

WEBVTT

NOTE duration:"00:55:26.8800000"

NOTE language:en-us

NOTE Confidence: 0.8490106

00:00:00.000 --> 00:00:01.170 I'm Lauren Tobias,

NOTE Confidence: 0.8490106

00:00:01.170 --> 00:00:04.509 an I'd like to welcome you to our

NOTE Confidence: 0.8490106

00:00:04.509 --> 00:00:07.149 yield sleep seminar this afternoon.

NOTE Confidence: 0.8490106

00:00:07.150 --> 00:00:09.088 I have a few quick announcements

NOTE Confidence: 0.8490106

00:00:09.088 --> 00:00:10.910 before I introduce our speaker.

NOTE Confidence: 0.8490106

00:00:10.910 --> 00:00:13.115 First, please take a moment to ensure

NOTE Confidence: 0.8490106

00:00:13.115 --> 00:00:15.584 that you are muted in order to

NOTE Confidence: 0.8490106

00:00:15.584 --> 00:00:17.404 receive CME credit for attendance,

NOTE Confidence: 0.8490106

00:00:17.410 --> 00:00:19.804 please see the chat room for instructions.

NOTE Confidence: 0.8490106

00:00:19.810 --> 00:00:22.362 You can text the unique ID which is

NOTE Confidence: 0.8490106

00:00:22.362 --> 00:00:25.005 listed there anytime until 3:15 PM and

NOTE Confidence: 0.8490106

00:00:25.005 --> 00:00:27.311 if you're not already registered with

NOTE Confidence: 0.8490106

00:00:27.311 --> 00:00:30.065 Yell Simi you will need to do that first.

NOTE Confidence: 0.8490106

00:00:30.070 --> 00:00:31.775 If you have questions during

NOTE Confidence: 0.8490106

00:00:31.775 --> 00:00:32.760 the presentation, please.

NOTE Confidence: 0.8490106

00:00:32.760 --> 00:00:35.160 Make use of the chat room and I

NOTE Confidence: 0.8490106

00:00:35.160 --> 00:00:37.443 will also invite everybody to unmute

NOTE Confidence: 0.8490106

00:00:37.443 --> 00:00:40.039 themselves at the end of the hour.

NOTE Confidence: 0.8490106

00:00:40.040 --> 00:00:42.092 We do have recorded versions of

NOTE Confidence: 0.8490106

00:00:42.092 --> 00:00:44.223 these lectures that will be available

NOTE Confidence: 0.8490106

00:00:44.223 --> 00:00:46.311 online within two weeks at the

NOTE Confidence: 0.8490106

00:00:46.311 --> 00:00:47.808 link provided in the chat,

NOTE Confidence: 0.8490106

00:00:47.810 --> 00:00:49.652 and finally feel free to spread

NOTE Confidence: 0.8490106

00:00:49.652 --> 00:00:51.869 the word about our seminar series.

NOTE Confidence: 0.8490106

00:00:51.870 --> 00:00:54.566 We still have at least three talks left.

NOTE Confidence: 0.8490106

00:00:54.570 --> 00:00:57.242 Two or three talks left for this year

NOTE Confidence: 0.8490106

00:00:57.242 --> 00:01:00.033 and then we take a hiatus for the

NOTE Confidence: 0.8490106

00:01:00.033 --> 00:01:02.350 summer and will resume in the fall,

NOTE Confidence: 0.8490106

00:01:02.350 --> 00:01:04.588 but we always love to see.

NOTE Confidence: 0.8490106

00:01:04.590 --> 00:01:07.159 New names and faces on our list.
NOTE Confidence: 0.8490106

00:01:07.160 --> 00:01:09.652 So now I have the great pleasure
NOTE Confidence: 0.8490106

00:01:09.652 --> 00:01:11.534 of introducing Doctor Dennis Wong
NOTE Confidence: 0.8490106

00:01:11.534 --> 00:01:13.026 as our Speaker Doctor.
NOTE Confidence: 0.8490106

00:01:13.030 --> 00:01:14.900 Huang's training has taken him
NOTE Confidence: 0.8490106

00:01:14.900 --> 00:01:17.183 across the country from being an
NOTE Confidence: 0.8490106

00:01:17.183 --> 00:01:19.265 undergrad at Princeton to a medical.
NOTE Confidence: 0.8490106

00:01:19.270 --> 00:01:21.811 His medical degree at the University of
NOTE Confidence: 0.8490106

00:01:21.811 --> 00:01:23.688 Illinois Residency and Chief Residency
NOTE Confidence: 0.8490106

00:01:23.688 --> 00:01:26.236 in Internal Medicine at Rush in Chicago.
NOTE Confidence: 0.8490106

00:01:26.240 --> 00:01:27.708 Fellow and pulmonary critical
NOTE Confidence: 0.8490106

00:01:27.708 --> 00:01:29.176 care medicine at UCLA,
NOTE Confidence: 0.8490106

00:01:29.180 --> 00:01:31.010 and finally a Sleep Medicine
NOTE Confidence: 0.8490106

00:01:31.010 --> 00:01:32.474 fellowship at North Shore,
NOTE Confidence: 0.8490106

00:01:32.480 --> 00:01:35.270 Long Island Jewish in New York.
NOTE Confidence: 0.8490106

00:01:35.270 --> 00:01:37.923 For the past 11 years he served

NOTE Confidence: 0.8490106
00:01:37.923 --> 00:01:40.679 as medical director of the Kaiser
NOTE Confidence: 0.8490106
00:01:40.679 --> 00:01:43.239 Permanente Fontana Sleep Disorder Center.
NOTE Confidence: 0.8490106
00:01:43.240 --> 00:01:44.656 He is an actor.
NOTE Confidence: 0.8490106
00:01:44.656 --> 00:01:46.780 He's very active in the American
NOTE Confidence: 0.8490106
00:01:46.859 --> 00:01:49.034 Academy of Sleep Medicine and
NOTE Confidence: 0.8490106
00:01:49.034 --> 00:01:51.896 currently serves as member of the
NOTE Confidence: 0.8490106
00:01:51.896 --> 00:01:54.316 Presidential Tele Medicine Committee.
NOTE Confidence: 0.8490106
00:01:54.320 --> 00:01:56.485 His research and clinical expertise
NOTE Confidence: 0.8490106
00:01:56.485 --> 00:01:58.217 includes the implementation of
NOTE Confidence: 0.8490106
00:01:58.217 --> 00:01:59.958 health information technology to
NOTE Confidence: 0.8490106
00:01:59.958 --> 00:02:02.033 improve the cost effectiveness of
NOTE Confidence: 0.8490106
00:02:02.033 --> 00:02:04.400 sleep care and developing artificial
NOTE Confidence: 0.8490106
00:02:04.400 --> 00:02:06.364 intelligence systems to enhance.
NOTE Confidence: 0.8490106
00:02:06.370 --> 00:02:08.134 Personalized care and provide
NOTE Confidence: 0.8490106
00:02:08.134 --> 00:02:09.457 clinical decision support.
NOTE Confidence: 0.8490106

00:02:09.460 --> 00:02:12.239 He has a strategic research award from
NOTE Confidence: 0.8490106

00:02:12.239 --> 00:02:14.582 the American Sleep Medicine Foundation
NOTE Confidence: 0.8490106

00:02:14.582 --> 00:02:16.730 to study artificial intelligence
NOTE Confidence: 0.8490106

00:02:16.730 --> 00:02:20.079 to optimize diagnosis of OSA and he
NOTE Confidence: 0.8490106

00:02:20.079 --> 00:02:22.335 also has an institutional award from
NOTE Confidence: 0.8490106

00:02:22.335 --> 00:02:26.256 Kaiser on the use of AI to improve triage.
NOTE Confidence: 0.8490106

00:02:26.260 --> 00:02:28.997 Ng of patients who have suspected sleep
NOTE Confidence: 0.8490106

00:02:28.997 --> 00:02:30.768 disordered breathing into appropriate
NOTE Confidence: 0.8490106

00:02:30.768 --> 00:02:32.888 diagnostic and testing pathways.
NOTE Confidence: 0.8490106

00:02:32.890 --> 00:02:35.837 So with that he has a very
NOTE Confidence: 0.8490106

00:02:35.837 --> 00:02:38.600 exciting topic for this afternoon.
NOTE Confidence: 0.8490106

00:02:38.600 --> 00:02:41.253 Anne Anne please join me in welcoming
NOTE Confidence: 0.8490106

00:02:41.253 --> 00:02:43.760 him to speak about automation,
NOTE Confidence: 0.8490106

00:02:43.760 --> 00:02:45.480 Big data and artificial
NOTE Confidence: 0.8490106

00:02:45.480 --> 00:02:47.200 Intelligence and OSA management.
NOTE Confidence: 0.8490106

00:02:47.200 --> 00:02:48.944 Future and current implementations

NOTE Confidence: 0.8490106

00:02:48.944 --> 00:02:52.360 that I'll turn it over to you, Dennis.

