00:39:56.658 --> 00:39:57.686 So we were meeting.

NOTE Confidence: 0.871897208

00:39:57.690 --> 00:39:58.848 Three times a week, et cetera.

NOTE Confidence: 0.871897208

00:39:58.850 --> 00:40:00.999 And that was the big data gap.

NOTE Confidence: 0.871897208

00:40:01.000 --> 00:40:03.640 And even now last night I

NOTE Confidence: 0.871897208

00:40:03.640 --> 00:40:05.080 actually sent an e-mail,

NOTE Confidence: 0.871897208

00:40:05.080 --> 00:40:05.392 again,

NOTE Confidence: 0.871897208

00:40:05.392 --> 00:40:07.264 I cannot disclose even now we

NOTE Confidence: 0.871897208

00:40:07.264 --> 00:40:09.182 are going back and forth about

NOTE Confidence: 0.871897208

00:40:09.182 --> 00:40:11.018 not just to vaccinate but where

NOTE Confidence: 0.871897208

00:40:11.018 --> 00:40:12.646 to prioritize pregnant women.

NOTE Confidence: 0.871897208

00:40:12.646 --> 00:40:14.907 So even now we're doing this kind

NOTE Confidence: 0.871897208

00:40:14.907 --> 00:40:16.916 of stuff like this last night

NOTE Confidence: 0.871897208

00:40:16.920 --> 00:40:19.578 in The Who process earlier on

NOTE Confidence: 0.871897208

00:40:19.578 --> 00:40:22.580 the ACIP had this long winded.

NOTE Confidence: 0.871897208

00:40:22.580 --> 00:40:24.828 Treatment with absence of

NOTE Confidence: 0.871897208

00:40:24.828 --> 00:40:27.154 evidence or we have this data in

NOTE Confidence: 0.871897208

00:40:27.154 --> 00:40:28.990 the absence of direct evidence,

NOTE Confidence: 0.871897208

00:40:28.990 --> 00:40:32.665 but essentially said give it to them,

NOTE Confidence: 0.871897208

00:40:32.670 --> 00:40:36.600 but said that in in paragraph or two which?

NOTE Confidence: 0.711388466

00:40:38.630 --> 00:40:41.150 Yeah, I love sound effects.

NOTE Confidence: 0.711388466

00:40:41.150 --> 00:40:43.526 I know someone is equally frustrated.

NOTE Confidence: 0.711388466

00:40:43.530 --> 00:40:46.640 As frustrated as I am.

NOTE Confidence: 0.711388466

00:40:46.640 --> 00:40:50.560 But, but yeah. And so.

NOTE Confidence: 0.711388466

00:40:50.560 --> 00:40:52.104 So they did that.

NOTE Confidence: 0.711388466

00:40:52.104 --> 00:40:54.034 But but the society for

NOTE Confidence: 0.711388466

00:40:54.034 --> 00:40:55.659 maternal fetal medicine.

NOTE Confidence: 0.711388466

00:40:55.660 --> 00:40:57.488 Was even more proactive.

NOTE Confidence: 0.711388466

00:40:57.488 --> 00:41:00.760 They came out and said that look,

NOTE Confidence: 0.711388466

00:41:00.760 --> 00:41:02.818 based on what we know about disease,

NOTE Confidence: 0.711388466

00:41:02.820 --> 00:41:05.124 based on what we know about  
NOTE Confidence: 0.711388466

00:41:05.124 --> 00:41:06.660 vaccines generally in pregnancy,  
NOTE Confidence: 0.711388466

00:41:06.660 --> 00:41:08.739 based on what we know about how  
NOTE Confidence: 0.711388466

00:41:08.739 --> 00:41:10.778 the vaccine is behaving in terms  
NOTE Confidence: 0.711388466

00:41:10.778 --> 00:41:12.944 of antecedents of the the effects  
NOTE Confidence: 0.711388466

00:41:12.944 --> 00:41:14.859 that we are concerned about.  
NOTE Confidence: 0.711388466

00:41:14.860 --> 00:41:15.775 So you know,  
NOTE Confidence: 0.711388466

00:41:15.775 --> 00:41:17.605 if the vaccine was causing the  
NOTE Confidence: 0.711388466

00:41:17.605 --> 00:41:19.652 crazy amount of faith fever and  
NOTE Confidence: 0.711388466

00:41:19.652 --> 00:41:21.332 other aberrations in the non  
NOTE Confidence: 0.711388466

00:41:21.395 --> 00:41:23.726 pregnant vaccination that healthcare  
NOTE Confidence: 0.711388466

00:41:23.726 --> 00:41:25.898 workers especially were considered.  
NOTE Confidence: 0.711388466

00:41:25.900 --> 00:41:28.000 Prioritize.  
NOTE Confidence: 0.711388466

00:41:28.000 --> 00:41:30.520 Otherwise prioritized for vaccination  
NOTE Confidence: 0.711388466

00:41:30.520 --> 00:41:32.734 should be offered the vaccine.  
NOTE Confidence: 0.711388466

00:41:32.734 --> 00:41:33.370 If pregnant,

NOTE Confidence: 0.711388466

00:41:33.370 --> 00:41:36.674 it's offered the vaccine is where it started.

NOTE Confidence: 0.711388466

00:41:36.680 --> 00:41:38.712 And so you know I can tell you

NOTE Confidence: 0.711388466

00:41:38.712 --> 00:41:40.816 like so I used to make up for

NOTE Confidence: 0.711388466

00:41:40.816 --> 00:41:42.987 still wake up at 5:30 for calls

NOTE Confidence: 0.711388466

00:41:42.987 --> 00:41:45.153 because who calls are aligned with

NOTE Confidence: 0.711388466

00:41:45.153 --> 00:41:49.040 have to align from Seattle to.

NOTE Confidence: 0.711388466

00:41:49.040 --> 00:41:50.738 To to Australia and New Zealand

NOTE Confidence: 0.711388466

00:41:50.738 --> 00:41:52.559 and on all regions in between.

NOTE Confidence: 0.711388466

00:41:52.560 --> 00:41:55.255 So they happen at odd times you

NOTE Confidence: 0.711388466

00:41:55.255 --> 00:41:58.337 know you had to make that decision

NOTE Confidence: 0.711388466

00:41:58.340 --> 00:42:01.076 and and and I wish we did it better

NOTE Confidence: 0.711388466

00:42:01.080 --> 00:42:02.470 in terms of generating evidence.

NOTE Confidence: 0.711388466

00:42:02.470 --> 00:42:03.634 Now it's certain countries

NOTE Confidence: 0.711388466

00:42:03.634 --> 00:42:05.089 prioritize et cetera and that's

NOTE Confidence: 0.711388466

00:42:05.089 --> 00:42:06.599 the discussion we are having.

NOTE Confidence: 0.711388466

00:42:06.600 --> 00:42:08.568 What do we do as we go into  
NOTE Confidence: 0.711388466

00:42:08.568 --> 00:42:10.260 the routine vaccination phase?  
NOTE Confidence: 0.711388466

00:42:10.260 --> 00:42:12.823 A little bit about the ethics and  
NOTE Confidence: 0.711388466

00:42:12.823 --> 00:42:14.767 and I want to again give it to  
NOTE Confidence: 0.711388466

00:42:14.767 --> 00:42:17.002 you as a snapshot and especially  
NOTE Confidence: 0.711388466

00:42:17.002 --> 00:42:18.922 for early stage colleagues etc.  
NOTE Confidence: 0.711388466

00:42:18.930 --> 00:42:20.310 As you develop your careers,  
NOTE Confidence: 0.711388466

00:42:20.310 --> 00:42:24.125 as you think about how to make  
NOTE Confidence: 0.711388466

00:42:24.125 --> 00:42:27.439 develop evidence that impacts policy.  
NOTE Confidence: 0.711388466

00:42:27.440 --> 00:42:29.980 Uh, so to conventionally,  
NOTE Confidence: 0.711388466

00:42:29.980 --> 00:42:33.155 you think about vaccine ethics  
NOTE Confidence: 0.711388466

00:42:33.155 --> 00:42:36.059 as risk versus benefit.  
NOTE Confidence: 0.711388466

00:42:36.060 --> 00:42:36.956 In fact, this paradigm.  
NOTE Confidence: 0.711388466

00:42:36.956 --> 00:42:38.076 And so as a detour,  
NOTE Confidence: 0.711388466

00:42:38.080 --> 00:42:39.984 you introduce that that I'm going to Texas,  
NOTE Confidence: 0.711388466

00:42:39.990 --> 00:42:41.904 you to Southwestern as the founding



NOTE Confidence: 0.711388466

00:42:41.904 --> 00:42:44.779 Dean for a new school of Public Health.

