WEBVTT

NOTE duration:"00:17:55.9210000"

NOTE language:en-us

NOTE Confidence: 0.939363718032837

00:00:00.000 --> 00:00:03.726 I would not let you juice our next Speaker.

NOTE Confidence: 0.939363718032837

00:00:03.730 --> 00:00:05.053 Doctor Daniel Weinberger.

NOTE Confidence: 0.939363718032837

00:00:05.053 --> 00:00:07.699 Doctor Weinberger joined the faculty at

NOTE Confidence: 0.939363718032837

00:00:07.699 --> 00:00:10.577 the Yale School of public health in 2013.

NOTE Confidence: 0.939363718032837

00:00:10.580 --> 00:00:13.844 He earned his PhD in Biological Sciences from

NOTE Confidence: 0.939363718032837

00:00:13.844 --> 00:00:17.029 the Harvard School of public health in 2009.

NOTE Confidence: 0.939363718032837

00:00:17.030 --> 00:00:19.190 His research is at the intersection

NOTE Confidence: 0.939363718032837

00:00:19.190 --> 00:00:20.630 of Microbiology and Epidemiology

NOTE Confidence: 0.939363718032837

00:00:20.691 --> 00:00:22.651 and focuses on understanding the

NOTE Confidence: 0.939363718032837

00:00:22.651 --> 00:00:23.827 biological and epidemiological

NOTE Confidence: 0.939363718032837

00:00:23.827 --> 00:00:25.890 drivers of respiratory infections,

NOTE Confidence: 0.939363718032837

00:00:25.890 --> 00:00:27.099 including pneumococcus RSVP

NOTE Confidence: 0.939363718032837

00:00:27.099 --> 00:00:28.308 influenza and Legionella.

NOTE Confidence: 0.939363718032837

00:00:28.310 --> 00:00:31.124 Doctor Weinberger thank you for being here.

NOTE Confidence: 0.943543136119843

00:00:38.180 --> 00:00:40.492 Thank you very much. I can share my

NOTE Confidence: 0.943543136119843

00:00:40.492 --> 00:00:42.790 screen if it's OK. If you're able to.

NOTE Confidence: 0.903548061847687

00:01:05.120 --> 00:01:07.794 OK, thank you very much for the

NOTE Confidence: 0.903548061847687

00:01:07.794 --> 00:01:10.440 invitation to share this work with you.

NOTE Confidence: 0.903548061847687

00:01:10.440 --> 00:01:13.128 So this is a collaborative project I've

NOTE Confidence: 0.903548061847687

00:01:13.128 --> 00:01:16.277 been working on since late March with a

NOTE Confidence: 0.903548061847687

00:01:16.277 --> 00:01:18.985 large group that includes plugs from the

NOTE Confidence: 0.903548061847687

00:01:18.985 --> 00:01:21.833 NIH in New York City Department of Health,

NOTE Confidence: 0.903548061847687

00:01:21.840 --> 00:01:24.120 UMass Amherst, alidade health, and Russ.

NOTE Confidence: 0.903548061847687

00:01:24.120 --> 00:01:25.626 Killed the University.

NOTE Confidence: 0.903548061847687

00:01:25.626 --> 00:01:28.638 So when we started this project.

NOTE Confidence: 0.903548061847687

00:01:28.640 --> 00:01:31.688 We were interested in trying to extend some

NOTE Confidence: 0.903548061847687

00:01:31.688 --> 00:01:34.535 work that we've been doing as a group.

NOTE Confidence: 0.903548061847687

00:01:34.540 --> 00:01:37.025 I'm trying to estimate the burden of

NOTE Confidence: 0.903548061847687

00:01:37.025 --> 00:01:38.518 influenza during previous pandemics

NOTE Confidence: 0.903548061847687

00:01:38.518 --> 00:01:41.045 and thought that it would be a

NOTE Confidence: 0.903548061847687

00:01:41.045 --> 00:01:42.290 fairly straightforward project.

NOTE Confidence: 0.903548061847687

00:01:42.290 --> 00:01:44.366 Didn't anticipate that it would get

NOTE Confidence: 0.903548061847687

00:01:44.366 --> 00:01:46.719 a lot of attention in particular,

NOTE Confidence: 0.903548061847687

00:01:46.720 --> 00:01:50.914 but it turns out that this has become a.

NOTE Confidence: 0.903548061847687

00:01:50.920 --> 00:01:52.970 Sort of radioactively hot topic.

NOTE Confidence: 0.903548061847687

00:01:52.970 --> 00:01:56.186 Since we started doing this project.

NOTE Confidence: 0.903548061847687

00:01:56.190 --> 00:01:58.160 There's been.

NOTE Confidence: 0.903548061847687

00:01:58.160 --> 00:02:02.100 A lot of controversy.

NOTE Confidence: 0.903548061847687

00:02:02.100 --> 00:02:06.044 Sort of about the official kovit death tool.

NOTE Confidence: 0.903548061847687

00:02:06.050 --> 00:02:08.486 And a lot of questions about the

NOTE Confidence: 0.903548061847687

00:02:08.486 --> 00:02:10.680 reliability of sort of the official.

NOTE Confidence: 0.903548061847687

00:02:10.680 --> 00:02:13.039 That's that are being reported by ACDC,

NOTE Confidence: 0.903548061847687

00:02:13.040 --> 00:02:15.840 which I think makes this work especially

NOTE Confidence: 0.903548061847687

00:02:15.840 --> 00:02:18.193 important because we try to sidestep

NOTE Confidence: 0.903548061847687

00:02:18.193 --> 00:02:20.359 some of the issues around testing

NOTE Confidence: 0.903548061847687

00:02:20.359 --> 00:02:22.815 which had sort of played some of the.

NOTE Confidence: 0.903548061847687

00:02:22.820 --> 00:02:24.880 The official numbers said basically

NOTE Confidence: 0.903548061847687

00:02:24.880 --> 00:02:26.940 the controversy is been around

NOTE Confidence: 0.903548061847687

00:02:27.010 --> 00:02:29.224 sort of weather deaths are being

NOTE Confidence: 0.903548061847687

00:02:29.224 --> 00:02:31.449 accurately recorded as due to Cove it,

NOTE Confidence: 0.903548061847687

00:02:31.450 --> 00:02:33.860 or whether sort of of.

NOTE Confidence: 0.903548061847687

00:02:33.860 --> 00:02:36.090 People are sort of inappropriately

NOTE Confidence: 0.903548061847687

00:02:36.090 --> 00:02:38.320 coding deaths as Judah covered

NOTE Confidence: 0.903548061847687

00:02:38.390 --> 00:02:39.898 when people are dying.