NOTE Confidence: 0.8674223

00:02:53.170 --> 00:02:54.778 Thanks so much, Lauren,

NOTE Confidence: 0.8674223

00:02:54.778 --> 00:02:57.190 and thank you for the invite.

NOTE Confidence: 0.8674223

00:02:57.190 --> 00:02:58.862 It's you know really.

NOTE Confidence: 0.8674223

00:02:58.862 --> 00:03:01.834 My pleasure to you know to be

NOTE Confidence: 0.8674223

00:03:01.834 --> 00:03:04.424 here and to present to you all.

NOTE Confidence: 0.8674223

00:03:04.430 --> 00:03:06.938 I certainly don't consider myself to

NOTE Confidence: 0.8674223

00:03:06.938 --> 00:03:10.054 be an expert and I will, you know.

NOTE Confidence: 0.8674223

00:03:10.054 --> 00:03:12.868 Certainly go into that a little bit.

NOTE Confidence: 0.8674223

00:03:12.870 --> 00:03:15.276 You know just what's influencing me.

NOTE Confidence: 0.8674223

00:03:15.280 --> 00:03:17.686 You know what my perspective is,

NOTE Confidence: 0.8674223

00:03:17.690 --> 00:03:20.504 you know as a relates to the

NOTE Confidence: 0.8674223

00:03:20.504 --> 00:03:22.654 use of automation, big data,

NOTE Confidence: 0.8674223

00:03:22.654 --> 00:03:25.014 artificial intelligence and so forth.

NOTE Confidence: 0.8674223

00:03:25.020 --> 00:03:30.046 So I am now sharing my screen.

NOTE Confidence: 0.8674223

00:03:30.050 --> 00:03:32.650 And please let me know if you can't see it,
NOTE Confidence: 0.8674223

00:03:32.650 --> 00:03:36.514 but I think you should be able to.
NOTE Confidence: 0.8674223

00:03:36.520 --> 00:03:37.348 There we go.
NOTE Confidence: 0.8674223

00:03:37.348 --> 00:03:40.041 OK, so this is my title slide and let
NOTE Confidence: 0.8674223

00:03:40.041 --> 00:03:42.449 me just kind of start flipping through.
NOTE Confidence: 0.8674223

00:03:42.450 --> 00:03:44.938 I do want to make sure that I
NOTE Confidence: 0.8674223

00:03:44.938 --> 00:03:46.819 leave enough time at the end.
NOTE Confidence: 0.8674223

00:03:46.820 --> 00:03:49.640 You know for us to have a discussion to be
NOTE Confidence: 0.8674223

00:03:49.713 --> 00:03:52.737 able to take questions you know and so forth.
NOTE Confidence: 0.8674223

00:03:52.740 --> 00:03:55.236 A lot of what I'm presenting there are,
NOTE Confidence: 0.8674223

00:03:55.240 --> 00:03:56.683 you know, vision,
NOTE Confidence: 0.8674223

00:03:56.683 --> 00:03:58.607 kind of things and.
NOTE Confidence: 0.8674223

00:03:58.610 --> 00:04:00.305 Into in some respects not
NOTE Confidence: 0.8674223

00:04:00.305 --> 00:04:02.000 a lot of concrete things.
NOTE Confidence: 0.8674223

00:04:02.000 --> 00:04:03.908 You know, perhaps that have been
NOTE Confidence: 0.8674223

00:04:03.908 --> 00:04:05.730 developed so kind of sharing.

NOTE Confidence: 0.8674223

00:04:05.730 --> 00:04:07.420 You know people's ideas about

NOTE Confidence: 0.8674223

00:04:07.420 --> 00:04:08.772 vision about the future,

NOTE Confidence: 0.8674223

00:04:08.780 --> 00:04:10.808 I think is certainly very valuable.

NOTE Confidence: 0.8674223

00:04:10.810 --> 00:04:13.530 You know, Lauren did a great job of,

NOTE Confidence: 0.8674223

00:04:13.530 --> 00:04:14.194 you know,

NOTE Confidence: 0.8674223

00:04:14.194 --> 00:04:15.522 talking about my research

NOTE Confidence: 0.8674223

00:04:15.522 --> 00:04:17.589 support in some of this stuff.

NOTE Confidence: 0.8674223

00:04:17.590 --> 00:04:20.656 A lot of this stuff that I'm

NOTE Confidence: 0.8674223

00:04:20.656 --> 00:04:22.610 presenting is going to be.

NOTE Confidence: 0.8674223

00:04:22.610 --> 00:04:24.330 Relevant Eno to the funding

NOTE Confidence: 0.8674223

00:04:24.330 --> 00:04:26.720 agencies you know for my research.

NOTE Confidence: 0.8674223

00:04:26.720 --> 00:04:31.340 So I did want to just throw that out there.

NOTE Confidence: 0.8674223

00:04:31.340 --> 00:04:33.596 OK, some things that I looked too and

NOTE Confidence: 0.8674223

00:04:33.596 --> 00:04:36.039 this is talking about my perspective.

NOTE Confidence: 0.8674223

00:04:36.040 --> 00:04:36.712 You know,

NOTE Confidence: 0.8674223

00:04:36.712 --> 00:04:38.728 to this work into this presentation.
NOTE Confidence: 0.8674223

00:04:38.730 --> 00:04:41.075 It is not as a data scientist.
NOTE Confidence: 0.8674223

00:04:41.080 --> 00:04:43.439 I don't have that kind of expertise.
NOTE Confidence: 0.8674223

00:04:43.440 --> 00:04:45.990 What I do is I have a team of data
NOTE Confidence: 0.8674223

00:04:46.073 --> 00:04:48.495 scientists and I tell them this is
NOTE Confidence: 0.8674223

00:04:48.495 --> 00:04:51.954 what I need and this is what I need
NOTE Confidence: 0.8674223

00:04:51.954 --> 00:04:54.070 from a clinician perspective to help
NOTE Confidence: 0.8674223

00:04:54.070 --> 00:04:56.270 me take care of a large volume of
NOTE Confidence: 0.8674223

00:04:56.342 --> 00:04:58.557 patients that are very different,
NOTE Confidence: 0.8674223

00:04:58.560 --> 00:05:01.760 very complex for a unique in many ways.
NOTE Confidence: 0.8674223

00:05:01.760 --> 00:05:03.060 And then my data scientists,
NOTE Confidence: 0.8674223

00:05:03.060 --> 00:05:05.636 you know, will go and try to.
NOTE Confidence: 0.8674223

00:05:05.640 --> 00:05:06.972 Start up your ****.
NOTE Confidence: 0.8674223

00:05:06.972 --> 00:05:08.970 You know that are necessary for
NOTE Confidence: 0.8674223

00:05:09.044 --> 00:05:10.549 me to achieve my goals.
NOTE Confidence: 0.8674223

00:05:10.550 --> 00:05:12.790 So you know I'm not going to

NOTE Confidence: 0.8674223

00:05:12.790 --> 00:05:14.800 spend too much time on this.

NOTE Confidence: 0.8674223

00:05:14.800 --> 00:05:17.131 Yeah, just a very quick background in

NOTE Confidence: 0.8674223

00:05:17.131 --> 00:05:19.810 regards to what is, you know, big data,

NOTE Confidence: 0.8674223

00:05:19.810 --> 00:05:22.970 you know you need to have a lot of it.

NOTE Confidence: 0.8674223

00:05:22.970 --> 00:05:24.926 It has to be diverse data.

NOTE Confidence: 0.8674223

00:05:24.930 --> 00:05:27.546 It has to be data that is actionable.

NOTE Confidence: 0.8674223

00:05:27.550 --> 00:05:28.854 Veracity is really critical.

NOTE Confidence: 0.8674223

00:05:28.854 --> 00:05:31.799 You know, we spend I spend so much effort.

NOTE Confidence: 0.8674223

00:05:31.800 --> 00:05:34.416 You know on data cleaning because you know,

NOTE Confidence: 0.8674223

00:05:34.420 --> 00:05:35.792 without good, proper, accurate.