NOTE Confidence: 0.711388466

00:42:44.780 --> 00:42:45.328 Well,

NOTE Confidence: 0.711388466

00:42:45.328 --> 00:42:48.616 my office will overlook a Plaza

NOTE Confidence: 0.711388466

00:42:48.616 --> 00:42:50.260 called Seldom Plaza,

NOTE Confidence: 0.711388466

00:42:50.260 --> 00:42:54.440 and Don Selden was a Yale faculty

NOTE Confidence: 0.711388466

00:42:54.440 --> 00:42:56.670 member recruited in the 1950s.

NOTE Confidence: 0.711388466

00:42:56.670 --> 00:43:01.004 To help set up a new Medical

NOTE Confidence: 0.711388466

00:43:01.004 --> 00:43:04.328 Center in Dallas in Army barracks.

NOTE Confidence: 0.711388466

00:43:04.330 --> 00:43:07.746 And he ended up being the default

NOTE Confidence: 0.711388466

00:43:07.746 --> 00:43:11.128 chair of medicine because the other

NOTE Confidence: 0.711388466

00:43:11.128 --> 00:43:13.684 only other full-time faculty member

NOTE Confidence: 0.711388466

00:43:13.684 --> 00:43:15.886 in medicine who recruited him left.

NOTE Confidence: 0.711388466

00:43:15.890 --> 00:43:18.218 So he was the only full-time

NOTE Confidence: 0.711388466

00:43:18.218 --> 00:43:20.312 person and became a legendary

NOTE Confidence: 0.711388466

00:43:20.312 --> 00:43:22.612 chair and built that institution

NOTE Confidence: 0.711388466

00:43:22.612 --> 00:43:25.798 into a sort of reasonably effect,  
NOTE Confidence: 0.711388466

00:43:25.798 --> 00:43:27.590 actually very effective research.  
NOTE Confidence: 0.711388466

00:43:27.590 --> 00:43:28.217 Or have they?  
NOTE Confidence: 0.711388466

00:43:28.217 --> 00:43:30.020 They have 6 Nobel prizes for a young,  
NOTE Confidence: 0.711388466

00:43:30.020 --> 00:43:31.229 relatively young institution,  
NOTE Confidence: 0.711388466

00:43:31.229 --> 00:43:34.050 and all of that stuff stayed the  
NOTE Confidence: 0.711388466

00:43:34.122 --> 00:43:36.138 chair of medicine for 36 years.  
NOTE Confidence: 0.711388466

00:43:36.140 --> 00:43:37.820 But here was the other thing he did.  
NOTE Confidence: 0.711388466

00:43:37.820 --> 00:43:38.396 He was,  
NOTE Confidence: 0.711388466

00:43:38.396 --> 00:43:40.412 he testified in the Nuremberg Trials as  
NOTE Confidence: 0.711388466

00:43:40.412 --> 00:43:42.760 a US before coming to Yale as a U.S.  
NOTE Confidence: 0.711388466

00:43:42.760 --> 00:43:43.676 Army doctor.  
NOTE Confidence: 0.711388466

00:43:43.676 --> 00:43:46.424 And then his lifelong interest in  
NOTE Confidence: 0.711388466

00:43:46.424 --> 00:43:49.477 ethics led him to chair what we  
NOTE Confidence: 0.711388466

00:43:49.477 --> 00:43:51.527 call the Commission of Ethics.  
NOTE Confidence: 0.711388466

00:43:51.530 --> 00:43:54.218 It had a slightly more official

NOTE Confidence: 0.711388466

00:43:54.218 --> 00:43:56.790 name that met in Belmont,

NOTE Confidence: 0.711388466

00:43:56.790 --> 00:43:59.970 MA and became the Belmont report

NOTE Confidence: 0.711388466

00:44:00.070 --> 00:44:03.766 that everyone has to study in our IRB

NOTE Confidence: 0.805566046

00:44:03.770 --> 00:44:05.290 exams, you know, tests.

NOTE Confidence: 0.805566046

00:44:05.290 --> 00:44:07.570 So he was a practicing physician.

NOTE Confidence: 0.805566046

00:44:07.570 --> 00:44:10.164 The reason I'm saying that is that, you know,

NOTE Confidence: 0.805566046

00:44:10.164 --> 00:44:12.761 it's a small world of people who have had

NOTE Confidence: 0.805566046

00:44:12.761 --> 00:44:14.897 who have developed these paradigms and.

NOTE Confidence: 0.805566046

00:44:14.900 --> 00:44:17.292 This risk benefit came out of these kinds

NOTE Confidence: 0.805566046

00:44:17.292 --> 00:44:20.925 of looks, looking at risks and benefits

NOTE Confidence: 0.805566046

00:44:20.925 --> 00:44:24.210 along different dimensions. So yes.

NOTE Confidence: 0.805566046

00:44:24.210 --> 00:44:27.078 As maternal vaccination came along,

NOTE Confidence: 0.805566046

00:44:27.078 --> 00:44:29.112 a lot of people applied the

NOTE Confidence: 0.805566046

00:44:29.112 --> 00:44:30.859 conventional risk benefit paradigm.

NOTE Confidence: 0.805566046

00:44:30.860 --> 00:44:33.842 But, but, but two sets of risk

NOTE Confidence: 0.805566046

00:44:33.842 --> 00:44:36.027 benefits mom and baby separately,  
NOTE Confidence: 0.805566046

00:44:36.027 --> 00:44:37.368 risk and benefit.  
NOTE Confidence: 0.805566046

00:44:37.368 --> 00:44:41.267 And in fact there was a paper in  
NOTE Confidence: 0.805566046

00:44:41.267 --> 00:44:44.097 Lancet infectious diseases with three.  
NOTE Confidence: 0.805566046

00:44:44.100 --> 00:44:44.738 WHO colleagues?  
NOTE Confidence: 0.805566046

00:44:44.738 --> 00:44:47.580 Two of them really good friends of mine now,  
NOTE Confidence: 0.805566046

00:44:47.580 --> 00:44:51.580 subsequently, and a prominent bioethicist.  
NOTE Confidence: 0.805566046

00:44:51.580 --> 00:44:55.444 From Europe, who worked closely with WHO,  
NOTE Confidence: 0.805566046

00:44:55.450 --> 00:44:57.325 they went through this reasoning  
NOTE Confidence: 0.805566046

00:44:57.325 --> 00:45:00.906 and then said that based on this,  
NOTE Confidence: 0.805566046

00:45:00.906 --> 00:45:04.590 maternal vaccine should only be recommended.  
NOTE Confidence: 0.805566046

00:45:04.590 --> 00:45:08.370 Number one, because of this framework,  
NOTE Confidence: 0.805566046

00:45:08.370 --> 00:45:12.048 if it's beneficial against a severe  
NOTE Confidence: 0.805566046

00:45:12.048 --> 00:45:16.906 outcomes be both for the mom and the baby,  
NOTE Confidence: 0.805566046

00:45:16.910 --> 00:45:18.629 so for this.  
NOTE Confidence: 0.805566046

00:45:18.629 --> 00:45:22.325 Flu vaccine would be iffy because it's not

NOTE Confidence: 0.805566046

00:45:22.325 --> 00:45:23.975 preventing severe outcomes according to them.

NOTE Confidence: 0.805566046

00:45:23.980 --> 00:45:25.980 Then we subsequently show that

NOTE Confidence: 0.805566046

00:45:25.980 --> 00:45:27.352 it's preventing pneumonia.

NOTE Confidence: 0.805566046

00:45:27.352 --> 00:45:30.594 But even before that, although we had

NOTE Confidence: 0.805566046

00:45:30.594 --> 00:45:32.184 also shown birth outcome prevention.

NOTE Confidence: 0.805566046

00:45:32.190 --> 00:45:34.680 But Pratas says RSV no,

NOTE Confidence: 0.805566046

00:45:34.680 --> 00:45:36.124 that didn't say that.

NOTE Confidence: 0.805566046

00:45:36.124 --> 00:45:38.744 So while I was sitting in my

NOTE Confidence: 0.805566046

00:45:38.744 --> 00:45:41.000 office in Atlanta and a faculty

NOTE Confidence: 0.805566046

00:45:41.000 --> 00:45:43.438 member who was a former mentee,

NOTE Confidence: 0.805566046

00:45:43.440 --> 00:45:45.960 former PhD student who happened to be

NOTE Confidence: 0.805566046

00:45:45.960 --> 00:45:48.714 pregnant, came into my room and said like,

NOTE Confidence: 0.805566046

00:45:48.720 --> 00:45:49.317 look, you know,

NOTE Confidence: 0.805566046

00:45:49.317 --> 00:45:51.459 if you look at the parts of this reasoning,

NOTE Confidence: 0.805566046

00:45:51.460 --> 00:45:54.180 it does make sense.