NOTE Confidence: 0.903548061847687

00:02:39.900 --> 00:02:40.797 Of other causes,

NOTE Confidence: 0.903548061847687

00:02:40.797 --> 00:02:42.890 and maybe you're infected with so good,

NOTE Confidence: 0.903548061847687

00:02:42.890 --> 00:02:47.034 but not necessarily dying due to Cove in.

NOTE Confidence: 0.903548061847687

00:02:47.040 --> 00:02:48.797 So we have been working on this

NOTE Confidence: 0.903548061847687

00:02:48.797 --> 00:02:50.646 group that I mentioned at the

NOTE Confidence: 0.903548061847687

00:02:50.646 --> 00:02:52.361 beginning and have been partnering

NOTE Confidence: 0.903548061847687

00:02:52.361 --> 00:02:54.437 with the Washington Post on trying

NOTE Confidence: 0.903548061847687

00:02:54.437 --> 00:02:56.429 to try to estimate excess death.

NOTE Confidence: 0.903548061847687

00:02:56.430 --> 00:02:58.710 So this the idea here is instead of

NOTE Confidence: 0.903548061847687

00:02:58.710 --> 00:03:01.429 looking at the number of deaths that are

NOTE Confidence: 0.903548061847687

00:03:01.429 --> 00:03:03.629 actually recorded as being due to Kobe,

NOTE Confidence: 0.903548061847687

00:03:03.630 --> 00:03:05.376 just looking at sort of the

NOTE Confidence: 0.903548061847687

00:03:05.376 --> 00:03:07.275 changes in total deaths and deaths

NOTE Confidence: 0.903548061847687

00:03:07.275 --> 00:03:08.950 due to pneumonia or influenza,

NOTE Confidence: 0.903548061847687

00:03:08.950 --> 00:03:10.889 which are less likely to be biased

NOTE Confidence: 0.903548061847687

00:03:10.889 --> 00:03:13.020 by some of these coding issues.

NOTE Confidence: 0.903682410717011

00:03:15.500 --> 00:03:17.844 So in the United States you know the

NOTE Confidence: 0.903682410717011

00:03:17.844 --> 00:03:20.484 cause of death is decided by individuals

NOTE Confidence: 0.903682410717011

00:03:20.484 --> 00:03:22.899 by individuals all around the country

NOTE Confidence: 0.903682410717011

00:03:22.899 --> 00:03:25.405 who have their own sort of criteria,

NOTE Confidence: 0.903682410717011

00:03:25.410 --> 00:03:27.860 and it's typically done by by physician

NOTE Confidence: 0.903682410717011

00:03:27.860 --> 00:03:30.700 when the death is due to natural causes

NOTE Confidence: 0.903682410717011

00:03:30.700 --> 00:03:33.200 or by metal medical examiner or coroner,

NOTE Confidence: 0.903682410717011

00:03:33.200 --> 00:03:37.589 when it's when it's an unattended death.

NOTE Confidence: 0.903682410717011

00:03:37.590 --> 00:03:40.470 And the CDC and state helps parents are

NOTE Confidence: 0.903682410717011

00:03:40.470 --> 00:03:42.676 recording typically both an underlying cause

NOTE Confidence: 0.903682410717011

00:03:42.676 --> 00:03:45.419 of death and a contributing cause of death.

NOTE Confidence: 0.903682410717011

00:03:45.420 --> 00:03:47.744 So, for instance, you could have current

NOTE Confidence: 0.903682410717011

00:03:47.744 --> 00:03:50.048 virus listed as the underlying cause,

NOTE Confidence: 0.903682410717011

00:03:50.050 --> 00:03:52.090 an ammonia listed as a contributing

NOTE Confidence: 0.903682410717011

00:03:52.090 --> 00:03:53.970 cause or or heart attack.

NOTE Confidence: 0.903682410717011

00:03:53.970 --> 00:03:55.642 Let's just contributing cause.

NOTE Confidence: 0.903682410717011

00:03:55.642 --> 00:03:56.896 Or vice versa.

NOTE Confidence: 0.903682410717011

00:03:56.900 --> 00:03:59.906 Or you might have one of these things listed,

NOTE Confidence: 0.903682410717011

00:03:59.910 --> 00:04:01.908 so you might have pneumonia listed,

NOTE Confidence: 0.903682410717011

00:04:01.910 --> 00:04:03.580 but current viruses left off,

NOTE Confidence: 0.903682410717011

00:04:03.580 --> 00:04:06.508 or any combination of those possibilities.

NOTE Confidence: 0.903682410717011

00:04:06.510 --> 00:04:08.316 So the official death registration in

NOTE Confidence: 0.903682410717011

00:04:08.316 --> 00:04:10.680 the US is done at the state level.

NOTE Confidence: 0.903682410717011

00:04:10.680 --> 00:04:12.660 Minutes reported up to the CDC

NOTE Confidence: 0.903682410717011

00:04:12.660 --> 00:04:14.680 National Center for health statistics.

NOTE Confidence: 0.903682410717011

00:04:14.680 --> 00:04:17.025 And there is some like that data.

NOTE Confidence: 0.890483260154724

00:04:19.300 --> 00:04:22.054 So we have good reason to think that the

NOTE Confidence: 0.890483260154724

00:04:22.054 --> 00:04:24.766 number of reported deaths is an undercount.

NOTE Confidence: 0.890483260154724

00:04:24.770 --> 00:04:27.272 This is sort of a typical feature of sort

NOTE Confidence: 0.890483260154724

00:04:27.272 --> 00:04:29.900 of pathogen specific deaths in general,

NOTE Confidence: 0.890483260154724

00:04:29.900 --> 00:04:31.610 so this is, you know,

NOTE Confidence: 0.890483260154724

00:04:31.610 --> 00:04:33.656 been staying in previous influenza pandemics,

NOTE Confidence: 0.890483260154724

00:04:33.660 --> 00:04:35.380 where it's it's typically assume

NOTE Confidence: 0.890483260154724

00:04:35.380 --> 00:04:37.487 that just some fraction of the

NOTE Confidence: 0.890483260154724

00:04:37.487 --> 00:04:39.443 deaths that are due to influenza

NOTE Confidence: 0.890483260154724

00:04:39.443 --> 00:04:41.516 during an influenza pandemic or even

NOTE Confidence: 0.890483260154724

00:04:41.516 --> 00:04:43.574 during sort of typical seasonal flu,

NOTE Confidence: 0.890483260154724

00:04:43.580 --> 00:04:45.290 or actually recorded as such,

NOTE Confidence: 0.890483260154724

00:04:45.290 --> 00:04:48.170 so it's much more common to look at

NOTE Confidence: 0.890483260154724

00:04:48.170 --> 00:04:50.360 pneumonia and influenza together.

NOTE Confidence: 0.890483260154724

00:04:50.360 --> 00:04:52.448 And looking at sort of increases

NOTE Confidence: 0.890483260154724

00:04:52.448 --> 00:04:54.537 above a typical seasonal baseline to

NOTE Confidence: 0.890483260154724

00:04:54.537 --> 00:04:56.763 try to estimate the full burden of.