NOTE Confidence: 0.8674223

00:05:35.792 --> 00:05:36.478 You know,

NOTE Confidence: 0.8674223

00:05:36.480 --> 00:05:37.116 I data,

NOTE Confidence: 0.8674223

00:05:37.116 --> 00:05:39.660 you know the outputs you know are just

NOTE Confidence: 0.8674223

00:05:39.738 --> 00:05:42.578 not accurate and they have to have value.

NOTE Confidence: 0.8674223

00:05:42.580 --> 00:05:44.680 And really the idea here is that

NOTE Confidence: 0.8674223

00:05:44.680 --> 00:05:47.505 we need to use big data to really
NOTE Confidence: 0.8674223

00:05:47.505 --> 00:05:49.355 help us make better decisions.
NOTE Confidence: 0.8674223

00:05:49.360 --> 00:05:51.394 So you are the objectives of
NOTE Confidence: 0.8674223

00:05:51.394 --> 00:05:52.750 you know this talk.
NOTE Confidence: 0.87111634

00:05:52.750 --> 00:05:55.137 The first is to discuss the different
NOTE Confidence: 0.87111634

00:05:55.137 --> 00:05:57.159 approaches to healthcare related big data.
NOTE Confidence: 0.87111634

00:05:57.160 --> 00:05:58.855 Secondly to talk about integration
NOTE Confidence: 0.87111634

00:05:58.855 --> 00:06:00.550 of data from various sources.
NOTE Confidence: 0.87111634

00:06:00.550 --> 00:06:02.512 How we go about doing this
NOTE Confidence: 0.87111634

00:06:02.512 --> 00:06:04.690 talking a little bit about data
NOTE Confidence: 0.87111634

00:06:04.690 --> 00:06:07.090 structure and so forth and Thirdly.
NOTE Confidence: 0.87111634

00:06:07.090 --> 00:06:09.322 What are the tools that we
NOTE Confidence: 0.87111634

00:06:09.322 --> 00:06:11.449 envision in our developing to make?
NOTE Confidence: 0.87111634

00:06:11.450 --> 00:06:14.346 Excuse me, big data useful for clinical care.
NOTE Confidence: 0.87111634

00:06:14.350 --> 00:06:16.765 So these are you know very well
NOTE Confidence: 0.87111634

00:06:16.765 --> 00:06:18.624 known challenges you know to

NOTE Confidence: 0.87111634

00:06:18.624 --> 00:06:20.519 the health care delivery system.

NOTE Confidence: 0.87111634

00:06:20.520 --> 00:06:23.054 You know it's reactive rather than proactive.

NOTE Confidence: 0.87111634

00:06:23.060 --> 00:06:24.512 It's intermittent. You know.

NOTE Confidence: 0.87111634

00:06:24.512 --> 00:06:26.690 If patient may see their doctor,

NOTE Confidence: 0.87111634

00:06:26.690 --> 00:06:28.868 you know once every three months,

NOTE Confidence: 0.87111634

00:06:28.870 --> 00:06:31.048 six months or even less frequently,

NOTE Confidence: 0.87111634

00:06:31.050 --> 00:06:33.114 you know it's less patient centric

NOTE Confidence: 0.87111634

00:06:33.114 --> 00:06:35.040 and more provider sent centric.

NOTE Confidence: 0.87111634

00:06:35.040 --> 00:06:36.552 You know we're incentivized

NOTE Confidence: 0.87111634

00:06:36.552 --> 00:06:38.064 by being more productive.

NOTE Confidence: 0.87111634

00:06:38.070 --> 00:06:39.654 Rather than, you know,

NOTE Confidence: 0.87111634

00:06:39.654 --> 00:06:42.446 trying to achieve good outcomes and when

NOTE Confidence: 0.87111634

00:06:42.446 --> 00:06:44.833 we do try to achieve good outcomes,

NOTE Confidence: 0.87111634

00:06:44.840 --> 00:06:47.630 you know that the system.

NOTE Confidence: 0.87111634

00:06:47.630 --> 00:06:49.022 You know, you know,

NOTE Confidence: 0.87111634

00:06:49.022 --> 00:06:50.414 really emphasizes you know.
NOTE Confidence: 0.87111634

00:06:50.420 --> 00:06:52.055 Achieving a good positive average
NOTE Confidence: 0.87111634

00:06:52.055 --> 00:06:53.363 population outcome rather than
NOTE Confidence: 0.87111634

00:06:53.363 --> 00:06:54.852 trying to personalize personalize
NOTE Confidence: 0.87111634

00:06:54.852 --> 00:06:56.697 outcomes for each individual patient.
NOTE Confidence: 0.87111634

00:06:56.700 --> 00:06:58.800 So this is an example of,
NOTE Confidence: 0.87111634

00:06:58.800 --> 00:07:01.236 you know, kind of what I mean.
NOTE Confidence: 0.87111634

00:07:01.240 --> 00:07:03.403 And this is a real life example
NOTE Confidence: 0.87111634

00:07:03.403 --> 00:07:05.779 from my own health care system,
NOTE Confidence: 0.87111634

00:07:05.780 --> 00:07:08.174 in which we I believe we take
NOTE Confidence: 0.87111634

00:07:08.174 --> 00:07:09.970 care of populations very well,
NOTE Confidence: 0.87111634

00:07:09.970 --> 00:07:12.754 but we don't do a very good job.
NOTE Confidence: 0.87111634

00:07:12.760 --> 00:07:14.500 I believe I've actually taken
NOTE Confidence: 0.87111634

00:07:14.500 --> 00:07:15.892 care of individual patients.
NOTE Confidence: 0.87111634

00:07:15.900 --> 00:07:18.000 So what happens here is.
NOTE Confidence: 0.87111634

00:07:18.000 --> 00:07:19.615 You know you have administrators

NOTE Confidence: 0.87111634

00:07:19.615 --> 00:07:21.860 who takes a look at our data,

NOTE Confidence: 0.87111634

00:07:21.860 --> 00:07:23.605 finds an Association with the

NOTE Confidence: 0.87111634

00:07:23.605 --> 00:07:25.350 use of hypnotic sleep medications

NOTE Confidence: 0.87111634

00:07:25.413 --> 00:07:26.688 with an increase in Ed.

NOTE Confidence: 0.87111634

00:07:26.690 --> 00:07:28.944 That's it's, you know, for the elderly.

NOTE Confidence: 0.87111634

00:07:28.950 --> 00:07:31.092 So they create these mandates and

NOTE Confidence: 0.87111634

00:07:31.092 --> 00:07:32.919 these strategies that trickle down

NOTE Confidence: 0.87111634

00:07:32.919 --> 00:07:34.959 to the provider level to reduce

NOTE Confidence: 0.87111634

00:07:34.959 --> 00:07:36.719 these prescription rate of these

NOTE Confidence: 0.87111634

00:07:36.719 --> 00:07:37.739 types of medications.

NOTE Confidence: 0.87111634

00:07:37.740 --> 00:07:40.106 By what ends up happening is that

NOTE Confidence: 0.87111634

00:07:40.106 --> 00:07:42.639 this makes my work more difficult.

NOTE Confidence: 0.87111634

00:07:42.640 --> 00:07:43.450 You know,

NOTE Confidence: 0.87111634

00:07:43.450 --> 00:07:45.880 it's just an additional metric that

NOTE Confidence: 0.87111634

00:07:45.880 --> 00:07:48.685 I have to that I have to meet and

NOTE Confidence: 0.87111634

00:07:48.685 --> 00:07:51.326 I end up having to take certain
NOTE Confidence: 0.87111634

00:07:51.326 --> 00:07:53.942 patients that are doing very well
NOTE Confidence: 0.87111634

00:07:53.950 --> 00:07:55.894 on these medications in order to
NOTE Confidence: 0.87111634

00:07:55.894 --> 00:07:57.982 in order to improve the population
NOTE Confidence: 0.87111634

00:07:57.982 --> 00:08:00.154 average outcome at the expense of
NOTE Confidence: 0.87111634

00:08:00.154 --> 00:08:03.000 some good outcomes for certain individuals.
NOTE Confidence: 0.87111634

00:08:03.000 --> 00:08:03.377 Rather,
NOTE Confidence: 0.87111634

00:08:03.377 --> 00:08:06.770 my approach to you know big data or not,
NOTE Confidence: 0.87111634

00:08:06.770 --> 00:08:07.976 my approach by.
NOTE Confidence: 0.87111634

00:08:07.976 --> 00:08:08.780 You know,
NOTE Confidence: 0.87111634

00:08:08.780 --> 00:08:10.608 I believe that philosophically,
NOTE Confidence: 0.87111634

00:08:10.608 --> 00:08:13.858 the approach to big data should be
NOTE Confidence: 0.87111634

00:08:13.858 --> 00:08:16.468 able to impact the grassroots provider.
NOTE Confidence: 0.87111634

00:08:16.470 --> 00:08:18.325 To really enhance individual physicians
NOTE Confidence: 0.87111634

00:08:18.325 --> 00:08:20.638 to care for individual patients to
NOTE Confidence: 0.87111634

00:08:20.638 --> 00:08:22.230 achieve good personalized outcomes.