NOTE Confidence: 0.805566046

00:45:54.180 --> 00:45:55.864 But as a whole,  
NOTE Confidence: 0.805566046

00:45:55.864 --> 00:45:58.390 it really doesn't make sense because,  
NOTE Confidence: 0.805566046

00:45:58.390 --> 00:46:01.574 you know, moms want to protect their babies.  
NOTE Confidence: 0.805566046

00:46:01.580 --> 00:46:04.268 And I said, like, wasn't there a woman  
NOTE Confidence: 0.805566046

00:46:04.268 --> 00:46:07.036 in the room who raised their hand?  
NOTE Confidence: 0.805566046

00:46:07.040 --> 00:46:09.100 And said.  
NOTE Confidence: 0.805566046

00:46:09.100 --> 00:46:10.780 That look, it doesn't make sense.  
NOTE Confidence: 0.805566046

00:46:10.780 --> 00:46:12.478 I want to protect my baby,  
NOTE Confidence: 0.805566046

00:46:12.480 --> 00:46:14.398 and I should have the right to  
NOTE Confidence: 0.805566046

00:46:14.398 --> 00:46:16.117 actually do that without someone  
NOTE Confidence: 0.805566046

00:46:16.117 --> 00:46:18.570 being patronizing about it, et cetera.  
NOTE Confidence: 0.805566046

00:46:18.570 --> 00:46:19.740 And of course,  
NOTE Confidence: 0.805566046

00:46:19.740 --> 00:46:20.222 well,  
NOTE Confidence: 0.805566046

00:46:20.222 --> 00:46:24.078 guess what we found in the authors list?  
NOTE Confidence: 0.805566046

00:46:24.080 --> 00:46:25.188 There was no weapon,  
NOTE Confidence: 0.805566046

00:46:25.188 --> 00:46:26.573 and that this is important.

NOTE Confidence: 0.805566046

00:46:26.580 --> 00:46:28.659 It's not just sort of gratuitous snark,

NOTE Confidence: 0.805566046

00:46:28.660 --> 00:46:31.324 because that tells you that in

NOTE Confidence: 0.805566046

00:46:31.324 --> 00:46:33.495 these kinds of representation is

NOTE Confidence: 0.805566046

00:46:33.495 --> 00:46:35.835 not just about sort of tokenism.

NOTE Confidence: 0.805566046

00:46:35.835 --> 00:46:37.754 It's about sane, rational decision.

NOTE Confidence: 0.805566046

00:46:37.754 --> 00:46:39.064 And I'll show you why.

NOTE Confidence: 0.805566046

00:46:39.070 --> 00:46:40.912 That's it's a more sane decision

NOTE Confidence: 0.805566046

00:46:40.912 --> 00:46:41.833 and rational decision.

NOTE Confidence: 0.805566046

00:46:41.840 --> 00:46:44.492 So here's what we did we said look

NOTE Confidence: 0.805566046

00:46:44.492 --> 00:46:46.436 you know well meaning colleagues came

NOTE Confidence: 0.805566046

00:46:46.436 --> 00:46:48.837 up with this framework and prevented

NOTE Confidence: 0.805566046

00:46:48.837 --> 00:46:50.852 presented it in Lancet infection

NOTE Confidence: 0.805566046

00:46:50.918 --> 00:46:53.180 disease which is a prominent journal.

NOTE Confidence: 0.805566046

00:46:53.180 --> 00:46:56.582 So first of all we have to make our

NOTE Confidence: 0.805566046

00:46:56.582 --> 00:46:58.801 paradigm more salient more prominent

NOTE Confidence: 0.805566046

00:46:58.801 --> 00:47:02.207 so that you know we are heard it's  
NOTE Confidence: 0.805566046

00:47:02.207 --> 00:47:05.656 not it can't be you know a me too kind  
NOTE Confidence: 0.805566046

00:47:05.656 --> 00:47:09.079 of a write up so we collected first of all.  
NOTE Confidence: 0.805566046

00:47:09.080 --> 00:47:10.772 A diverse, intellectually and  
NOTE Confidence: 0.805566046

00:47:10.772 --> 00:47:12.887 otherwise diverse group of people,  
NOTE Confidence: 0.805566046

00:47:12.890 --> 00:47:15.158 bioethicists or OBGYN people  
NOTE Confidence: 0.805566046

00:47:15.158 --> 00:47:17.426 like myself and said,  
NOTE Confidence: 0.805566046

00:47:17.430 --> 00:47:17.913 look,  
NOTE Confidence: 0.805566046

00:47:17.913 --> 00:47:20.811 we need a new paradigm for  
NOTE Confidence: 0.805566046

00:47:20.811 --> 00:47:21.777 maternal immunization.  
NOTE Confidence: 0.805566046

00:47:21.780 --> 00:47:24.810 That has certain features and at  
NOTE Confidence: 0.805566046

00:47:24.810 --> 00:47:28.788 the core of this is the legitimacy.  
NOTE Confidence: 0.805566046

00:47:28.790 --> 00:47:32.264 Of a mother's interest in the  
NOTE Confidence: 0.805566046

00:47:32.264 --> 00:47:34.580 welfare of her fetus  
NOTE Confidence: 0.8460972375

00:47:34.696 --> 00:47:37.835 and infant. Because it's not a side  
NOTE Confidence: 0.8460972375

00:47:37.835 --> 00:47:40.116 thing for for someone who's pregnant



NOTE Confidence: 0.8460972375

00:47:40.116 --> 00:47:43.203 to say that I want to protect my baby,

NOTE Confidence: 0.8460972375

00:47:43.210 --> 00:47:46.126 etcetera, and I should have what there

NOTE Confidence: 0.8460972375

00:47:46.126 --> 00:47:49.218 was a keyword that they have agency,

NOTE Confidence: 0.8460972375

00:47:49.218 --> 00:47:51.640 so I just autonomy. It's agency.

NOTE Confidence: 0.8460972375

00:47:51.640 --> 00:47:53.650 Don't be the knight in shining

NOTE Confidence: 0.8460972375

00:47:53.650 --> 00:47:55.913 armor who says no, you can't have

NOTE Confidence: 0.8460972375

00:47:55.913 --> 00:47:57.959 that agency to protect your baby.

NOTE Confidence: 0.8460972375

00:47:57.960 --> 00:47:59.760 The second thing is when

NOTE Confidence: 0.8460972375

00:47:59.760 --> 00:48:01.200 you make these decisions,

NOTE Confidence: 0.8460972375

00:48:01.200 --> 00:48:02.680 whether at the clinical level

NOTE Confidence: 0.8460972375

00:48:02.680 --> 00:48:04.160 or a public health level,

NOTE Confidence: 0.8460972375

00:48:04.160 --> 00:48:06.180 at the village level or

NOTE Confidence: 0.8460972375

00:48:06.180 --> 00:48:07.796 in an advisory committee,

NOTE Confidence: 0.8460972375

00:48:07.800 --> 00:48:12.200 or in the authorship of an ethics paradigm,

NOTE Confidence: 0.8460972375

00:48:12.200 --> 00:48:14.223 you have to have those who are

NOTE Confidence: 0.8460972375

00:48:14.223 --> 00:48:16.434 going to be pregnant or are  
NOTE Confidence: 0.8460972375

00:48:16.434 --> 00:48:18.544 pregnant in your decision making.  
NOTE Confidence: 0.8460972375

00:48:18.550 --> 00:48:20.098 And then we say the part  
NOTE Confidence: 0.8460972375

00:48:20.098 --> 00:48:21.530 this is different you limit.  
NOTE Confidence: 0.8460972375

00:48:21.530 --> 00:48:23.630 So I've I've done a lot of work on mandates,  
NOTE Confidence: 0.8460972375

00:48:23.630 --> 00:48:25.114 I'm pro soft mandate.  
NOTE Confidence: 0.8460972375

00:48:25.114 --> 00:48:26.969 I was involved with discussions  
NOTE Confidence: 0.8460972375

00:48:26.969 --> 00:48:28.814 with our mandate policy and  
NOTE Confidence: 0.8460972375

00:48:28.814 --> 00:48:30.926 continue to be engaged with this  
NOTE Confidence: 0.8460972375

00:48:30.990 --> 00:48:33.550 and and Kyle has taken a few notice  
NOTE Confidence: 0.8460972375

00:48:33.550 --> 00:48:35.070 especially the university side.  
NOTE Confidence: 0.8460972375

00:48:35.070 --> 00:48:36.830 The healthcare does slightly  
NOTE Confidence: 0.8460972375

00:48:36.830 --> 00:48:37.710 different approach.  
NOTE Confidence: 0.8460972375

00:48:37.710 --> 00:48:39.546 We have taken a pretty consistent  
NOTE Confidence: 0.8460972375

00:48:39.546 --> 00:48:41.130 but middle of the road.  
NOTE Confidence: 0.8460972375

00:48:41.130 --> 00:48:42.118 We are not draconian,

NOTE Confidence: 0.8460972375

00:48:42.118 --> 00:48:43.600 we are not sort of throwing

NOTE Confidence: 0.8460972375

00:48:43.650 --> 00:48:44.910 people out on the street,

NOTE Confidence: 0.8460972375

00:48:44.910 --> 00:48:46.602 but on the other hand we

NOTE Confidence: 0.8460972375

00:48:46.602 --> 00:48:48.310 have a pretty clear mandate.