NOTE Confidence: 0.890483260154724

00:04:56.770 --> 00:04:59.325 Of death and of course this is

NOTE Confidence: 0.890483260154724

00:04:59.325 --> 00:05:01.370 particularly important with current virus,

NOTE Confidence: 0.890483260154724

00:05:01.370 --> 00:05:03.884 especially early in the epidemic where

NOTE Confidence: 0.890483260154724

00:05:03.884 --> 00:05:06.727 the testing was really slow to ramp up,

NOTE Confidence: 0.890483260154724

00:05:06.730 --> 00:05:09.034 and in many states testing was

NOTE Confidence: 0.890483260154724

00:05:09.034 --> 00:05:11.355 really inadequate at a time when

NOTE Confidence: 0.890483260154724

00:05:11.355 --> 00:05:13.840 we think that the virus might have

NOTE Confidence: 0.890483260154724

00:05:13.840 --> 00:05:16.300 been circulating at a high level.

NOTE Confidence: 0.893535800278187

00:05:18.690 --> 00:05:20.088 Complicating things further.

NOTE Confidence: 0.893535800278187

00:05:20.088 --> 00:05:23.350 The way that CDC records the data

NOTE Confidence: 0.893535800278187

00:05:23.427 --> 00:05:26.213 and it gets reported from the states

NOTE Confidence: 0.893535800278187

00:05:26.213 --> 00:05:28.687 there is optimal lag in the data,

NOTE Confidence: 0.893535800278187

00:05:28.690 --> 00:05:31.090 so the data that we're seeing from one

NOTE Confidence: 0.893535800278187

00:05:31.090 --> 00:05:33.720 or two or three or even four or five

NOTE Confidence: 0.893535800278187

00:05:33.720 --> 00:05:35.938 weeks ago is going to be incomplete

NOTE Confidence: 0.893535800278187

00:05:35.938 --> 00:05:38.520 in this varies quite a bit by state,

NOTE Confidence: 0.893535800278187

00:05:38.520 --> 00:05:40.690 so this plot is just showing our

NOTE Confidence: 0.893535800278187

00:05:40.690 --> 00:05:42.373 estimates for the proportion of

NOTE Confidence: 0.893535800278187

00:05:42.373 --> 00:05:44.341 deaths that are reported based on

NOTE Confidence: 0.893535800278187

00:05:44.401 --> 00:05:46.186 how far we are from the death,

NOTE Confidence: 0.893535800278187

00:05:46.190 --> 00:05:48.502 so we can see sort of study on

NOTE Confidence: 0.893535800278187

00:05:48.502 --> 00:05:49.900 the left hand side.

NOTE Confidence: 0.893535800278187

00:05:49.900 --> 00:05:52.556 Is starting at 2 weeks after the death.

NOTE Confidence: 0.893535800278187

00:05:52.560 --> 00:05:54.558 There's a huge amount of variability.

NOTE Confidence: 0.893535800278187

00:05:54.560 --> 00:05:56.552 Some states are only capturing maybe

NOTE Confidence: 0.893535800278187

00:05:56.552 --> 00:05:58.888 30% of the deaths or reporting 30%

NOTE Confidence: 0.893535800278187

00:05:58.890 --> 00:06:01.188 of the deaths that will eventually

NOTE Confidence: 0.893535800278187

00:06:01.188 --> 00:06:03.070 be reported two weeks out.

NOTE Confidence: 0.893535800278187

00:06:03.070 --> 00:06:03.636 Other states,

NOTE Confidence: 0.893535800278187

00:06:03.636 --> 00:06:05.900 like New York or quite good and we're

NOTE Confidence: 0.893535800278187

00:06:05.963 --> 00:06:08.212 getting something like 95% of the

NOTE Confidence: 0.893535800278187

00:06:08.212 --> 00:06:10.618 deaths even after just two weeks.

NOTE Confidence: 0.893535800278187

00:06:10.620 --> 00:06:12.671 It tends to ramp up fairly rapidly

NOTE Confidence: 0.893535800278187

00:06:12.671 --> 00:06:13.550 in most states,

NOTE Confidence: 0.893535800278187

00:06:13.550 --> 00:06:15.886 so you know after three or four weeks,

NOTE Confidence: 0.893535800278187

00:06:15.890 --> 00:06:18.266 we're getting more than 90% of the deaths.

NOTE Confidence: 0.893535800278187

00:06:18.266 --> 00:06:19.776 It will eventually be reported

NOTE Confidence: 0.893535800278187

00:06:19.776 --> 00:06:20.580 getting reported on,

NOTE Confidence: 0.893535800278187

00:06:20.580 --> 00:06:22.338 but there are some states like

NOTE Confidence: 0.893535800278187

00:06:22.338 --> 00:06:23.510 this is Kentucky here,

NOTE Confidence: 0.893535800278187

00:06:23.510 --> 00:06:25.490 which seems to have a particularly

NOTE Confidence: 0.893535800278187

00:06:25.490 --> 00:06:27.364 slow reporting where even out to

NOTE Confidence: 0.893535800278187

00:06:27.364 --> 00:06:29.079 sort of 10 weeks after the death,

NOTE Confidence: 0.893535800278187

00:06:29.080 --> 00:06:31.426 we're sort of in the 80% range

NOTE Confidence: 0.893535800278187

00:06:31.426 --> 00:06:34.356 of death that are reported.

NOTE Confidence: 0.893535800278187

00:06:34.360 --> 00:06:37.288 So our analysis is goals were quite simple.

NOTE Confidence: 0.893535800278187

00:06:37.290 --> 00:06:39.480 It was to quantify the excess

NOTE Confidence: 0.893535800278187

00:06:39.480 --> 00:06:40.575 burden of death.

NOTE Confidence: 0.893535800278187

00:06:40.580 --> 00:06:41.284 Student ammonia,

NOTE Confidence: 0.893535800278187

00:06:41.284 --> 00:06:41.988 or influenza,

NOTE Confidence: 0.893535800278187

00:06:41.988 --> 00:06:44.903 or do the code 19 to quantify the

NOTE Confidence: 0.893535800278187

00:06:44.903 --> 00:06:47.465 excess burden of deaths due to any

NOTE Confidence: 0.893535800278187

00:06:47.465 --> 00:06:50.096 cause and then to try to compare

NOTE Confidence: 0.893535800278187

00:06:50.096 --> 00:06:52.020 the excess Destin reported deaths.

NOTE Confidence: 0.893535800278187

00:06:52.020 --> 00:06:55.240 And we're also hoping to adjust for

NOTE Confidence: 0.893535800278187

00:06:55.240 --> 00:06:57.652 reporting delays and variations in

NOTE Confidence: 0.893535800278187

00:06:57.652 --> 00:07:00.466 deaths that are related to influenza.