NOTE Confidence: 0.87111634
00:08:22.230 --> 00:08:24.528 So here's a little bit left.
NOTE Confidence: 0.87111634
00:08:24.530 --> 00:08:25.682 A case study,
NOTE Confidence: 0.87111634
00:08:25.682 --> 00:08:28.370 and this is my health care system,
NOTE Confidence: 0.87111634
00:08:28.370 --> 00:08:29.044 Kaiser Permanente.
NOTE Confidence: 0.87111634
00:08:29.044 --> 00:08:29.718 And no,
NOTE Confidence: 0.87111634
00:08:29.718 --> 00:08:31.403 I really kind of supervised
NOTE Confidence: 0.87111634
00:08:31.403 --> 00:08:33.369 our Southern California region.
NOTE Confidence: 0.87111634
00:08:33.370 --> 00:08:36.058 We have a network of nine or
NOTE Confidence: 0.87111634
00:08:36.058 --> 00:08:37.210 ten sleep centers.
NOTE Confidence: 0.87111634
00:08:37.210 --> 00:08:39.508 You know, we are a busy,
NOTE Confidence: 0.87111634
00:08:39.510 --> 00:08:40.278 you know,
NOTE Confidence: 0.87111634
00:08:40.278 --> 00:08:42.198 center with basically about 2000
NOTE Confidence: 0.87111634
00:08:42.198 --> 00:08:43.350 referrals a month,
NOTE Confidence: 0.87111634
00:08:43.350 --> 00:08:45.562 and you know over on the right
NOTE Confidence: 0.87111634
00:08:45.562 --> 00:08:47.959 side are just some philosophical,
NOTE Confidence: 0.87111634

00:08:47.960 --> 00:08:49.920 foundational approaches to how we
NOTE Confidence: 0.87111634
00:08:49.920 --> 00:08:50.704 approach care.
NOTE Confidence: 0.87111634
00:08:50.710 --> 00:08:52.789 You know the first of which is.
NOTE Confidence: 0.87111634
00:08:52.790 --> 00:08:54.530 We certainly believe in launch to
NOTE Confidence: 0.87111634
00:08:54.530 --> 00:08:56.060 no end to end care,
NOTE Confidence: 0.8595856
00:08:56.060 --> 00:08:58.324 so we tend to be very good at
NOTE Confidence: 0.8595856
00:08:58.324 --> 00:09:00.211 the orange part, which is getting
NOTE Confidence: 0.8595856
00:09:00.211 --> 00:09:01.399 patients tested and diagnosed.
NOTE Confidence: 0.8595856
00:09:01.400 --> 00:09:03.362 You know we're even decent at
NOTE Confidence: 0.8595856
00:09:03.362 --> 00:09:04.670 initiating therapy and perhaps
NOTE Confidence: 0.8595856
00:09:04.730 --> 00:09:06.146 a little bit of follow up,
NOTE Confidence: 0.8595856
00:09:06.150 --> 00:09:07.782 but we're not very good at
NOTE Confidence: 0.8595856
00:09:07.782 --> 00:09:09.260 trying to emphasize that the
NOTE Confidence: 0.8595856
00:09:09.260 --> 00:09:10.905 care of patients actually starts.
NOTE Confidence: 0.8595856
00:09:10.910 --> 00:09:12.989 You know, before the patient is referred,
NOTE Confidence: 0.8595856
00:09:12.990 --> 00:09:14.470 even in coming in for,

NOTE Confidence: 0.8595856

00:09:14.470 --> 00:09:15.474 you know their test,

NOTE Confidence: 0.8595856

00:09:15.474 --> 00:09:17.345 and we also don't do a very

NOTE Confidence: 0.8595856

00:09:17.345 --> 00:09:19.133 good job of really trying to

NOTE Confidence: 0.8595856

00:09:19.133 --> 00:09:20.810 achieve good long term follow-up

NOTE Confidence: 0.8595856

00:09:20.810 --> 00:09:22.605 in achieving good long term.

NOTE Confidence: 0.8595856

00:09:22.610 --> 00:09:24.200 Now comes the second philosophical

NOTE Confidence: 0.8595856

00:09:24.200 --> 00:09:25.472 or foundational you know,

NOTE Confidence: 0.8595856

00:09:25.480 --> 00:09:27.208 approach to our delivery of care

NOTE Confidence: 0.8595856

00:09:27.208 --> 00:09:29.310 is really a team based approach.

NOTE Confidence: 0.8595856

00:09:29.310 --> 00:09:31.536 Even though we are very very busy,

NOTE Confidence: 0.8595856

00:09:31.540 --> 00:09:32.960 we have only really three

NOTE Confidence: 0.8595856

00:09:32.960 --> 00:09:35.523 positions and a lot of my time is

NOTE Confidence: 0.8595856

00:09:35.523 --> 00:09:37.328 actually taken up with research

NOTE Confidence: 0.8595856

00:09:37.328 --> 00:09:38.878 and administration and so forth.

NOTE Confidence: 0.8595856

00:09:38.880 --> 00:09:41.056 And so the way that we have to

NOTE Confidence: 0.8595856

00:09:41.056 --> 00:09:43.051 deliver care is through a team
NOTE Confidence: 0.8595856

00:09:43.051 --> 00:09:44.786 based approach with case managers
NOTE Confidence: 0.8595856

00:09:44.786 --> 00:09:46.850 and each of our case managers.
NOTE Confidence: 0.8595856

00:09:46.850 --> 00:09:48.803 You know they are part of a
NOTE Confidence: 0.8595856

00:09:48.803 --> 00:09:50.846 team that had their where their
NOTE Confidence: 0.8595856

00:09:50.846 --> 00:09:53.114 primary purview is one of these.
NOTE Confidence: 0.8595856

00:09:53.120 --> 00:09:54.444 Different types of services
NOTE Confidence: 0.8595856

00:09:54.444 --> 00:09:56.430 that we provide within our sleep
NOTE Confidence: 0.8595856

00:09:56.491 --> 00:09:58.255 center so we have an ambulatory,
NOTE Confidence: 0.8595856

00:09:58.260 --> 00:10:00.180 you know, testing team PSG team.
NOTE Confidence: 0.8595856

00:10:00.180 --> 00:10:03.476 We have a C pap follow up team.
NOTE Confidence: 0.8595856

00:10:03.480 --> 00:10:04.890 Alternative therapy team.
NOTE Confidence: 0.8595856

00:10:04.890 --> 00:10:07.710 We have a pediatric case management
NOTE Confidence: 0.8595856

00:10:07.710 --> 00:10:10.779 team and also a group arrested Tory
NOTE Confidence: 0.8595856

00:10:10.779 --> 00:10:12.917 therapist that provides long term
NOTE Confidence: 0.8595856

00:10:12.917 --> 00:10:15.563 lanja tude no care for our patients

NOTE Confidence: 0.8595856

00:10:15.563 --> 00:10:17.508 with chronic respiratory failure and

NOTE Confidence: 0.8595856

00:10:17.508 --> 00:10:20.821 so forth so you know it's a pretty

NOTE Confidence: 0.8595856

00:10:20.821 --> 00:10:24.020 diverse set of services that we provide,

NOTE Confidence: 0.8595856

00:10:24.020 --> 00:10:26.588 even some impatient types of services.

NOTE Confidence: 0.8595856

00:10:26.590 --> 00:10:27.121 Bedside,

NOTE Confidence: 0.8595856

00:10:27.121 --> 00:10:29.776 Poly sonography and so forth.

NOTE Confidence: 0.8595856

00:10:29.780 --> 00:10:32.018 So we recognize that you know,

NOTE Confidence: 0.8595856

00:10:32.020 --> 00:10:34.102 with this complexity of how we

NOTE Confidence: 0.8595856

00:10:34.102 --> 00:10:36.365 deliver care for a large volume

NOTE Confidence: 0.8595856

00:10:36.365 --> 00:10:38.759 of patients that we needed help,

NOTE Confidence: 0.8595856

00:10:38.760 --> 00:10:41.744 and we thought that you know big data.