NOTE Confidence: 0.8460972375

00:48:48.310 --> 00:48:50.109 So that was like the that there

NOTE Confidence: 0.8460972375

00:48:50.109 --> 00:48:52.135 was no accident but here I said

NOTE Confidence: 0.8460972375

00:48:52.135 --> 00:48:53.635 because there are two entities

NOTE Confidence: 0.8460972375

00:48:53.635 --> 00:48:55.528 involved there's a limit to mandating

NOTE Confidence: 0.8460972375

00:48:55.530 --> 00:48:57.435 especially new vaccines in this

NOTE Confidence: 0.8460972375

00:48:57.435 --> 00:48:59.912 context and so there was empirical

NOTE Confidence: 0.8460972375

00:48:59.912 --> 00:49:02.407 evidence it wasn't just anecdotal.

NOTE Confidence: 0.8460972375

00:49:02.410 --> 00:49:05.322 So we went to we we did several

NOTE Confidence: 0.8460972375

00:49:05.322 --> 00:49:08.178 studies so this is in Kenya we ask

NOTE Confidence: 0.8460972375

00:49:08.178 --> 00:49:10.446 we put women in a bind intentionally

NOTE Confidence: 0.8460972375

00:49:10.446 --> 00:49:13.203 as pregnant women in a nationally

NOTE Confidence: 0.8460972375

00:49:13.203 --> 00:49:15.563 representative study in conducted an  
NOTE Confidence: 0.8460972375

00:49:15.637 --> 00:49:18.805 antenatal clinics in Kenya and we asked them.  
NOTE Confidence: 0.8460972375

00:49:18.810 --> 00:49:19.612 For example,  
NOTE Confidence: 0.8460972375

00:49:19.612 --> 00:49:22.018 when deciding to get a vaccine,  
NOTE Confidence: 0.8460972375

00:49:22.020 --> 00:49:25.000 whose benefit do you prioritize?  
NOTE Confidence: 0.8460972375

00:49:25.000 --> 00:49:27.737 And this is like a direct prioritization.  
NOTE Confidence: 0.8460972375

00:49:27.740 --> 00:49:30.056 Whose benefit do you prioritize first,  
NOTE Confidence: 0.8460972375

00:49:30.060 --> 00:49:32.340 mother or the baby?  
NOTE Confidence: 0.8460972375

00:49:32.340 --> 00:49:33.740 2/3 of them said right.  
NOTE Confidence: 0.8460972375

00:49:33.740 --> 00:49:35.420 All of them said it's it's.  
NOTE Confidence: 0.8460972375

00:49:35.420 --> 00:49:38.116 The rest of them said it's a Co  
NOTE Confidence: 0.8460972375

00:49:38.116 --> 00:49:38.762 prioritization now,  
NOTE Confidence: 0.8460972375

00:49:38.762 --> 00:49:42.090 but even if you frame it as a tough choice.  
NOTE Confidence: 0.8460972375

00:49:42.090 --> 00:49:44.630 Women choose pregnant women choose  
NOTE Confidence: 0.8460972375

00:49:44.630 --> 00:49:46.662 babies to prioritize first.  
NOTE Confidence: 0.8460972375

00:49:46.670 --> 00:49:48.990 So how do you take that agency away?

NOTE Confidence: 0.8460972375

00:49:48.990 --> 00:49:54.700 How do you not do trials?

NOTE Confidence: 0.8460972375

00:49:54.700 --> 00:49:55.910 That include pregnant women or

NOTE Confidence: 0.8460972375

00:49:55.910 --> 00:49:57.454 at least have a second trial

NOTE Confidence: 0.8460972375

00:49:57.454 --> 00:49:58.586 ready for pregnant women.

NOTE Confidence: 0.8460972375

00:49:58.590 --> 00:50:00.732 And so a lot of us are pushing for

NOTE Confidence: 0.8460972375

00:50:00.732 --> 00:50:02.729 actual legislation around this that

NOTE Confidence: 0.8460972375

00:50:02.729 --> 00:50:04.425 your licensure requirement should

NOTE Confidence: 0.8460972375

00:50:04.425 --> 00:50:06.425 have early studies in pregnant

NOTE Confidence: 0.8460972375

00:50:06.425 --> 00:50:08.236 women and so on and so forth.

NOTE Confidence: 0.8460972375

00:50:08.240 --> 00:50:08.554 So.

NOTE Confidence: 0.8460972375

00:50:08.554 --> 00:50:11.066 So you know this was before the vaccine,

NOTE Confidence: 0.8460972375

00:50:11.070 --> 00:50:14.355 so this was led by Ruth Faden who

NOTE Confidence: 0.8460972375

00:50:14.355 --> 00:50:16.070 actually she and I actually did a

NOTE Confidence: 0.8460972375

00:50:16.070 --> 00:50:18.129 lot of the ethics side of and policy

NOTE Confidence: 0.8460972375

00:50:18.129 --> 00:50:20.420 side of work on The Who working group.

NOTE Confidence: 0.8460972375

00:50:20.420 --> 00:50:21.090 Et cetera,  
NOTE Confidence: 0.8460972375

00:50:21.090 --> 00:50:23.100 but but focusing on public health  
NOTE Confidence: 0.8460972375

00:50:23.100 --> 00:50:25.276 emergency and this is the slide and  
NOTE Confidence: 0.8460972375

00:50:25.276 --> 00:50:27.300 this framework is before the pandemic.  
NOTE Confidence: 0.8460972375

00:50:27.300 --> 00:50:29.924 So yes we were successful but we were  
NOTE Confidence: 0.8460972375

00:50:29.924 --> 00:50:32.720 also not successful in certain things.  
NOTE Confidence: 0.8460972375

00:50:32.720 --> 00:50:34.745 And so therefore you know  
NOTE Confidence: 0.8460972375

00:50:34.745 --> 00:50:36.770 that keeps us charged and  
NOTE Confidence: 0.8465828868

00:50:36.856 --> 00:50:39.776 employed to do for the next thing to  
NOTE Confidence: 0.8465828868

00:50:39.776 --> 00:50:42.438 make sure that pregnant women have  
NOTE Confidence: 0.8465828868

00:50:42.438 --> 00:50:44.412 this you know we we vaccinate pregnant  
NOTE Confidence: 0.8465828868

00:50:44.412 --> 00:50:46.019 women for themselves and their babies  
NOTE Confidence: 0.8465828868

00:50:46.019 --> 00:50:47.389 in public health emergencies and  
NOTE Confidence: 0.8465828868

00:50:47.389 --> 00:50:48.722 otherwise some of the interesting  
NOTE Confidence: 0.8465828868

00:50:48.722 --> 00:50:50.570 work we are doing is so remember the.  
NOTE Confidence: 0.8465828868

00:50:50.570 --> 00:50:53.559 Two trials, these babies are now teens

NOTE Confidence: 0.8465828868

00:50:53.559 --> 00:50:57.153 and some of them are approaching to be

NOTE Confidence: 0.8465828868

00:50:57.153 --> 00:51:00.352 not young adults but late teens early

NOTE Confidence: 0.8465828868

00:51:00.352 --> 00:51:03.413 like their ages are 1415 to 1819.

NOTE Confidence: 0.8465828868

00:51:03.413 --> 00:51:06.430 So we have gone back to them.

NOTE Confidence: 0.8465828868

00:51:06.430 --> 00:51:07.350 It's a randomized trial.

NOTE Confidence: 0.8465828868

00:51:07.350 --> 00:51:09.446 So we have a study to look at

NOTE Confidence: 0.8465828868

00:51:09.446 --> 00:51:10.436 their cognitive outcomes.

NOTE Confidence: 0.8465828868

00:51:10.440 --> 00:51:12.056 We have educational attainment.

NOTE Confidence: 0.8465828868

00:51:12.056 --> 00:51:15.006 We have all sorts of other stuff

NOTE Confidence: 0.8465828868

00:51:15.006 --> 00:51:17.742 and that's the beauty of randomized

NOTE Confidence: 0.8465828868

00:51:17.742 --> 00:51:20.910 controlled trials in in South Africa and.

NOTE Confidence: 0.8465828868

00:51:20.910 --> 00:51:21.274 Bangladesh,

NOTE Confidence: 0.8465828868

00:51:21.274 --> 00:51:24.550 I don't know what the outcome will be but.