NOTE Confidence: 0.893535800278187

00:07:00.470 --> 00:07:02.870 We're using data that are publicly

NOTE Confidence: 0.893535800278187

00:07:02.870 --> 00:07:05.364 available that are reported by the

NOTE Confidence: 0.893535800278187

00:07:05.364 --> 00:07:07.434 National Center for health statistics.

NOTE Confidence: 0.893535800278187

00:07:07.440 --> 00:07:09.757 Were there sort of updating these data

NOTE Confidence: 0.893535800278187

00:07:09.757 --> 00:07:12.224 on a daily basis in reporting the

NOTE Confidence: 0.893535800278187

00:07:12.224 --> 00:07:14.720 number of deaths in each week that

NOTE Confidence: 0.893535800278187

00:07:14.720 --> 00:07:17.573 were due to any cause or due to pneumonia,

NOTE Confidence: 0.893535800278187

00:07:17.580 --> 00:07:18.080 influenza,

NOTE Confidence: 0.893535800278187

00:07:18.080 --> 00:07:22.080 or current virus as a as a grouping?

NOTE Confidence: 0.893535800278187

00:07:22.080 --> 00:07:25.770 We also have some information on.

NOTE Confidence: 0.893535800278187

00:07:25.770 --> 00:07:27.870 Testing another source of data on deaths,

NOTE Confidence: 0.893535800278187

00:07:27.870 --> 00:07:29.529 which tends to be a little bit

NOTE Confidence: 0.893535800278187

00:07:29.529 --> 00:07:32.204 more up to date than the NCHS data

NOTE Confidence: 0.893535800278187

00:07:32.204 --> 00:07:32.964 from kobetracking.com,

NOTE Confidence: 0.893535800278187

00:07:32.970 --> 00:07:35.028 which is the data source that Ginny

NOTE Confidence: 0.893535800278187

00:07:35.028 --> 00:07:37.170 pits are mentioned in the previous stuff.

NOTE Confidence: 0.901496708393097

00:07:39.430 --> 00:07:42.406 And essentially, we're doing a fairly

NOTE Confidence: 0.901496708393097

00:07:42.406 --> 00:07:44.859 simple regression model where we're

NOTE Confidence: 0.901496708393097

00:07:44.859 --> 00:07:47.603 trying to model the number of deaths

NOTE Confidence: 0.901496708393097

00:07:47.603 --> 00:07:50.687 that occur in a given state in each week.

NOTE Confidence: 0.901496708393097

00:07:50.690 --> 00:07:52.746 We're adjusting for seasonality.

NOTE Confidence: 0.901496708393097

00:07:52.746 --> 00:07:54.802 We're adjusting forward influenza

NOTE Confidence: 0.901496708393097

00:07:54.802 --> 00:07:57.587 activity during the previous week to take

NOTE Confidence: 0.901496708393097

00:07:57.587 --> 00:07:59.850 into account through the lag between.

NOTE Confidence: 0.901496708393097

00:07:59.850 --> 00:08:01.726 Who activity in deaths?

NOTE Confidence: 0.901496708393097

00:08:01.726 --> 00:08:04.071 We're allowing the baseline to

NOTE Confidence: 0.901496708393097

00:08:04.071 --> 00:08:06.819 vary year to year to account

NOTE Confidence: 0.901496708393097

00:08:06.819 --> 00:08:09.009 for changes in population size,

NOTE Confidence: 0.901496708393097

00:08:09.010 --> 00:08:12.125 and we're adjusting for this reporting delay,

NOTE Confidence: 0.901496708393097

00:08:12.130 --> 00:08:14.812 which is estimated separately using a

NOTE Confidence: 0.901496708393097

00:08:14.812 --> 00:08:17.030 Bayesian Nowcasting algorithm called knobs,

NOTE Confidence: 0.901496708393097

00:08:17.030 --> 00:08:18.814 which was recently described

NOTE Confidence: 0.901496708393097

00:08:18.814 --> 00:08:20.598 by Nick Menzies Group.

NOTE Confidence: 0.884362578392029

00:08:23.560 --> 00:08:25.270 So we're basically fitting this

NOTE Confidence: 0.884362578392029

00:08:25.270 --> 00:08:26.638 regression through data today

NOTE Confidence: 0.884362578392029

00:08:26.638 --> 00:08:28.319 through the beginning of February.

NOTE Confidence: 0.884362578392029

00:08:28.320 --> 00:08:30.957 So this is a period when we don't think

NOTE Confidence: 0.884362578392029

00:08:30.957 --> 00:08:33.079 there was much coronavirus there,

NOTE Confidence: 0.884362578392029

00:08:33.080 --> 00:08:35.272 so we're sort of fitting to the data

NOTE Confidence: 0.884362578392029

00:08:35.272 --> 00:08:37.803 to try to get sort of a sense for

NOTE Confidence: 0.884362578392029

00:08:37.803 --> 00:08:39.608 with the typical seasonal pattern

NOTE Confidence: 0.884362578392029

00:08:39.608 --> 00:08:41.903 looks like and then extrapolating

NOTE Confidence: 0.884362578392029

00:08:41.903 --> 00:08:43.960 that baseline forward for the

NOTE Confidence: 0.884362578392029

00:08:43.960 --> 00:08:45.660 period from February to April.

NOTE Confidence: 0.884362578392029

00:08:45.660 --> 00:08:47.008 Then we're generating uncertainty

NOTE Confidence: 0.884362578392029

00:08:47.008 --> 00:08:49.030 intervals by resampling scheme that Nick

NOTE Confidence: 0.884362578392029

00:08:49.075 --> 00:08:50.760 breaks group is previously developed.

NOTE Confidence: 0.884362578392029

00:08:50.760 --> 00:08:53.040 I try to get an estimate for sort

NOTE Confidence: 0.884362578392029

00:08:53.040 --> 00:08:55.190 of the uncertainty in those.

NOTE Confidence: 0.884362578392029

00:08:55.190 --> 00:08:56.180 Baseline estimates

NOTE Confidence: 0.897889077663422

00:08:59.110 --> 00:09:01.972 So this is just sort of a simple top

NOTE Confidence: 0.897889077663422

00:09:01.972 --> 00:09:05.306 line picture of the excess or the total

NOTE Confidence: 0.897889077663422

00:09:05.306 --> 00:09:08.200 deaths occurring in each state overtime.

NOTE Confidence: 0.897889077663422

00:09:08.200 --> 00:09:12.150 So on the upper left corner this is New York,

NOTE Confidence: 0.897889077663422

00:09:12.150 --> 00:09:14.950 including New York City, Which.