NOTE Confidence: 0.8595856

00:10:41.750 --> 00:10:43.934 You know technology was going to

NOTE Confidence: 0.8595856

00:10:43.934 --> 00:10:46.609 be a key component of our strategy,

NOTE Confidence: 0.8595856

00:10:46.610 --> 00:10:48.724 and so we adopted a sleep data

NOTE Confidence: 0.8595856

00:10:48.724 --> 00:10:50.284 integration or sleep technology

NOTE Confidence: 0.8595856

00:10:50.284 --> 00:10:51.468 integration system.
NOTE Confidence: 0.8595856

00:10:51.470 --> 00:10:54.088 The system that we use is somewhere,
NOTE Confidence: 0.8595856

00:10:54.090 --> 00:10:56.484 and it's integrated about five or six
NOTE Confidence: 0.8595856

00:10:56.484 --> 00:10:58.950 of our diagnostic sleep study platforms,
NOTE Confidence: 0.8595856

00:10:58.950 --> 00:11:02.247 both PSG as well as HS 80.
NOTE Confidence: 0.8595856

00:11:02.250 --> 00:11:04.022 We've integrated, you know,
NOTE Confidence: 0.8595856

00:11:04.022 --> 00:11:05.794 the two main manufacturer,
NOTE Confidence: 0.8595856

00:11:05.800 --> 00:11:06.642 Pat manufacturer,
NOTE Confidence: 0.8595856

00:11:06.642 --> 00:11:09.168 you know platform so all the
NOTE Confidence: 0.8595856

00:11:09.168 --> 00:11:11.953 daily CPAP data is flowing into
NOTE Confidence: 0.8595856

00:11:11.953 --> 00:11:13.348 our integration system.
NOTE Confidence: 0.8595856

00:11:13.350 --> 00:11:15.570 We have integrated patient reported
NOTE Confidence: 0.8595856

00:11:15.570 --> 00:11:17.346 data from electronic questionnaires,
NOTE Confidence: 0.8595856

00:11:17.350 --> 00:11:19.672 and each of these patients have
NOTE Confidence: 0.8595856

00:11:19.672 --> 00:11:21.805 also had their entire electronic
NOTE Confidence: 0.8595856

00:11:21.805 --> 00:11:23.849 health record integrated together

NOTE Confidence: 0.8595856

00:11:23.849 --> 00:11:26.881 into a common data source to

NOTE Confidence: 0.8595856

00:11:26.881 --> 00:11:28.886 really provide a large volume.

NOTE Confidence: 0.8595856

00:11:28.890 --> 00:11:32.110 And what we believe to be a

NOTE Confidence: 0.8595856

00:11:32.110 --> 00:11:34.290 sufficiently diverse set of data.

NOTE Confidence: 0.8595856

00:11:34.290 --> 00:11:37.146 In which we can then make it actionable.

NOTE Confidence: 0.8595856

00:11:37.150 --> 00:11:38.930 We've also actually worked to

NOTE Confidence: 0.8595856

00:11:38.930 --> 00:11:40.354 integrate consumer Health Technologies,

NOTE Confidence: 0.8595856

00:11:40.360 --> 00:11:41.560 which includes Fitbit.

NOTE Confidence: 0.8595856

00:11:41.560 --> 00:11:43.560 We've integrated even something I

NOTE Confidence: 0.8595856

00:11:43.560 --> 00:11:46.429 think the the group at Yale is involved in,

NOTE Confidence: 0.8595856

00:11:46.430 --> 00:11:48.566 which is the body metrics ring.

NOTE Confidence: 0.8595856

00:11:48.570 --> 00:11:50.706 You know, oximetry and so forth,

NOTE Confidence: 0.8595856

00:11:50.710 --> 00:11:52.134 and there's no additional.

NOTE Confidence: 0.8595856

00:11:52.134 --> 00:11:55.706 You know, items that are on the road map for,

NOTE Confidence: 0.8595856

00:11:55.710 --> 00:11:56.661 you know, integration,

NOTE Confidence: 0.8595856

00:11:56.661 --> 00:11:58.880 or at least to be considered for
NOTE Confidence: 0.84237033

00:11:58.946 --> 00:12:01.776 integration. So I wanted to share it.
NOTE Confidence: 0.84237033

00:12:01.780 --> 00:12:04.048 Maybe you know, a couple of
NOTE Confidence: 0.84237033

00:12:04.048 --> 00:12:05.840 concrete examples in regards to.
NOTE Confidence: 0.84237033

00:12:05.840 --> 00:12:07.835 You know just the power of having
NOTE Confidence: 0.84237033

00:12:07.835 --> 00:12:09.828 you know data integration in a
NOTE Confidence: 0.84237033

00:12:09.828 --> 00:12:11.618 automated fashion that includes all
NOTE Confidence: 0.84237033

00:12:11.618 --> 00:12:13.507 of the patients that essentially
NOTE Confidence: 0.84237033

00:12:13.507 --> 00:12:16.097 come into one of our sleep centers.
NOTE Confidence: 0.84237033

00:12:16.100 --> 00:12:17.126 They immediately become,
NOTE Confidence: 0.84237033

00:12:17.126 --> 00:12:18.833 you know, a data point.
NOTE Confidence: 0.84237033

00:12:18.833 --> 00:12:20.874 So for example, when Covid hit,
NOTE Confidence: 0.84237033

00:12:20.874 --> 00:12:22.902 we were able to pivot actually
NOTE Confidence: 0.84237033

00:12:22.902 --> 00:12:24.651 very quickly to say, hey,
NOTE Confidence: 0.84237033

00:12:24.651 --> 00:12:27.038 we've got this really robust data set.
NOTE Confidence: 0.84237033

00:12:27.040 --> 00:12:29.848 Let's take a look at covid outcomes related

NOTE Confidence: 0.84237033

00:12:29.848 --> 00:12:32.860 to sleep apnea and where you can see here.

NOTE Confidence: 0.84237033

00:12:32.860 --> 00:12:34.625 And this is statistically significant

NOTE Confidence: 0.84237033

00:12:34.625 --> 00:12:36.390 that patients who have untreated.

NOTE Confidence: 0.84237033

00:12:36.390 --> 00:12:38.750 You know, sleep apnea.

NOTE Confidence: 0.84237033

00:12:38.750 --> 00:12:41.074 You have a higher risk of getting

NOTE Confidence: 0.84237033

00:12:41.074 --> 00:12:42.968 covid compared to those with

NOTE Confidence: 0.84237033

00:12:42.968 --> 00:12:44.620 no obstructive sleep apnea,

NOTE Confidence: 0.84237033

00:12:44.620 --> 00:12:46.816 and as the pap appearance increases,

NOTE Confidence: 0.84237033

00:12:46.820 --> 00:12:49.028 their risk actually will then decrease.

NOTE Confidence: 0.84237033

00:12:49.030 --> 00:12:51.662 We also have found that as a sleep

NOTE Confidence: 0.84237033

00:12:51.662 --> 00:12:53.796 apnea severity increases, you know.

NOTE Confidence: 0.84237033

00:12:53.796 --> 00:12:54.900 So, for example,

NOTE Confidence: 0.84237033

00:12:54.900 --> 00:12:56.336 severe obstructive sleep apnea,

NOTE Confidence: 0.84237033

00:12:56.336 --> 00:12:59.300 how it compares to to mild sleep apnea,

NOTE Confidence: 0.84237033

00:12:59.300 --> 00:13:01.220 that severe sleep apnea has the

NOTE Confidence: 0.84237033

00:13:01.220 --> 00:13:03.010 highest risk for patients to
NOTE Confidence: 0.84237033

00:13:03.010 --> 00:13:04.806 actually contract COVID-19 infection.
NOTE Confidence: 0.84237033

00:13:04.810 --> 00:13:07.302 Here's a forest plot which actually shows
NOTE Confidence: 0.84237033

00:13:07.302 --> 00:13:10.218 after you know all the various adjustments.
NOTE Confidence: 0.84237033

00:13:10.220 --> 00:13:11.690 Bird characteristics and so forth.
NOTE Confidence: 0.84237033

00:13:11.690 --> 00:13:13.466 You know that you know there's
NOTE Confidence: 0.84237033

00:13:13.466 --> 00:13:15.220 a number of different you know,
NOTE Confidence: 0.84237033

00:13:15.220 --> 00:13:16.650 patient characteristics that are associated
NOTE Confidence: 0.84237033

00:13:16.650 --> 00:13:18.750 with a higher risk of getting kovid,
NOTE Confidence: 0.84237033

00:13:18.750 --> 00:13:20.358 and you can see here that
NOTE Confidence: 0.84237033

00:13:20.358 --> 00:13:21.980 those who are well treated,
NOTE Confidence: 0.84237033

00:13:21.980 --> 00:13:23.877 meaning they're using their path at least
NOTE Confidence: 0.84237033

00:13:23.877 --> 00:13:26.388 4 hours a day during the pandemic period,
NOTE Confidence: 0.84237033

00:13:26.390 --> 00:13:29.120 have a lower risk of getting coded.
NOTE Confidence: 0.84237033

00:13:29.120 --> 00:13:32.728 Interesting Lee lower age.
NOTE Confidence: 0.84237033

00:13:32.730 --> 00:13:37.866 Also has a reduced risk of getting covid.