NOTE Confidence: 0.8465828868

00:51:24.550 --> 00:51:26.860 If we are able to show that

NOTE Confidence: 0.8465828868

00:51:26.860 --> 00:51:27.850 these cumulative effects,

NOTE Confidence: 0.8465828868

00:51:27.850 --> 00:51:29.694 prevention of early pneumonia,  
NOTE Confidence: 0.8465828868

00:51:29.694 --> 00:51:32.460 prevention of reduction in adverse birth  
NOTE Confidence: 0.8465828868

00:51:32.527 --> 00:51:35.059 outcomes etcetera has long term impact,  
NOTE Confidence: 0.8465828868

00:51:35.060 --> 00:51:36.565 that's a pretty convincing case  
NOTE Confidence: 0.8465828868

00:51:36.565 --> 00:51:38.070 for doing something about it.  
NOTE Confidence: 0.8465828868

00:51:38.070 --> 00:51:39.670 At least we hope so.  
NOTE Confidence: 0.8465828868

00:51:39.670 --> 00:51:41.294 You know a lot of the policy  
NOTE Confidence: 0.8465828868

00:51:41.294 --> 00:51:42.420 is wisdom based policy,  
NOTE Confidence: 0.8465828868

00:51:42.420 --> 00:51:43.412 not evidence based policy,  
NOTE Confidence: 0.8465828868

00:51:43.412 --> 00:51:44.652 but that's a different thing.  
NOTE Confidence: 0.8465828868

00:51:44.660 --> 00:51:46.694 So you know there's a lot of this work  
NOTE Confidence: 0.8465828868

00:51:46.694 --> 00:51:49.068 is all of this work is actually teamwork,  
NOTE Confidence: 0.8465828868

00:51:49.070 --> 00:51:51.470 our colleagues in Kenya, Guatemala,  
NOTE Confidence: 0.8465828868

00:51:51.470 --> 00:51:53.065 Pakistan and sort of various  
NOTE Confidence: 0.8465828868

00:51:53.065 --> 00:51:54.900 folks who have worked with me.  
NOTE Confidence: 0.8465828868

00:51:54.900 --> 00:51:56.280 On on this kind of work.



NOTE Confidence: 0.8465828868  
00:51:56.280 --> 00:51:56.504 Thanks.  
NOTE Confidence: 0.8465828868  
00:51:56.504 --> 00:51:58.633 And this is not a complete list of people.  
NOTE Confidence: 0.8465828868  
00:51:58.633 --> 00:51:59.299 Thank you.  
NOTE Confidence: 0.95998486  
00:52:08.360 --> 00:52:09.168 Thank you so much.  
NOTE Confidence: 0.872930212  
00:52:12.640 --> 00:52:15.088 Someone is raising their hand or  
NOTE Confidence: 0.872930212  
00:52:15.088 --> 00:52:16.630 they're waving at me. I don't know.  
NOTE Confidence: 0.816357494  
00:52:20.490 --> 00:52:21.450 I think that was Amanda.  
NOTE Confidence: 0.816357494  
00:52:21.450 --> 00:52:22.690 I think that might have been a clap,  
NOTE Confidence: 0.816357494  
00:52:22.690 --> 00:52:24.670 but Amanda, please.  
NOTE Confidence: 0.816357494  
00:52:24.670 --> 00:52:27.912 Sorry. Thank you so much.  
NOTE Confidence: 0.816357494  
00:52:27.912 --> 00:52:29.464 So that was incredibly compelling.  
NOTE Confidence: 0.816357494  
00:52:29.464 --> 00:52:31.606 I think if there's any pregnant  
NOTE Confidence: 0.816357494  
00:52:31.606 --> 00:52:33.049 individuals in the audience,  
NOTE Confidence: 0.816357494  
00:52:33.050 --> 00:52:34.832 they may be equally terrified and  
NOTE Confidence: 0.816357494  
00:52:34.832 --> 00:52:36.489 reassured about what can be done.  
NOTE Confidence: 0.816357494

00:52:36.490 --> 00:52:38.426 But what can also go wrong in pregnancy?

NOTE Confidence: 0.816357494

00:52:38.430 --> 00:52:41.200 And do we have any questions for Doctor Omer?

NOTE Confidence: 0.790124403333333

00:52:45.870 --> 00:52:48.070 So we've heard a lot about anti

NOTE Confidence: 0.790124403333333

00:52:48.070 --> 00:52:52.498 vaccine and there are this those.

NOTE Confidence: 0.790124403333333

00:52:52.500 --> 00:52:53.898 Cross political lines a little bit

NOTE Confidence: 0.790124403333333

00:52:53.900 --> 00:52:56.023 and I'm wondering if what you're

NOTE Confidence: 0.790124403333333

00:52:56.023 --> 00:52:57.850 doing or what you're aware of others

NOTE Confidence: 0.790124403333333

00:52:57.906 --> 00:52:59.478 are doing to try to influence and

NOTE Confidence: 0.790124403333333

00:52:59.478 --> 00:53:01.272 frame and and different tax people

NOTE Confidence: 0.790124403333333

00:53:01.272 --> 00:53:02.849 maybe taking including yourself.

NOTE Confidence: 0.894719890769231

00:53:03.080 --> 00:53:05.187 So 1/3 of My Portfolio is vaccine

NOTE Confidence: 0.894719890769231

00:53:05.187 --> 00:53:06.970 acceptance for the last 20 years.

NOTE Confidence: 0.894719890769231

00:53:06.970 --> 00:53:10.270 Actually that's what my PhD was on.

NOTE Confidence: 0.84513664

00:53:12.400 --> 00:53:15.784 And. Even though I wanted to do my PhD

NOTE Confidence: 0.84513664

00:53:15.784 --> 00:53:17.740 on field trials in low income countries,

NOTE Confidence: 0.84513664

00:53:17.740 --> 00:53:19.220 I I got annoyed by the fact that

NOTE Confidence: 0.84513664

00:53:19.220 --> 00:53:20.678 people who are not taking vaccines.

NOTE Confidence: 0.84513664

00:53:20.680 --> 00:53:23.980 So I ended up doing the PhD thesis on this.

NOTE Confidence: 0.84513664

00:53:23.980 --> 00:53:25.639 So I Co chaired with Peter Hotez,

NOTE Confidence: 0.84513664

00:53:25.640 --> 00:53:27.418 who you may have seen on CNN,

NOTE Confidence: 0.84513664

00:53:27.420 --> 00:53:29.805 The Lancet Commission on Vaccine

NOTE Confidence: 0.84513664

00:53:29.805 --> 00:53:32.420 Acceptance and hesitancy in the US

NOTE Confidence: 0.84513664

00:53:32.420 --> 00:53:35.404 and we have come out with all sorts

NOTE Confidence: 0.84513664

00:53:35.404 --> 00:53:37.850 of recommendations that range from the

NOTE Confidence: 0.84513664

00:53:37.850 --> 00:53:40.292 fact that the government hasn't funded.

NOTE Confidence: 0.84513664

00:53:40.300 --> 00:53:43.708 Upstream research to actually do this

NOTE Confidence: 0.84513664

00:53:43.708 --> 00:53:46.605 so we expect evidence based vaccine

NOTE Confidence: 0.84513664

00:53:46.605 --> 00:53:49.370 development pathway is not but but you

NOTE Confidence: 0.84513664

00:53:49.438 --> 00:53:51.673 know fluff based vaccine acceptance

NOTE Confidence: 0.84513664

00:53:51.673 --> 00:53:54.255 interventions if you're not going to

NOTE Confidence: 0.84513664

00:53:54.255 --> 00:53:55.902 fund this kind of stuff especially

NOTE Confidence: 0.84513664

00:53:55.902 --> 00:53:57.112 for early stage investigators you  
NOTE Confidence: 0.84513664

00:53:57.112 --> 00:53:58.788 know I'm going to get good science.  
NOTE Confidence: 0.84513664

00:53:58.790 --> 00:54:00.518 So that's you know one thing.  
NOTE Confidence: 0.84513664

00:54:00.520 --> 00:54:03.600 The other thing is I've been working  
NOTE Confidence: 0.84513664

00:54:03.600 --> 00:54:06.680 with Meta actually and WHO and UNICEF  
NOTE Confidence: 0.84513664

00:54:06.680 --> 00:54:08.638 to do randomized trials online  
NOTE Confidence: 0.84513664

00:54:08.638 --> 00:54:10.306 like 10s of millions of people.  
NOTE Confidence: 0.84513664

00:54:10.310 --> 00:54:11.690 What kind of messages work?  
NOTE Confidence: 0.84513664

00:54:11.690 --> 00:54:13.868 So that's a whole different conversation.  
NOTE Confidence: 0.84513664

00:54:13.870 --> 00:54:15.880 Well, we have evidence there.  
NOTE Confidence: 0.84513664

00:54:15.880 --> 00:54:18.772 The third thing is to depoliticize  
NOTE Confidence: 0.84513664

00:54:18.772 --> 00:54:19.736 vaccine conversations.  
NOTE Confidence: 0.84513664

00:54:19.740 --> 00:54:20.810 So perhaps.  
NOTE Confidence: 0.851834911818182

00:54:23.230 --> 00:54:25.396 You know, we have evidence worked  
NOTE Confidence: 0.851834911818182

00:54:25.396 --> 00:54:27.410 with folks in political science,  
NOTE Confidence: 0.851834911818182

00:54:27.410 --> 00:54:33.810 et cetera, that showed that we had a.