NOTE Confidence: 0.897889077663422

00:09:14.950 --> 00:09:16.765 His, as everyone knows, experienced

NOTE Confidence: 0.897889077663422

00:09:16.765 --> 00:09:19.050 the most severe epidemic in the US.

NOTE Confidence: 0.897889077663422

00:09:19.050 --> 00:09:20.745 So the typical seasonal baseline

NOTE Confidence: 0.897889077663422

00:09:20.745 --> 00:09:22.820 is shown with this red line.

NOTE Confidence: 0.897889077663422

00:09:22.820 --> 00:09:24.932 Here the variation in deaths in

NOTE Confidence: 0.897889077663422

00:09:24.932 --> 00:09:26.919 previous years is shown in Gray,

NOTE Confidence: 0.897889077663422

00:09:26.920 --> 00:09:28.966 which you can't even really see.

NOTE Confidence: 0.897889077663422

00:09:28.970 --> 00:09:32.048 Do the baseline for New York there and then.

NOTE Confidence: 0.897889077663422

00:09:32.050 --> 00:09:34.800 The observed number of deaths.

NOTE Confidence: 0.897889077663422

00:09:34.800 --> 00:09:37.176 Of or 2020 is shown with this black line.

NOTE Confidence: 0.897889077663422

00:09:37.180 --> 00:09:38.878 So really what we're looking at

NOTE Confidence: 0.897889077663422

00:09:38.878 --> 00:09:40.294 is the difference between the

NOTE Confidence: 0.897889077663422

00:09:40.294 --> 00:09:41.656 black line in the red light.

NOTE Confidence: 0.897889077663422

00:09:41.660 --> 00:09:42.712 Here for each state,

NOTE Confidence: 0.897889077663422

00:09:42.712 --> 00:09:44.290 and so you can see pretty

NOTE Confidence: 0.897889077663422

00:09:44.355 --> 00:09:45.959 sizable increases in deaths.

NOTE Confidence: 0.897889077663422

00:09:45.960 --> 00:09:48.095 Above the seasonal baseline for New York,

NOTE Confidence: 0.897889077663422

00:09:48.100 --> 00:09:49.015 New Jersey, Massachusetts,

NOTE Confidence: 0.897889077663422

00:09:49.015 --> 00:09:49.930 District of Columbia,

NOTE Confidence: 0.897889077663422

00:09:49.930 --> 00:09:52.666 the data or a bit more noise of it.

NOTE Confidence: 0.897889077663422

00:09:52.670 --> 00:09:55.654 You can see this clear increase about it.

NOTE Confidence: 0.897889077663422

00:09:55.660 --> 00:09:57.139 Above historical patterns,

NOTE Confidence: 0.897889077663422

00:09:57.139 --> 00:10:00.097 Maryland sort of across the board

NOTE Confidence: 0.897889077663422

00:10:00.097 --> 00:10:02.857 we see pretty strong increases.

NOTE Confidence: 0.897889077663422

00:10:02.860 --> 00:10:05.104 There are a number of states

NOTE Confidence: 0.897889077663422

00:10:05.104 --> 00:10:07.996 where we do not see increases and

NOTE Confidence: 0.897889077663422

00:10:07.996 --> 00:10:11.034 these tend to be sort of smaller,

NOTE Confidence: 0.897889077663422

00:10:11.040 --> 00:10:12.195 more rural states.

NOTE Confidence: 0.897889077663422

00:10:12.195 --> 00:10:15.560 Vermont a number of states in the Midwest.

NOTE Confidence: 0.897889077663422

00:10:15.560 --> 00:10:16.950 New Hampshire we got Minnesota.

NOTE Confidence: 0.897889077663422

00:10:16.950 --> 00:10:18.528 Here are the Minnesota is starting

NOTE Confidence: 0.897889077663422

00:10:18.528 --> 00:10:20.269 to increase in more recent weeks,

NOTE Confidence: 0.897889077663422

00:10:20.270 --> 00:10:22.124 so I think if we were to extend this

NOTE Confidence: 0.897889077663422

00:10:22.124 --> 00:10:24.260 at another couple of weeks we probably

NOTE Confidence: 0.897889077663422

00:10:24.260 --> 00:10:26.360 would see something for Minnesota here.

NOTE Confidence: 0.890826940536499

00:10:30.370 --> 00:10:32.603 We are also interested in looking at

NOTE Confidence: 0.890826940536499

00:10:32.603 --> 00:10:34.660 the estimates for excess deaths in

NOTE Confidence: 0.890826940536499

00:10:34.660 --> 00:10:36.742 relation to the reported cova death.

NOTE Confidence: 0.890826940536499

00:10:36.750 --> 00:10:38.871 So here we're just looking at the

NOTE Confidence: 0.890826940536499

00:10:38.871 --> 00:10:40.790 excess pneumonia and influenza deaths,

NOTE Confidence: 0.890826940536499

00:10:40.790 --> 00:10:42.470 which are shown in red.

NOTE Confidence: 0.890826940536499

00:10:42.470 --> 00:10:45.278 So the trajectory for so this is just

NOTE Confidence: 0.890826940536499

00:10:45.278 --> 00:10:47.039 basically subtracting off the baseline

NOTE Confidence: 0.890826940536499

00:10:47.039 --> 00:10:49.370 from the previous plot and the reported

NOTE Confidence: 0.890826940536499

00:10:49.431 --> 00:10:51.863 number of covad deaths for the same week.

NOTE Confidence: 0.890826940536499

00:10:51.870 --> 00:10:54.358 So you can see in New Jersey those

NOTE Confidence: 0.890826940536499

00:10:54.358 --> 00:10:56.469 two curves basically line up very

NOTE Confidence: 0.890826940536499

00:10:56.469 --> 00:10:58.587 well in the great dash line.

NOTE Confidence: 0.890826940536499

00:10:58.590 --> 00:11:01.278 Here is showing us the increase in testing.

NOTE Confidence: 0.890826940536499

00:11:01.280 --> 00:11:02.684 So this is basically.

NOTE Confidence: 0.890826940536499

00:11:02.684 --> 00:11:04.439 Saying he was increasing testing

NOTE Confidence: 0.890826940536499

00:11:04.439 --> 00:11:06.589 at about the same time we were,

NOTE Confidence: 0.890826940536499

00:11:06.590 --> 00:11:08.690 they were increasing.

NOTE Confidence: 0.890826940536499

00:11:08.690 --> 00:11:11.756 In cases and very strong agreement

NOTE Confidence: 0.890826940536499

00:11:11.756 --> 00:11:13.800 between those two curves.

NOTE Confidence: 0.890826940536499

00:11:13.800 --> 00:11:16.038 You can contrast that with Florida,

NOTE Confidence: 0.890826940536499

00:11:16.040 --> 00:11:18.314 where we see this earlier increased

NOTE Confidence: 0.890826940536499

00:11:18.314 --> 00:11:21.362 sort of in early March of pneumonia

NOTE Confidence: 0.890826940536499

00:11:21.362 --> 00:11:22.820 and influenza deaths.