NOTE Confidence: 0.84237033

00:13:37.870 --> 00:13:39.920 We found certainly racial disparities.

NOTE Confidence: 0.84237033

00:13:39.920 --> 00:13:42.986 You know, Blacks and Hispanics have a

NOTE Confidence: 0.84237033

00:13:42.986 --> 00:13:46.499 higher risk of getting covid higher BMI.

NOTE Confidence: 0.84237033

00:13:46.500 --> 00:13:47.580 More existing core abilities,

NOTE Confidence: 0.84237033

00:13:47.580 --> 00:13:49.693 all of which were both of these

NOTE Confidence: 0.84237033

00:13:49.693 --> 00:13:51.019 conditions or characteristics,

NOTE Confidence: 0.84237033

00:13:51.020 --> 00:13:52.640 increases risk of getting covid,

NOTE Confidence: 0.84237033

00:13:52.640 --> 00:13:54.894 so there's a lot more to this,

NOTE Confidence: 0.84237033

00:13:54.900 --> 00:13:57.476 but I just wanted to share with you.

NOTE Confidence: 0.84237033

00:13:57.480 --> 00:13:59.744 You know, the power of, you know,

NOTE Confidence: 0.84237033

00:13:59.744 --> 00:14:01.354 being able to collect data,

NOTE Confidence: 0.84237033

00:14:01.360 --> 00:14:02.824 big data, you know,

NOTE Confidence: 0.84237033

00:14:02.824 --> 00:14:05.020 through a real world clinical environment

NOTE Confidence: 0.84237033

00:14:05.085 --> 00:14:07.389 and and how that data can be quickly

NOTE Confidence: 0.84237033

00:14:07.389 --> 00:14:09.109 utilized to really be able to,

NOTE Confidence: 0.84237033

00:14:09.110 --> 00:14:10.366 you know, you know,
NOTE Confidence: 0.84237033

00:14:10.366 --> 00:14:12.660 for research as well as you know,
NOTE Confidence: 0.84237033

00:14:12.660 --> 00:14:14.280 we believe for clinical purposes.
NOTE Confidence: 0.84237033

00:14:14.280 --> 00:14:17.240 So now that we have all this data.
NOTE Confidence: 0.84237033

00:14:17.240 --> 00:14:18.164 I'm gonna pivot,
NOTE Confidence: 0.84237033

00:14:18.164 --> 00:14:18.780 you know,
NOTE Confidence: 0.84237033

00:14:18.780 --> 00:14:20.610 to talking about big Data Tools
NOTE Confidence: 0.84237033

00:14:20.610 --> 00:14:22.513 and this is really important and
NOTE Confidence: 0.84237033

00:14:22.513 --> 00:14:24.690 really a large you know portion of
NOTE Confidence: 0.84237033

00:14:24.690 --> 00:14:26.814 my efforts because if we have big
NOTE Confidence: 0.84237033

00:14:26.814 --> 00:14:28.908 data you know and we don't have
NOTE Confidence: 0.84237033

00:14:28.908 --> 00:14:30.744 the tools to make it actionable.
NOTE Confidence: 0.84237033

00:14:30.750 --> 00:14:32.675 We just end up drowning in data
NOTE Confidence: 0.84237033

00:14:32.675 --> 00:14:34.903 and we and we get paralyzed because
NOTE Confidence: 0.84237033

00:14:34.903 --> 00:14:36.573 we have so much data.
NOTE Confidence: 0.84237033

00:14:36.580 --> 00:14:39.036 We don't know what to do with it.

NOTE Confidence: 0.84237033

00:14:39.040 --> 00:14:41.077 So the four that I'm going to

NOTE Confidence: 0.84237033

00:14:41.077 --> 00:14:42.720 mention here are number one,

NOTE Confidence: 0.84237033

00:14:42.720 --> 00:14:43.948 automation and more specifically

NOTE Confidence: 0.84237033

00:14:43.948 --> 00:14:45.176 to improve patient engagement,

NOTE Confidence: 0.84237033

00:14:45.180 --> 00:14:46.464 #2 population management tools,

NOTE Confidence: 0.84237033

00:14:46.464 --> 00:14:47.748 #3 remote patient monitoring.

NOTE Confidence: 0.84237033

00:14:47.750 --> 00:14:49.066 And #4 artificial intelligence.

NOTE Confidence: 0.84237033

00:14:49.066 --> 00:14:51.810 So what do I mean by automation?

NOTE Confidence: 0.84237033

00:14:51.810 --> 00:14:54.239 I mean there is a zillion different

NOTE Confidence: 0.84237033

00:14:54.239 --> 00:14:55.280 examples of how

NOTE Confidence: 0.8390255

00:14:55.354 --> 00:14:58.077 we can and already are using automation,

NOTE Confidence: 0.8390255

00:14:58.080 --> 00:15:00.108 but this is just one example

NOTE Confidence: 0.8390255

00:15:00.108 --> 00:15:02.140 that I wanted to present.

NOTE Confidence: 0.8390255

00:15:02.140 --> 00:15:05.052 This is a a diagram that you know

NOTE Confidence: 0.8390255

00:15:05.052 --> 00:15:07.680 reveals kind of a manual process of,

NOTE Confidence: 0.8390255

00:15:07.680 --> 00:15:10.400 you know, you know RPM.
NOTE Confidence: 0.8390255

00:15:10.400 --> 00:15:11.312 Remote patient monitoring.
NOTE Confidence: 0.8390255

00:15:11.312 --> 00:15:14.070 The CPAP data goes to the cloud wirelessly.
NOTE Confidence: 0.8390255

00:15:14.070 --> 00:15:15.740 You have a provider who
NOTE Confidence: 0.8390255

00:15:15.740 --> 00:15:17.076 reviews the data manually.
NOTE Confidence: 0.8390255

00:15:17.080 --> 00:15:19.084 If the patient is not doing
NOTE Confidence: 0.8390255

00:15:19.084 --> 00:15:20.420 well on half therapee,
NOTE Confidence: 0.8390255

00:15:20.420 --> 00:15:22.418 then will initiate and manual encounter.
NOTE Confidence: 0.8390255

00:15:22.420 --> 00:15:23.088 This, however,
NOTE Confidence: 0.8390255

00:15:23.088 --> 00:15:25.426 is a very very labor intensive process,
NOTE Confidence: 0.8390255

00:15:25.430 --> 00:15:28.070 and so we look to see whether we
NOTE Confidence: 0.8390255

00:15:28.070 --> 00:15:30.125 could automate this and so the
NOTE Confidence: 0.8390255

00:15:30.125 --> 00:15:32.105 data still goes into the cloud.
NOTE Confidence: 0.8390255

00:15:32.110 --> 00:15:34.055 We apply these automated algorithms
NOTE Confidence: 0.8390255

00:15:34.055 --> 00:15:36.000 with customizable thresholds and you
NOTE Confidence: 0.8390255

00:15:36.063 --> 00:15:38.119 know if the patient is not doing well.