NOTE Confidence: 0.851834911818182  
00:54:33.810 --> 00:54:38.605 If focus on. If we focus,  
NOTE Confidence: 0.851834911818182  
00:54:38.605 --> 00:54:40.030 we politicized vaccines.  
NOTE Confidence: 0.851834911818182  
00:54:40.030 --> 00:54:41.110 It was gonna backfire.  
NOTE Confidence: 0.851834911818182  
00:54:41.110 --> 00:54:43.960 For example, if you.  
NOTE Confidence: 0.851834911818182  
00:54:43.960 --> 00:54:45.676 Approved it close to the election  
NOTE Confidence: 0.851834911818182  
00:54:45.676 --> 00:54:47.799 would have had a backfire effect.  
NOTE Confidence: 0.851834911818182  
00:54:47.800 --> 00:54:49.008 We didn't do that.  
NOTE Confidence: 0.851834911818182  
00:54:49.008 --> 00:54:51.230 So even in 2021 it would have been  
NOTE Confidence: 0.851834911818182  
00:54:51.230 --> 00:54:52.930 better to make vaccines a little  
NOTE Confidence: 0.851834911818182  
00:54:52.930 --> 00:54:54.922 boring and have the vaccine briefings  
NOTE Confidence: 0.851834911818182  
00:54:54.922 --> 00:54:56.719 and public health briefings from  
NOTE Confidence: 0.851834911818182  
00:54:56.719 --> 00:54:58.589 Atlanta by uniform varying public  
NOTE Confidence: 0.851834911818182  
00:54:58.589 --> 00:55:00.720 health service people rather than  
NOTE Confidence: 0.851834911818182  
00:55:00.720 --> 00:55:03.220 well meaning well qualified political  
NOTE Confidence: 0.851834911818182  
00:55:03.220 --> 00:55:05.407 appointees in DC but you know,  
NOTE Confidence: 0.851834911818182

00:55:05.407 --> 00:55:07.724 I say that with a lot of respect for  
NOTE Confidence: 0.851834911818182

00:55:07.724 --> 00:55:10.120 people who were in charge, et cetera,  
NOTE Confidence: 0.851834911818182

00:55:10.120 --> 00:55:12.400 but, but this is what happens.  
NOTE Confidence: 0.851834911818182

00:55:12.400 --> 00:55:13.252 So we did.  
NOTE Confidence: 0.851834911818182

00:55:13.252 --> 00:55:15.240 A study that came out in PNAS  
NOTE Confidence: 0.851834911818182

00:55:15.316 --> 00:55:17.914 where we look followed the two  
NOTE Confidence: 0.851834911818182

00:55:17.914 --> 00:55:20.010 snapshot of white evangelicals etc,  
NOTE Confidence: 0.851834911818182

00:55:20.010 --> 00:55:22.944 which was a group that was had lower uptake.  
NOTE Confidence: 0.851834911818182

00:55:22.950 --> 00:55:25.494 And we found that between fall  
NOTE Confidence: 0.851834911818182

00:55:25.494 --> 00:55:28.024 2020 and spring 2021 all the  
NOTE Confidence: 0.851834911818182

00:55:28.024 --> 00:55:29.696 Persuadables were persuaded and  
NOTE Confidence: 0.851834911818182

00:55:29.696 --> 00:55:32.308 nothing was working on them and  
NOTE Confidence: 0.851834911818182

00:55:32.308 --> 00:55:34.024 likely was political polarization.  
NOTE Confidence: 0.851834911818182

00:55:34.030 --> 00:55:34.574 So that.  
NOTE Confidence: 0.851834911818182

00:55:34.574 --> 00:55:37.213 But the other thing is we did this study  
NOTE Confidence: 0.851834911818182

00:55:37.213 --> 00:55:39.203 with Mushfiq Mubarak and Economics

NOTE Confidence: 0.851834911818182  
00:55:39.203 --> 00:55:41.561 12 country study right before the  
NOTE Confidence: 0.851834911818182  
00:55:41.561 --> 00:55:43.649 the the vaccines were rolled out.  
NOTE Confidence: 0.851834911818182  
00:55:43.650 --> 00:55:45.730 And we found was,  
NOTE Confidence: 0.851834911818182  
00:55:45.730 --> 00:55:47.290 among other things.  
NOTE Confidence: 0.851834911818182  
00:55:47.290 --> 00:55:48.258 That consistently,  
NOTE Confidence: 0.851834911818182  
00:55:48.258 --> 00:55:51.646 and that was the least surprising part,  
NOTE Confidence: 0.851834911818182  
00:55:51.650 --> 00:55:55.038 was that the most trusted source of  
NOTE Confidence: 0.851834911818182  
00:55:55.038 --> 00:55:56.875 vaccine information was healthcare  
NOTE Confidence: 0.851834911818182  
00:55:56.875 --> 00:55:58.030 providers across cultures.  
NOTE Confidence: 0.851834911818182  
00:55:58.030 --> 00:56:01.148 This is what I have seen in 20 years.  
NOTE Confidence: 0.851834911818182  
00:56:01.150 --> 00:56:02.758 Every single time.  
NOTE Confidence: 0.851834911818182  
00:56:02.758 --> 00:56:05.711 And we're not leveraging that lots.  
NOTE Confidence: 0.851834911818182  
00:56:05.711 --> 00:56:06.524 Some of us,  
NOTE Confidence: 0.851834911818182  
00:56:06.524 --> 00:56:08.746 some of us have been jumping up and  
NOTE Confidence: 0.851834911818182  
00:56:08.746 --> 00:56:10.601 down since spring 2020 that we need  
NOTE Confidence: 0.851834911818182

00:56:10.601 --> 00:56:13.611 to have a national CME program to  
NOTE Confidence: 0.851834911818182

00:56:13.611 --> 00:56:15.999 incorporate evidence based approaches.  
NOTE Confidence: 0.851834911818182

00:56:16.000 --> 00:56:18.795 So we physicians are primary  
NOTE Confidence: 0.851834911818182

00:56:18.795 --> 00:56:22.220 care providers and all of these  
NOTE Confidence: 0.851834911818182

00:56:22.220 --> 00:56:25.160 folks are really good at most of  
NOTE Confidence: 0.851834911818182

00:56:25.160 --> 00:56:27.306 them are good at communications,  
NOTE Confidence: 0.851834911818182

00:56:27.306 --> 00:56:30.336 but vaccines have are different  
NOTE Confidence: 0.851834911818182

00:56:30.340 --> 00:56:31.792 and so there are approaches that  
NOTE Confidence: 0.851834911818182

00:56:31.792 --> 00:56:33.740 work and so we developed our own.  
NOTE Confidence: 0.851834911818182

00:56:33.740 --> 00:56:34.268 Hmm.  
NOTE Confidence: 0.851834911818182

00:56:34.268 --> 00:56:36.380 So this was in,  
NOTE Confidence: 0.851834911818182

00:56:36.380 --> 00:56:38.756 this is the most popular Yale  
NOTE Confidence: 0.851834911818182

00:56:38.756 --> 00:56:40.801 CME program because it's open  
NOTE Confidence: 0.851834911818182

00:56:40.801 --> 00:56:43.129 to everyone and the second most  
NOTE Confidence: 0.851834911818182

00:56:43.129 --> 00:56:45.399 popular in first eleven months,  
NOTE Confidence: 0.851834911818182

00:56:45.400 --> 00:56:48.718 4000 people had taken it 4 certification,



NOTE Confidence: 0.851834911818182  
00:56:48.720 --> 00:56:51.058 et cetera, without a lot of advertising,  
NOTE Confidence: 0.851834911818182  
00:56:51.060 --> 00:56:51.528 et cetera.  
NOTE Confidence: 0.851834911818182  
00:56:51.528 --> 00:56:53.960 And now it is I think more than you know,  
NOTE Confidence: 0.851834911818182  
00:56:53.960 --> 00:56:56.380 pretty much larger than that.  
NOTE Confidence: 0.851834911818182  
00:56:56.380 --> 00:56:59.005 And the second most popular was the  
NOTE Confidence: 0.851834911818182  
00:56:59.005 --> 00:57:00.914 state of Connecticut Mandatory CME  
NOTE Confidence: 0.851834911818182  
00:57:00.914 --> 00:57:03.754 that folks had today and there was one.  
NOTE Confidence: 0.851834911818182  
00:57:03.760 --> 00:57:04.756 3rd popular than this,  
NOTE Confidence: 0.851834911818182  
00:57:04.756 --> 00:57:06.250 so there's a need for this.  
NOTE Confidence: 0.851834911818182  
00:57:06.250 --> 00:57:07.714 That's the other thing we do  
NOTE Confidence: 0.851834911818182  
00:57:07.714 --> 00:57:08.690 at the policy level.  
NOTE Confidence: 0.851834911818182  
00:57:08.690 --> 00:57:10.002 We have been pushing,  
NOTE Confidence: 0.851834911818182  
00:57:10.002 --> 00:57:11.954 and I've been pushing before, pandemic.  
NOTE Confidence: 0.851834911818182  
00:57:11.954 --> 00:57:14.386 There's a step that has taken now that  
NOTE Confidence: 0.851834911818182  
00:57:14.386 --> 00:57:16.828 a create a code for vaccine refusal,  
NOTE Confidence: 0.851834911818182