NOTE Confidence: 0.890826940536499

00:11:22.820 --> 00:11:24.650 And then the reported code.

NOTE Confidence: 0.890826940536499

00:11:24.650 --> 00:11:27.536 The deaths don't actually increased until.

NOTE Confidence: 0.890826940536499

00:11:27.540 --> 00:11:29.706 Several weeks later and one possible

NOTE Confidence: 0.890826940536499

00:11:29.706 --> 00:11:31.746 explanation for that is if you

NOTE Confidence: 0.890826940536499

00:11:31.746 --> 00:11:33.615 look at the Great Dash Line here,

NOTE Confidence: 0.890826940536499

00:11:33.620 --> 00:11:35.295 they're testing levels were quite

NOTE Confidence: 0.890826940536499

00:11:35.295 --> 00:11:37.329 low and they really didn't even

NOTE Confidence: 0.890826940536499

00:11:37.329 --> 00:11:39.135 start until a couple weeks after

NOTE Confidence: 0.890826940536499

00:11:39.135 --> 00:11:40.659 the epidemic had taken off.

NOTE Confidence: 0.890826940536499

00:11:40.660 --> 00:11:43.540 So there are quite a few deaths we think.

NOTE Confidence: 0.890826940536499

00:11:43.540 --> 00:11:46.100 Sort of during early to merge that were

NOTE Confidence: 0.890826940536499

00:11:46.100 --> 00:11:48.909 missed in Florida in the official tallies.

NOTE Confidence: 0.890826940536499

00:11:48.910 --> 00:11:51.070 Louisiana pretty good concordance between

NOTE Confidence: 0.890826940536499

00:11:51.070 --> 00:11:53.230 the observed and reported deaths,

NOTE Confidence: 0.890826940536499

00:11:53.230 --> 00:11:54.862 and likewise for Washington.

NOTE Confidence: 0.890826940536499

00:11:54.862 --> 00:11:57.897 There just seems to be a relationship

NOTE Confidence: 0.890826940536499

00:11:57.897 --> 00:12:00.903 between sort of wind testing started

NOTE Confidence: 0.890826940536499

00:12:00.903 --> 00:12:04.567 relative to the epidemic and the amount of.

NOTE Confidence: 0.890826940536499

00:12:04.570 --> 00:12:06.607 Sort of unexplained cases that we see.

NOTE Confidence: 0.905512273311615

00:12:08.650 --> 00:12:10.435 We're also interested in looking

NOTE Confidence: 0.905512273311615

00:12:10.435 --> 00:12:12.670 at the increase in deaths in

NOTE Confidence: 0.905512273311615

00:12:12.670 --> 00:12:14.615 relation to influence like illness,

NOTE Confidence: 0.905512273311615

00:12:14.620 --> 00:12:18.228 so we look if we lineups for the.

NOTE Confidence: 0.905512273311615

00:12:18.230 --> 00:12:19.750 Unexplained increase in pneumonia,

NOTE Confidence: 0.905512273311615

00:12:19.750 --> 00:12:21.650 ones adepts again and explain

NOTE Confidence: 0.905512273311615

00:12:21.650 --> 00:12:23.478 increases and influence like illness.

NOTE Confidence: 0.905512273311615

00:12:23.480 --> 00:12:25.895 Basically what we see is that the

NOTE Confidence: 0.905512273311615

00:12:25.895 --> 00:12:27.610 influence like illness increases.

NOTE Confidence: 0.905512273311615

00:12:27.610 --> 00:12:30.170 Its the blue line here and then about

NOTE Confidence: 0.905512273311615

00:12:30.170 --> 00:12:33.289 a week later we see an increase in

NOTE Confidence: 0.905512273311615

00:12:33.289 --> 00:12:35.480 the pneumonia and influenza deaths,

NOTE Confidence: 0.905512273311615

00:12:35.480 --> 00:12:37.808 suggesting that what we're seeing in

NOTE Confidence: 0.905512273311615

00:12:37.808 --> 00:12:40.455 terms of excess jets is related to

NOTE Confidence: 0.905512273311615

00:12:40.455 --> 00:12:42.495 the virus and not necessarily due

NOTE Confidence: 0.905512273311615

00:12:42.495 --> 00:12:44.817 to lock down measures which would

NOTE Confidence: 0.905512273311615

00:12:44.817 --> 00:12:47.106 have sort of more diffuse effect.

NOTE Confidence: 0.905512273311615

00:12:47.106 --> 00:12:48.610 Enough necessarily have such

NOTE Confidence: 0.905512273311615

00:12:48.610 --> 00:12:50.114 a sort of temporarily.

NOTE Confidence: 0.905512273311615

00:12:50.120 --> 00:12:56.128 Related Increase similar to Iowa.

NOTE Confidence: 0.905512273311615

00:12:56.130 --> 00:12:58.410 So just looking through the

NOTE Confidence: 0.905512273311615

00:12:58.410 --> 00:13:00.234 top line estimates here,

NOTE Confidence: 0.905512273311615

00:13:00.240 --> 00:13:02.820 this is data through April 25th

NOTE Confidence: 0.905512273311615

00:13:02.820 --> 00:13:06.053 where we have an estimate for the

NOTE Confidence: 0.905512273311615

00:13:06.053 --> 00:13:09.371 entire US of about 51,000 kuva dots.

NOTE Confidence: 0.905512273311615

00:13:09.380 --> 00:13:10.613 During this period,

NOTE Confidence: 0.905512273311615

00:13:10.613 --> 00:13:13.079 if we look at the excess

NOTE Confidence: 0.905512273311615

00:13:13.079 --> 00:13:14.870 pneumonia influenza deaths,

NOTE Confidence: 0.905512273311615

00:13:14.870 --> 00:13:17.150 we have about 57,000 deaths,

NOTE Confidence: 0.905512273311615

00:13:17.150 --> 00:13:20.349 so just a little bit more pneumonia,

NOTE Confidence: 0.905512273311615

00:13:20.350 --> 00:13:21.739 influenza deaths nationally.

NOTE Confidence: 0.905512273311615

00:13:21.739 --> 00:13:24.517 Then we have reported cova deaths

NOTE Confidence: 0.905512273311615

00:13:24.517 --> 00:13:26.807 and then about 8083 thousand.

NOTE Confidence: 0.905512273311615

00:13:26.810 --> 00:13:28.763 All cause deaths,

NOTE Confidence: 0.905512273311615

00:13:28.763 --> 00:13:34.324 so overall about sort of 40 to 50% higher.