NOTE Confidence: 0.8390255
00:15:38.120 --> 00:15:38.822 For example,
NOTE Confidence: 0.8390255
00:15:38.822 --> 00:15:40.577 three nights in a row.
NOTE Confidence: 0.8390255
00:15:40.580 --> 00:15:42.686 They get a text message and
NOTE Confidence: 0.8390255
00:15:42.686 --> 00:15:44.583 completely bypasses any kind of
NOTE Confidence: 0.8390255
00:15:44.583 --> 00:15:46.287 manual intervention unless necessary
NOTE Confidence: 0.8390255
00:15:46.287 --> 00:15:48.417 by the sleep center provider
NOTE Confidence: 0.8390255
00:15:48.487 --> 00:15:50.682 and we further personalize this
NOTE Confidence: 0.8390255
00:15:50.682 --> 00:15:52.438 based on other characteristics,
NOTE Confidence: 0.8390255
00:15:52.440 --> 00:15:53.396 for example,
NOTE Confidence: 0.8390255
00:15:53.396 --> 00:15:55.308 whether their cardiovascular risk
NOTE Confidence: 0.8390255
00:15:55.308 --> 00:15:58.047 score is elevated or whether their
NOTE Confidence: 0.8390255
00:15:58.047 --> 00:16:00.693 effort is effort is is elevated and
NOTE Confidence: 0.8390255
00:16:00.693 --> 00:16:03.279 you know a different set of messages
NOTE Confidence: 0.8390255
00:16:03.279 --> 00:16:05.907 you know can then be tailored and
NOTE Confidence: 0.8390255
00:16:05.907 --> 00:16:08.700 delivered to the patient to really try
NOTE Confidence: 0.8390255

00:16:08.774 --> 00:16:11.360 to address you know their specific.
NOTE Confidence: 0.8390255

00:16:11.360 --> 00:16:14.249 Risk profile and so we did do a study.
NOTE Confidence: 0.8390255

00:16:14.250 --> 00:16:16.730 This is a Tele OSA trial that was
NOTE Confidence: 0.8390255

00:16:16.730 --> 00:16:18.741 published in the Blue Journal about
NOTE Confidence: 0.8390255

00:16:18.741 --> 00:16:21.408 two or three years ago and not going
NOTE Confidence: 0.8390255

00:16:21.408 --> 00:16:23.557 to spend too much time on this.
NOTE Confidence: 0.8390255

00:16:23.560 --> 00:16:25.504 But you can see here and I'll just
NOTE Confidence: 0.8390255

00:16:25.504 --> 00:16:27.388 have you follow this line above
NOTE Confidence: 0.8390255

00:16:27.388 --> 00:16:29.058 that those who receive messaging
NOTE Confidence: 0.8390255

00:16:29.058 --> 00:16:30.943 and continue to receive messaging
NOTE Confidence: 0.8390255

00:16:30.943 --> 00:16:33.181 through this dotted line compared to
NOTE Confidence: 0.8390255

00:16:33.190 --> 00:16:35.275 those who don't receive messaging
NOTE Confidence: 0.8390255

00:16:35.275 --> 00:16:37.360 have significantly improved Pap use.
NOTE Confidence: 0.8390255

00:16:37.360 --> 00:16:40.168 You know, we just this very simple feedback,
NOTE Confidence: 0.8390255

00:16:40.170 --> 00:16:40.946 patient engagement,
NOTE Confidence: 0.8390255

00:16:40.946 --> 00:16:43.274 type of you know mechanism without

NOTE Confidence: 0.8390255
00:16:43.274 --> 00:16:44.764 any additional provider intervention
NOTE Confidence: 0.8390255
00:16:44.764 --> 00:16:47.046 and so we determined this to be
NOTE Confidence: 0.8390255
00:16:47.046 --> 00:16:49.390 what we thought was a very cost
NOTE Confidence: 0.8390255
00:16:49.390 --> 00:16:50.694 effective type of intervention.
NOTE Confidence: 0.8390255
00:16:50.700 --> 00:16:52.455 So there's a zillion different
NOTE Confidence: 0.8390255
00:16:52.455 --> 00:16:53.508 examples of automation,
NOTE Confidence: 0.8390255
00:16:53.510 --> 00:16:56.310 but wanted to move on to tool #2.
NOTE Confidence: 0.8390255
00:16:56.310 --> 00:16:57.598 How do we use?
NOTE Confidence: 0.8390255
00:16:57.598 --> 00:17:00.698 You know what kind of tools can we use
NOTE Confidence: 0.8390255
00:17:00.698 --> 00:17:03.225 to make big data more manageable and
NOTE Confidence: 0.8390255
00:17:03.304 --> 00:17:06.128 so the second tool that I wanted to
NOTE Confidence: 0.8390255
00:17:06.128 --> 00:17:08.058 present is population management dashboards.
NOTE Confidence: 0.8390255
00:17:08.058 --> 00:17:12.089 And this is a way for us to organize our,
NOTE Confidence: 0.8390255
00:17:12.090 --> 00:17:12.836 you know,
NOTE Confidence: 0.8390255
00:17:12.836 --> 00:17:15.074 Brazilian patients you know with Brazilian,
NOTE Confidence: 0.8390255

00:17:15.080 --> 00:17:16.855 you know pieces of different
NOTE Confidence: 0.8390255

00:17:16.855 --> 00:17:19.094 information and what it does is
NOTE Confidence: 0.8390255

00:17:19.094 --> 00:17:20.690 this dashboard organizes you,
NOTE Confidence: 0.8390255

00:17:20.690 --> 00:17:22.810 know for us the different
NOTE Confidence: 0.8390255

00:17:22.810 --> 00:17:24.082 characteristics identifies those
NOTE Confidence: 0.8390255

00:17:24.082 --> 00:17:26.668 who are risk and tells us which
NOTE Confidence: 0.8390255

00:17:26.668 --> 00:17:28.920 patients need to be followed up with.
NOTE Confidence: 0.8390255

00:17:28.920 --> 00:17:29.928 And, you know,
NOTE Confidence: 0.8390255

00:17:29.928 --> 00:17:33.182 here's a kind of an example or a diagram
NOTE Confidence: 0.8390255

00:17:33.182 --> 00:17:35.648 of what our follow-up protocol is.
NOTE Confidence: 0.8390255

00:17:35.650 --> 00:17:37.900 C Pap is prescribed over here.
NOTE Confidence: 0.8390255

00:17:37.900 --> 00:17:39.448 On the left side,
NOTE Confidence: 0.8390255

00:17:39.448 --> 00:17:40.996 and we have various.
NOTE Confidence: 0.8390255

00:17:41.000 --> 00:17:42.525 Checkpoints get them each patient
NOTE Confidence: 0.8390255

00:17:42.525 --> 00:17:44.050 meets certain kinds of checkpoints.
NOTE Confidence: 0.8390255

00:17:44.050 --> 00:17:46.386 They will pop up onto our task list

NOTE Confidence: 0.8390255
00:17:46.386 --> 00:17:48.927 when they are determined to be at risk,
NOTE Confidence: 0.8390255
00:17:48.930 --> 00:17:50.760 and then we have a different
NOTE Confidence: 0.8390255
00:17:50.760 --> 00:17:52.589 set of algorithms for the post.
NOTE Confidence: 0.8390255
00:17:52.590 --> 00:17:53.202 You know,
NOTE Confidence: 0.8390255
00:17:53.202 --> 00:17:54.120 three month period.
NOTE Confidence: 0.8390255
00:17:54.120 --> 00:17:57.090 So this is a way you know for the system
NOTE Confidence: 0.8506909
00:17:57.171 --> 00:18:00.520 to tell us who do you need to follow up with,
NOTE Confidence: 0.8506909
00:18:00.520 --> 00:18:02.431 because you know these are the patients
NOTE Confidence: 0.8506909
00:18:02.431 --> 00:18:04.647 who are at risk while allowing us
NOTE Confidence: 0.8506909
00:18:04.647 --> 00:18:06.317 to manage patients by exception.
NOTE Confidence: 0.8506909
00:18:06.320 --> 00:18:08.760 So for those patients who are doing OK,
NOTE Confidence: 0.8506909
00:18:08.760 --> 00:18:11.190 we just passively follow them and.
NOTE Confidence: 0.8506909
00:18:11.190 --> 00:18:13.710 And do not initiate an encounter now.
NOTE Confidence: 0.8506909
00:18:13.710 --> 00:18:15.886 One of the things that we do is
NOTE Confidence: 0.8506909
00:18:15.886 --> 00:18:17.449 we've created different algorithms
NOTE Confidence: 0.8506909

00:18:17.449 --> 00:18:19.829 for different cohorts of patients.
NOTE Confidence: 0.8506909

00:18:19.830 --> 00:18:21.213 So for example,
NOTE Confidence: 0.8506909

00:18:21.213 --> 00:18:23.518 those who are commercial drivers.
NOTE Confidence: 0.8506909