00:57:16.830 --> 00:57:19.854 it has been now created and  
NOTE Confidence: 0.851834911818182

00:57:19.854 --> 00:57:22.290 then reimburse it for it.  
NOTE Confidence: 0.851834911818182

00:57:22.290 --> 00:57:25.804 Make it, you know, give primary care.  
NOTE Confidence: 0.851834911818182

00:57:25.810 --> 00:57:28.130 Pediatricians barely break even,  
NOTE Confidence: 0.851834911818182

00:57:28.130 --> 00:57:31.846 for example, on vaccine delivery,  
NOTE Confidence: 0.851834911818182

00:57:31.846 --> 00:57:34.678 et cetera, in this country,  
NOTE Confidence: 0.851834911818182

00:57:34.678 --> 00:57:35.806 even after Obamacare.  
NOTE Confidence: 0.851834911818182

00:57:35.810 --> 00:57:36.737 And if you,  
NOTE Confidence: 0.851834911818182

00:57:36.737 --> 00:57:39.450 if you throw in all sorts of other,  
NOTE Confidence: 0.851834911818182

00:57:39.450 --> 00:57:41.362 you know, vaccine counseling,  
NOTE Confidence: 0.851834911818182

00:57:41.362 --> 00:57:43.752 it's it's a losing proposition.  
NOTE Confidence: 0.8791623

00:57:43.760 --> 00:57:45.482 So, so these are some of the  
NOTE Confidence: 0.8791623

00:57:45.482 --> 00:57:46.572 individual and policy level  
NOTE Confidence: 0.8791623

00:57:46.572 --> 00:57:48.087 recommendations that we can do.  
NOTE Confidence: 0.935681104

00:57:50.790 --> 00:57:52.210 Sure. Thank you very much.  
NOTE Confidence: 0.935681104

00:57:52.210 --> 00:57:54.601 Quickly what's the advantages and

NOTE Confidence: 0.935681104

00:57:54.601 --> 00:57:57.036 disadvantages of combining the vaccines

NOTE Confidence: 0.70998538875

00:57:57.770 --> 00:58:01.340 like same visit and same while

NOTE Confidence: 0.70998538875

00:58:01.340 --> 00:58:04.174 COVID and COVID and flew together.

NOTE Confidence: 0.70998538875

00:58:04.174 --> 00:58:07.066 So wonderful question.

NOTE Confidence: 0.70998538875

00:58:07.066 --> 00:58:10.046 So by default you start with the

NOTE Confidence: 0.70998538875

00:58:10.046 --> 00:58:12.162 position that you know you test

NOTE Confidence: 0.70998538875

00:58:12.162 --> 00:58:14.256 them separately and then you usually

NOTE Confidence: 0.70998538875

00:58:14.256 --> 00:58:16.256 then you do smaller studies to

NOTE Confidence: 0.70998538875

00:58:16.256 --> 00:58:18.330 see if they work and so you you

NOTE Confidence: 0.70998538875

00:58:18.330 --> 00:58:19.590 don't take it for granted that.

NOTE Confidence: 0.70998538875

00:58:19.590 --> 00:58:22.054 Every vaccine will be OK giving together

NOTE Confidence: 0.70998538875

00:58:22.054 --> 00:58:24.908 both in terms of the accumulative

NOTE Confidence: 0.70998538875

00:58:24.908 --> 00:58:26.636 or multiplicative immunogenicity,

NOTE Confidence: 0.70998538875

00:58:26.640 --> 00:58:27.840 reactogenicity, short term side

NOTE Confidence: 0.70998538875

00:58:27.840 --> 00:58:29.640 effects and all of that stuff.

NOTE Confidence: 0.70998538875

00:58:29.640 --> 00:58:33.440 So for the vaccines, we routinely use flu,  
NOTE Confidence: 0.70998538875

00:58:33.440 --> 00:58:35.484 pretty good fluent protasis  
NOTE Confidence: 0.70998538875

00:58:35.484 --> 00:58:38.039 flu and COVID works well,  
NOTE Confidence: 0.70998538875

00:58:38.040 --> 00:58:40.640 but it wasn't sort of a given position.  
NOTE Confidence: 0.70998538875

00:58:40.640 --> 00:58:43.874 We know based on evidence et cetera.  
NOTE Confidence: 0.70998538875

00:58:43.880 --> 00:58:45.924 So, so, so yeah, do it because  
NOTE Confidence: 0.70998538875

00:58:45.924 --> 00:58:48.520 there is a programmatic incentive,  
NOTE Confidence: 0.70998538875

00:58:48.520 --> 00:58:49.852 it decreases in equities.  
NOTE Confidence: 0.70998538875

00:58:49.852 --> 00:58:51.184 The poorer you are,  
NOTE Confidence: 0.70998538875

00:58:51.190 --> 00:58:55.710 the fewer visits you do for vaccinations.  
NOTE Confidence: 0.70998538875

00:58:55.710 --> 00:58:57.198 Our political question,  
NOTE Confidence: 0.908526876470588

00:58:57.210 --> 00:59:00.052 given the fact that we're about to  
NOTE Confidence: 0.908526876470588

00:59:00.052 --> 00:59:03.268 have a GOP congressional oversight of  
NOTE Confidence: 0.908526876470588

00:59:03.268 --> 00:59:06.730 the COVID response and executing Dr.  
NOTE Confidence: 0.908526876470588

00:59:06.730 --> 00:59:08.590 Fauci and the like,  
NOTE Confidence: 0.908526876470588

00:59:08.590 --> 00:59:12.208 is there in within the health community.

NOTE Confidence: 0.908526876470588  
00:59:12.210 --> 00:59:14.905 Has there been a discussion about how  
NOTE Confidence: 0.908526876470588  
00:59:14.905 --> 00:59:18.407 to counter what is likely to be a kind  
NOTE Confidence: 0.908526876470588  
00:59:18.407 --> 00:59:20.360 of hysterical onslaught about this?  
NOTE Confidence: 0.871575195  
00:59:20.810 --> 00:59:24.428 I think we need to have.  
NOTE Confidence: 0.871575195  
00:59:24.430 --> 00:59:26.290 It is unfortunate.  
NOTE Confidence: 0.871575195  
00:59:26.290 --> 00:59:28.866 And I like, uh, Tony.  
NOTE Confidence: 0.871575195  
00:59:28.866 --> 00:59:31.372 I like doctor Fauci's response to this.  
NOTE Confidence: 0.871575195  
00:59:31.380 --> 00:59:34.131 His response to this is, look,  
NOTE Confidence: 0.871575195  
00:59:34.131 --> 00:59:37.677 Congress has a role in oversight.  
NOTE Confidence: 0.871575195  
00:59:37.680 --> 00:59:40.188 If he's called, he'll show up.  
NOTE Confidence: 0.871575195  
00:59:40.190 --> 00:59:42.256 First of all, show up, etcetera.  
NOTE Confidence: 0.871575195  
00:59:42.256 --> 00:59:46.270 And then you know he is no shrinking Violet,  
NOTE Confidence: 0.871575195  
00:59:46.270 --> 00:59:49.720 but. Look at the big picture.  
NOTE Confidence: 0.871575195  
00:59:49.720 --> 00:59:50.818 So I'll give you an example.  
NOTE Confidence: 0.871575195  
00:59:50.820 --> 00:59:54.108 In 2019, there was a Senate hearing that  
NOTE Confidence: 0.871575195

00:59:54.108 --> 00:59:57.758 where I appeared on measles vaccination,  
NOTE Confidence: 0.871575195

00:59:57.760 --> 00:59:59.410 there were measles outbreaks happening there,  
NOTE Confidence: 0.871575195

00:59:59.410 --> 01:00:02.035 childhood vaccination in the Senate  
NOTE Confidence: 0.871575195

01:00:02.035 --> 01:00:03.926 Health Committee, Health, Education,  
NOTE Confidence: 0.871575195

01:00:03.926 --> 01:00:05.598 Labor and Pensions Committee.  
NOTE Confidence: 0.871575195

01:00:05.600 --> 01:00:08.036 It was organized by Lamar Alexander,  
NOTE Confidence: 0.871575195

01:00:08.040 --> 01:00:09.420 who was the committee chair,  
NOTE Confidence: 0.871575195

01:00:09.420 --> 01:00:10.311 and Patty Murray,  
NOTE Confidence: 0.871575195

01:00:10.311 --> 01:00:11.796 who is the ranking member.  
NOTE Confidence: 0.871575195

01:00:11.800 --> 01:00:14.998 He was a Kumbaya from Republican  
NOTE Confidence: 0.871575195

01:00:14.998 --> 01:00:17.195 and Democratic sites, etcetera,  
NOTE Confidence: 0.871575195

01:00:17.195 --> 01:00:20.170 with one exception, Senator Ron.  
NOTE Confidence: 0.871575195

01:00:20.170 --> 01:00:22.900 And Paul who misquoted Ben Franklin so  
NOTE Confidence: 0.871575195

01:00:22.900 --> 01:00:25.942 and and as in you know immigrant who  
NOTE Confidence: 0.871575195

01:00:25.942 --> 01:00:29.250 has the zeal of the convert about U.S.  
NOTE Confidence: 0.871575195

01:00:29.250 --> 01:00:30.072 history and civics.