NOTE Confidence: 0.905512273311615

00:13:34.324 --> 00:13:37.502 Death toll rather than we get from

NOTE Confidence: 0.905512273311615

00:13:37.502 --> 00:13:39.967 what's reported in the data in

NOTE Confidence: 0.905512273311615

00:13:39.967 --> 00:13:42.175 the sort of official coded data.

NOTE Confidence: 0.905512273311615

00:13:42.180 --> 00:13:44.010 This does vary quite a bit

NOTE Confidence: 0.905512273311615

00:13:44.010 --> 00:13:45.230 by state and overtime,

NOTE Confidence: 0.905512273311615

00:13:45.230 --> 00:13:47.326 so if you were to look at your

NOTE Confidence: 0.905512273311615

00:13:47.326 --> 00:13:49.200 New York City in particular,

NOTE Confidence: 0.905512273311615

00:13:49.200 --> 00:13:51.480 I'm early in the epidemic.

NOTE Confidence: 0.905512273311615

00:13:51.480 --> 00:13:53.085 The reported number of Kobe

NOTE Confidence: 0.905512273311615

00:13:53.085 --> 00:13:55.104 deaths is about 3 times higher

NOTE Confidence: 0.905512273311615

00:13:55.104 --> 00:13:57.204 than sorry that the access code.

NOTE Confidence: 0.905512273311615

00:13:57.210 --> 00:13:59.058 It's about 3 times higher than

NOTE Confidence: 0.905512273311615

00:13:59.058 --> 00:14:00.983 reported number of coded deaths as

NOTE Confidence: 0.905512273311615

00:14:00.983 --> 00:14:02.867 they have sort of increased testing

NOTE Confidence: 0.905512273311615

00:14:02.867 --> 00:14:04.960 and change the reporting guidelines.

NOTE Confidence: 0.905512273311615

00:14:04.960 --> 00:14:08.713 That gap is narrowed to about so now the.

NOTE Confidence: 0.905512273311615

00:14:08.720 --> 00:14:10.085 Exodus that's about 50% higher

NOTE Confidence: 0.905512273311615

00:14:10.085 --> 00:14:11.177 than the Coca dots,

NOTE Confidence: 0.905512273311615

00:14:11.180 --> 00:14:12.560 and in other states there

NOTE Confidence: 0.905512273311615

00:14:12.560 --> 00:14:14.730 is not much of a gap at all.

NOTE Confidence: 0.907672226428986

00:14:17.490 --> 00:14:20.283 So we were also interested in just

NOTE Confidence: 0.907672226428986

00:14:20.283 --> 00:14:23.054 trying to do something very simple

NOTE Confidence: 0.907672226428986

00:14:23.054 --> 00:14:26.505 without any sort of model behind it.

NOTE Confidence: 0.907672226428986

00:14:26.510 --> 00:14:27.954 Just because you know,

NOTE Confidence: 0.907672226428986

00:14:27.954 --> 00:14:29.759 every every analysis approach has

NOTE Confidence: 0.907672226428986

00:14:29.759 --> 00:14:31.665 assumptions that we wanted to see if we

NOTE Confidence: 0.907672226428986

00:14:31.665 --> 00:14:33.638 sort of took an independent approach.

NOTE Confidence: 0.907672226428986

00:14:33.640 --> 00:14:36.740 If we get a similar answer and what we see.

NOTE Confidence: 0.907672226428986

00:14:36.740 --> 00:14:39.422 So basically what we did was we took the

NOTE Confidence: 0.907672226428986

00:14:39.422 --> 00:14:41.352 provisional data that are reported that

NOTE Confidence: 0.907672226428986

00:14:41.352 --> 00:14:43.559 were reported this year and week 19th.

NOTE Confidence: 0.907672226428986

00:14:43.560 --> 00:14:45.960 This is reported last week.

NOTE Confidence: 0.907672226428986

00:14:45.960 --> 00:14:47.880 And we know that those data

NOTE Confidence: 0.907672226428986

00:14:47.880 --> 00:14:48.840 are highly incomplete.

NOTE Confidence: 0.907672226428986

00:14:48.840 --> 00:14:50.760 Over the last month or so,

NOTE Confidence: 0.907672226428986

00:14:50.760 --> 00:14:53.000 and there's this lag in the data,

NOTE Confidence: 0.907672226428986

00:14:53.000 --> 00:14:55.198 and we can see that here you

NOTE Confidence: 0.907672226428986

00:14:55.198 --> 00:14:57.750 can see sort of the yellow line

NOTE Confidence: 0.907672226428986

00:14:57.750 --> 00:15:00.048 sort of would be trailing down.

NOTE Confidence: 0.907672226428986

00:15:00.050 --> 00:15:02.258 And So what we did was we looked

NOTE Confidence: 0.907672226428986

00:15:02.258 --> 00:15:04.310 at the data from this year.

NOTE Confidence: 0.907672226428986

00:15:04.310 --> 00:15:06.918 That were reported in Week 19 and also

NOTE Confidence: 0.907672226428986

00:15:06.918 --> 00:15:09.368 looked at the at the data reporting

NOTE Confidence: 0.907672226428986

00:15:09.368 --> 00:15:11.510 Week 19 from the previous year.

NOTE Confidence: 0.907672226428986

00:15:11.510 --> 00:15:14.318 And what we see?

NOTE Confidence: 0.907672226428986

00:15:14.320 --> 00:15:15.074 Is that?

NOTE Confidence: 0.907672226428986

00:15:15.074 --> 00:15:17.713 The data in this year were sort

NOTE Confidence: 0.907672226428986

00:15:17.713 --> 00:15:20.119 of well aligned up until.

NOTE Confidence: 0.907672226428986

00:15:20.120 --> 00:15:22.128 So in mid to late March and then

NOTE Confidence: 0.907672226428986

00:15:22.128 --> 00:15:24.653 you see this sort of very sharp

NOTE Confidence: 0.907672226428986

00:15:24.653 --> 00:15:26.217 divergences between those lines.

NOTE Confidence: 0.907672226428986

00:15:26.220 --> 00:15:28.732 So the provisional data for 2020 are much

NOTE Confidence: 0.907672226428986

00:15:28.732 --> 00:15:31.027 higher than the original data for 2019,

NOTE Confidence: 0.907672226428986

00:15:31.030 --> 00:15:33.280 and this is sort of a very crude way

NOTE Confidence: 0.907672226428986

00:15:33.280 --> 00:15:35.846 of adjusting for the reporting delays.

NOTE Confidence: 0.907672226428986

00:15:35.850 --> 00:15:38.097 If we just look at the difference

NOTE Confidence: 0.907672226428986

00:15:38.097 --> 00:15:39.060 between these curves,

NOTE Confidence: 0.907672226428986

00:15:39.060 --> 00:15:40.986 we have about 79,000 excess deaths.

NOTE Confidence: 0.907672226428986

00:15:40.990 --> 00:15:43.350 You can compare that to the 83,000 that

NOTE Confidence: 0.907672226428986

00:15:43.350 --> 00:15:45.478 we estimated with the regression model.

NOTE Confidence: 0.907672226428986

00:15:45.480 --> 00:15:47.734 We have some other approaches we've been

NOTE Confidence: 0.907672226428986

00:15:47.734 --> 00:15:50.316 using as well where we don't adjust for.

NOTE Confidence: 0.907672226428986

00:15:50.320 --> 00:15:52.856 Blue where we get a slightly smaller effect,

NOTE Confidence: 0.907672226428986

00:15:52.860 --> 00:15:56.600 but you know we're sort of in the range to.

NOTE Confidence: 0.907672226428986

00:15:56.600 --> 00:15:58.798 You know 70 to 80,000 excess deaths,

NOTE Confidence: 0.907672226428986

00:15:58.800 --> 00:16:02.447 regardless of the method that we're using.

NOTE Confidence: 0.907672226428986

00:16:02.450 --> 00:16:04.294 So just to conclude,

NOTE Confidence: 0.907672226428986

00:16:04.294 --> 00:16:06.599 the estimated death tool related

NOTE Confidence: 0.907672226428986

00:16:06.599 --> 00:16:09.307 the pandemic is about 50% higher

NOTE Confidence: 0.907672226428986

00:16:09.307 --> 00:16:12.049 than the reported number of deaths.

NOTE Confidence: 0.907672226428986

00:16:12.050 --> 00:16:14.732 This that sort of estimate for

NOTE Confidence: 0.907672226428986

00:16:14.732 --> 00:16:17.619 how much higher the excess deaths

NOTE Confidence: 0.907672226428986

00:16:17.619 --> 00:16:20.625 is has been changing overtime and

NOTE Confidence: 0.907672226428986

00:16:20.625 --> 00:16:24.006 has been narrowing so so the gap

NOTE Confidence: 0.907672226428986

00:16:24.006 --> 00:16:25.834 has been narrowing as.

NOTE Confidence: 0.907672226428986

00:16:25.840 --> 00:16:26.562 Sort of,

NOTE Confidence: 0.907672226428986

00:16:26.562 --> 00:16:29.089 the standards for reporting deaths for Cove.

NOTE Confidence: 0.907672226428986

00:16:29.090 --> 00:16:31.304 It have changed and the recommendations

NOTE Confidence: 0.907672226428986

00:16:31.304 --> 00:16:34.249 have changed so you know with the current

NOTE Confidence: 0.907672226428986

00:16:34.249 --> 00:16:36.670 data were probably closer to about 40%,

NOTE Confidence: 0.907672226428986

00:16:36.670 --> 00:16:39.316 but in any case I think this

NOTE Confidence: 0.907672226428986

00:16:39.316 --> 00:16:42.337 puts to bed the idea that were.

NOTE Confidence: 0.907672226428986

00:16:42.340 --> 00:16:44.450 Start over accounting the cova

NOTE Confidence: 0.907672226428986

00:16:44.450 --> 00:16:45.716 deaths when we're.

NOTE Confidence: 0.907672226428986

00:16:45.720 --> 00:16:47.380 Certainly can't be official data.

NOTE Confidence: 0.907672226428986

00:16:47.380 --> 00:16:50.397 There's no evidence that we see that.

NOTE Confidence: 0.907672226428986

00:16:50.400 --> 00:16:53.008 The official data are in any way inflated,

NOTE Confidence: 0.907672226428986

00:16:53.010 --> 00:16:56.167 and if anything we think that they

NOTE Confidence: 0.907672226428986

00:16:56.167 --> 00:16:58.300 are substantially under reported.

NOTE Confidence: 0.907672226428986

00:16:58.300 --> 00:17:01.390 And if you just seem to be a lot of it,

NOTE Confidence: 0.907672226428986

00:17:01.390 --> 00:17:02.956 a pretty sizable gap between states

NOTE Confidence: 0.907672226428986

00:17:02.956 --> 00:17:05.252 in how much of a difference there is

NOTE Confidence: 0.907672226428986

00:17:05.252 --> 00:17:07.040 between the reported number of Copa

NOTE Confidence: 0.907672226428986

00:17:07.097 --> 00:17:09.001 deaths in the total number of death

NOTE Confidence: 0.907672226428986

00:17:09.001 --> 00:17:11.060 suspect this has something to do with

NOTE Confidence: 0.907672226428986

00:17:11.060 --> 00:17:13.305 testing practices as well as sort of

NOTE Confidence: 0.907672226428986

00:17:13.305 --> 00:17:15.225 culture around how deaths are coded.

NOTE Confidence: 0.907672226428986

00:17:15.230 --> 00:17:17.450 And we still don't know what's

NOTE Confidence: 0.907672226428986

00:17:17.450 --> 00:17:18.930 driving that unexplained increase,

NOTE Confidence: 0.893023649851481

00:17:18.930 --> 00:17:20.894 so we know that.

NOTE Confidence: 0.893023649851481

00:17:20.894 --> 00:17:22.398 You know, pneumonia,

NOTE Confidence: 0.893023649851481

00:17:22.398 --> 00:17:26.024 influenza are sort of accounting for some.

NOTE Confidence: 0.893023649851481

00:17:26.030 --> 00:17:27.438 Get code is pneumonia,

NOTE Confidence: 0.893023649851481

00:17:27.438 --> 00:17:28.494 influenza or accounting.

NOTE Confidence: 0.893023649851481

00:17:28.500 --> 00:17:31.324 For some of that increase that we're seeing,

NOTE Confidence: 0.893023649851481

00:17:31.330 --> 00:17:33.115 but there's still a large

NOTE Confidence: 0.893023649851481

00:17:33.115 --> 00:17:34.543 unattributed increase and future

NOTE Confidence: 0.893023649851481

00:17:34.543 --> 00:17:36.268 work will try to understand.

NOTE Confidence: 0.893023649851481

00:17:36.270 --> 00:17:38.748 Sort of what's driving them with

NOTE Confidence: 0.893023649851481

00:17:38.748 --> 00:17:40.720 somebody 'cause specific factors out.

NOTE Confidence: 0.893023649851481

00:17:40.720 --> 00:17:42.330 So thank you very much.

NOTE Confidence: 0.893023649851481

00:17:42.330 --> 00:17:44.112 We have a previous version of

NOTE Confidence: 0.893023649851481

00:17:44.112 --> 00:17:45.860 this work is unmet archive.

NOTE Confidence: 0.893023649851481

00:17:45.860 --> 00:17:48.434 If you'd like to learn more or I'd be

NOTE Confidence: 0.893023649851481

00:17:48.434 --> 00:17:50.987 happy to answer any questions by email.

NOTE Confidence: 0.913428366184235

00:17:54.190 --> 00:17:55.921 Thank you very much doctor Weinberger.