NOTE Confidence: 0.871575195

01:00:30.072 --> 01:00:31.990 I I read up on it before

NOTE Confidence: 0.871575195

01:00:32.053 --> 01:00:33.608 deciding to become a U.S.

NOTE Confidence: 0.871575195

01:00:33.610 --> 01:00:34.957 citizen next day.

NOTE Confidence: 0.871575195

01:00:34.957 --> 01:00:37.651 I actually wrote a Washington Post

NOTE Confidence: 0.871575195

01:00:37.651 --> 01:00:40.579 op-ed going after him for among

NOTE Confidence: 0.871575195

01:00:40.579 --> 01:00:42.979 other things misquoting Ben Franklin

NOTE Confidence: 0.871575195

01:00:43.057 --> 01:00:45.377 in a in a in a Senate hearing.

NOTE Confidence: 0.871575195

01:00:45.380 --> 01:00:46.850 But the reason I'm saying

NOTE Confidence: 0.871575195

01:00:46.850 --> 01:00:48.320 is he was an exception.

NOTE Confidence: 0.871575195

01:00:48.320 --> 01:00:50.192 Senator Cassidy from Louisiana

NOTE Confidence: 0.871575195

01:00:50.192 --> 01:00:52.532 actually came back to him.

NOTE Confidence: 0.871575195

01:00:52.540 --> 01:00:55.044 So he didn't ask any questions so that

NOTE Confidence: 0.871575195

01:00:55.044 --> 01:00:57.439 none of us could sort of clarify.

NOTE Confidence: 0.871575195

01:00:57.440 --> 01:00:58.792 And there were a lot of things he

NOTE Confidence: 0.871575195

01:00:58.792 --> 01:01:00.179 said about positively about vaccines,

NOTE Confidence: 0.871575195

01:01:00.180 --> 01:01:03.316 too, you know, to set aside the start.  
NOTE Confidence: 0.871575195

01:01:03.320 --> 01:01:07.205 But the bottom line was there was  
NOTE Confidence: 0.871575195

01:01:07.205 --> 01:01:09.970 enough bipartisan support for vaccines,  
NOTE Confidence: 0.871575195

01:01:09.970 --> 01:01:11.620 especially in seven.  
NOTE Confidence: 0.871575195

01:01:11.620 --> 01:01:12.622 Having said that,  
NOTE Confidence: 0.871575195

01:01:12.622 --> 01:01:14.626 there there's always been that there  
NOTE Confidence: 0.871575195

01:01:14.626 --> 01:01:16.788 was a senator from Indiana who would  
NOTE Confidence: 0.871575195

01:01:16.788 --> 01:01:19.268 you who fanned the flames of the the  
NOTE Confidence: 0.871575195

01:01:19.268 --> 01:01:21.603 vaccine autism controversy for for a long,  
NOTE Confidence: 0.871575195

01:01:21.603 --> 01:01:22.529 long time.  
NOTE Confidence: 0.871575195

01:01:22.529 --> 01:01:25.770 And so we need to make sure  
NOTE Confidence: 0.871575195

01:01:25.884 --> 01:01:28.728 that we don't get swept up.  
NOTE Confidence: 0.871575195

01:01:28.730 --> 01:01:30.458 They realized that political  
NOTE Confidence: 0.871575195

01:01:30.458 --> 01:01:32.618 doesn't have to be partisan.  
NOTE Confidence: 0.871575195

01:01:32.620 --> 01:01:36.324 And there are serious people who were  
NOTE Confidence: 0.871575195

01:01:36.324 --> 01:01:38.884 vaccine allies and are ostensibly



NOTE Confidence: 0.871575195

01:01:38.884 --> 01:01:42.148 are vaccine allies from in on all

NOTE Confidence: 0.871575195

01:01:42.148 --> 01:01:44.740 sides of of this political spectrum.

NOTE Confidence: 0.871575195

01:01:44.740 --> 01:01:46.816 In fact, on the other hand,

NOTE Confidence: 0.871575195

01:01:46.820 --> 01:01:48.212 Marin County in,

NOTE Confidence: 0.871575195

01:01:48.212 --> 01:01:49.140 you know,

NOTE Confidence: 0.871575195

01:01:49.140 --> 01:01:52.152 as crunchy granola as it gets

NOTE Confidence: 0.871575195

01:01:52.152 --> 01:01:55.508 in the Bay Area used to be.

NOTE Confidence: 0.871575195

01:01:55.510 --> 01:01:58.084 An epicenter of vaccine refusal until

NOTE Confidence: 0.871575195

01:01:58.084 --> 01:02:00.723 recently in California and May very well

NOTE Confidence: 0.871575195

01:02:00.723 --> 01:02:03.370 end up going back to its old position.

NOTE Confidence: 0.871575195

01:02:03.370 --> 01:02:05.690 So we first of all,

NOTE Confidence: 0.871575195

01:02:05.690 --> 01:02:07.940 irrespective of your political leanings

NOTE Confidence: 0.871575195

01:02:07.940 --> 01:02:10.590 or our political leanings we need,

NOTE Confidence: 0.871575195

01:02:10.590 --> 01:02:12.450 we cannot afford to get on

NOTE Confidence: 0.871575195

01:02:12.450 --> 01:02:14.100 a high horse around this.

NOTE Confidence: 0.871575195

01:02:14.100 --> 01:02:17.278 Vaccine opposition can come from all sides.

NOTE Confidence: 0.871575195

01:02:17.280 --> 01:02:19.680 Right now it's more right leaning.

NOTE Confidence: 0.871575195

01:02:19.680 --> 01:02:20.958 But that wasn't always the case.

NOTE Confidence: 0.871575195

01:02:20.960 --> 01:02:22.904 There may not be always the

NOTE Confidence: 0.871575195

01:02:22.904 --> 01:02:23.876 case going forward.

NOTE Confidence: 0.871575195

01:02:23.880 --> 01:02:25.536 Second, their allies,

NOTE Confidence: 0.871575195

01:02:25.536 --> 01:02:26.640 Senator McConnell,

NOTE Confidence: 0.871575195

01:02:26.640 --> 01:02:28.677 who had polio when he was young,

NOTE Confidence: 0.871575195

01:02:28.680 --> 01:02:33.650 is a big vaccine ally on that side.

NOTE Confidence: 0.871575195

01:02:33.650 --> 01:02:35.366 Senator Romney is a big basin

NOTE Confidence: 0.871575195

01:02:35.366 --> 01:02:36.960 alive in in the house.

NOTE Confidence: 0.871575195

01:02:36.960 --> 01:02:39.075 There are a lot of folks who are pro

NOTE Confidence: 0.871575195

01:02:39.075 --> 01:02:40.870 vaccine and both sides of the aisle,

NOTE Confidence: 0.871575195

01:02:40.870 --> 01:02:41.300 et cetera.

NOTE Confidence: 0.871575195

01:02:41.300 --> 01:02:43.020 So this is how you handle it as

NOTE Confidence: 0.903539040714286

01:02:43.076 --> 01:02:44.408 a public health community.

NOTE Confidence: 0.903539040714286  
01:02:44.410 --> 01:02:45.580 You just can't kid around  
NOTE Confidence: 0.903539040714286  
01:02:45.580 --> 01:02:46.750 with this kind of stuff,  
NOTE Confidence: 0.903539040714286  
01:02:46.750 --> 01:02:51.304 not get inflamed and then play the long game.  
NOTE Confidence: 0.903539040714286  
01:02:51.310 --> 01:02:52.920 The long game is vaccines  
NOTE Confidence: 0.903539040714286  
01:02:52.920 --> 01:02:54.208 are effective and safe.  
NOTE Confidence: 0.903539040714286  
01:02:54.210 --> 01:02:56.040 They benefit everyone in blue  
NOTE Confidence: 0.903539040714286  
01:02:56.040 --> 01:02:58.349 States and red States and blue  
NOTE Confidence: 0.903539040714286  
01:02:58.349 --> 01:02:59.997 counties and red counties.