00:18:23.520 --> 00:18:26.016 You know, have a very different
NOTE Confidence: 0.8506909

00:18:26.016 --> 00:18:28.120 instead of algorithms you know.
NOTE Confidence: 0.8506909

00:18:28.120 --> 00:18:30.339 And even to the point where we've
NOTE Confidence: 0.8506909

00:18:30.339 --> 00:18:32.965 created a an automated process where
NOTE Confidence: 0.8506909

00:18:32.965 --> 00:18:35.635 commercial drivers every three months,
NOTE Confidence: 0.8506909

00:18:35.640 --> 00:18:38.384 they have A and they get an email
NOTE Confidence: 0.8506909

00:18:38.384 --> 00:18:40.695 with their three month package
NOTE Confidence: 0.8506909

00:18:40.695 --> 00:18:42.747 here and report delivered,
NOTE Confidence: 0.8506909

00:18:42.750 --> 00:18:44.790 and it's completely automatic,
NOTE Confidence: 0.8506909

00:18:44.790 --> 00:18:46.320 it's completely automated.
NOTE Confidence: 0.8506909

00:18:46.320 --> 00:18:48.552 So they can take this to their occmed
NOTE Confidence: 0.8506909

00:18:48.552 --> 00:18:50.856 physician and to be able to continue driving,
NOTE Confidence: 0.8506909

00:18:50.860 --> 00:18:53.191 and so you know, we've created a

NOTE Confidence: 0.8506909

00:18:53.191 --> 00:18:55.760 system here that is fully customizable.

NOTE Confidence: 0.8506909

00:18:55.760 --> 00:18:58.778 And you can develop different algorithms

NOTE Confidence: 0.8506909

00:18:58.778 --> 00:19:01.570 for different cohorts of patients.

NOTE Confidence: 0.8506909

00:19:01.570 --> 00:19:04.210 Uhm?

NOTE Confidence: 0.8506909

00:19:04.210 --> 00:19:06.905 You know we did a time motion,

NOTE Confidence: 0.8506909

00:19:06.910 --> 00:19:09.605 you know, study where we looked at,

NOTE Confidence: 0.8506909

00:19:09.610 --> 00:19:10.302 you know,

NOTE Confidence: 0.8506909

00:19:10.302 --> 00:19:12.032 trying to do population management

NOTE Confidence: 0.8506909

00:19:12.032 --> 00:19:13.946 using a manual process universe

NOTE Confidence: 0.8506909

00:19:13.946 --> 00:19:15.971 versus this more automated and

NOTE Confidence: 0.8506909

00:19:15.971 --> 00:19:17.720 even semi intelligent process.

NOTE Confidence: 0.8506909

00:19:17.720 --> 00:19:21.203 And we were able to find that there was

NOTE Confidence: 0.8506909

00:19:21.203 --> 00:19:24.090 a 83% improvement in efficiency by being

NOTE Confidence: 0.8506909

00:19:24.090 --> 00:19:26.732 able to utilizes system that enhances

NOTE Confidence: 0.8506909

00:19:26.732 --> 00:19:29.854 our ability to manage patients by exception.

NOTE Confidence: 0.8506909

00:19:29.860 --> 00:19:33.082 We do have a trial that is incorporating a
NOTE Confidence: 0.8506909

00:19:33.082 --> 00:19:36.554 lot of things that I you know talked about.
NOTE Confidence: 0.8506909

00:19:36.560 --> 00:19:37.312 This is,
NOTE Confidence: 0.8506909

00:19:37.312 --> 00:19:38.064 you know,
NOTE Confidence: 0.8506909

00:19:38.064 --> 00:19:41.019 we're hoping to submit this to the NIH,
NOTE Confidence: 0.8506909

00:19:41.020 --> 00:19:43.617 a collaboration between US and and Upenn.
NOTE Confidence: 0.8506909

00:19:43.620 --> 00:19:45.360 We're developing A3 arm randomized
NOTE Confidence: 0.8506909

00:19:45.360 --> 00:19:47.958 control trial in which we are looking
NOTE Confidence: 0.8506909

00:19:47.958 --> 00:19:49.948 to see whether automated management,
NOTE Confidence: 0.8506909

00:19:49.950 --> 00:19:52.080 which is an enhanced version of
NOTE Confidence: 0.8506909

00:19:52.080 --> 00:19:54.726 the Tele OSA study that has a
NOTE Confidence: 0.8506909

00:19:54.726 --> 00:19:56.636 new wants delivery of education,
NOTE Confidence: 0.8506909

00:19:56.640 --> 00:19:57.825 engagement, motivational enhancement,
NOTE Confidence: 0.8506909

00:19:57.825 --> 00:20:01.180 and even CBT over two years is going to.
NOTE Confidence: 0.8506909

00:20:01.180 --> 00:20:02.652 Improve long term adherence,
NOTE Confidence: 0.8506909

00:20:02.652 --> 00:20:04.634 you know, compared to usual care,

NOTE Confidence: 0.8506909

00:20:04.634 --> 00:20:07.431 and then the third arm is combining this

NOTE Confidence: 0.8506909

00:20:07.431 --> 00:20:10.005 automated management as well as Savior.

NOTE Confidence: 0.8506909

00:20:10.010 --> 00:20:11.850 A nuanced case management strategy,

NOTE Confidence: 0.8506909

00:20:11.850 --> 00:20:14.356 whether that also is going to be

NOTE Confidence: 0.8506909

00:20:14.356 --> 00:20:16.997 a superior to usual care in both,

NOTE Confidence: 0.8506909

00:20:17.000 --> 00:20:19.208 will see how the outcomes compared

NOTE Confidence: 0.8506909

00:20:19.208 --> 00:20:20.312 to automated management.

NOTE Confidence: 0.8506909

00:20:20.320 --> 00:20:22.516 So that's trial that is in.

NOTE Confidence: 0.8506909

00:20:22.520 --> 00:20:24.728 You know, that is in development,

NOTE Confidence: 0.8506909

00:20:24.730 --> 00:20:27.674 but kind of incorporates the first two tools.

NOTE Confidence: 0.8506909

00:20:27.680 --> 00:20:30.837 The big data tools that I presented.

NOTE Confidence: 0.8506909

00:20:30.840 --> 00:20:32.916 Tool #3 is remote patient monitoring,

NOTE Confidence: 0.8506909

00:20:32.920 --> 00:20:35.002 so you know we've integrated sleep

NOTE Confidence: 0.8506909

00:20:35.002 --> 00:20:36.720 activity trackers near those data.

NOTE Confidence: 0.8506909

00:20:36.720 --> 00:20:38.806 Now that even suggests that you know

NOTE Confidence: 0.8506909

00:20:38.806 --> 00:20:41.220 Fitbit is more accurate than actigraphy,
NOTE Confidence: 0.8506909

00:20:41.220 --> 00:20:43.656 and so we've you know pivoted and
NOTE Confidence: 0.8506909

00:20:43.656 --> 00:20:45.738 switched over to Fitbit as our
NOTE Confidence: 0.8506909

00:20:45.738 --> 00:20:47.978 as kind of our primary method of
NOTE Confidence: 0.8506909

00:20:48.056 --> 00:20:49.866 being able to track sleep.
NOTE Confidence: 0.8506909

00:20:49.870 --> 00:20:52.285 If we do need some type of
NOTE Confidence: 0.8506909

00:20:52.285 --> 00:20:52.975 actigraphy information,
NOTE Confidence: 0.8506909

00:20:52.980 --> 00:20:55.409 and this is the body metrics ring,
NOTE Confidence: 0.8506909

00:20:55.410 --> 00:20:58.296 which is a oximetry ring and
NOTE Confidence: 0.8506909

00:20:58.296 --> 00:21:00.220 we've been using this.
NOTE Confidence: 0.8506909

00:21:00.220 --> 00:21:01.864 Even during covid you know tracking
NOTE Confidence: 0.8506909

00:21:01.864 --> 00:21:03.282 our patients with chronic respiratory
NOTE Confidence: 0.8506909

00:21:03.282 --> 00:21:04.926 failure and being able to provide
NOTE Confidence: 0.8506909

00:21:04.926 --> 00:21:06.470 remote care for these patients.
NOTE Confidence: 0.8442109

00:21:06.470 --> 00:21:09.017 You know, I even had a couple of friends.
NOTE Confidence: 0.8442109

00:21:09.020 --> 00:21:11.513 You know who end up getting kovid and I

NOTE Confidence: 0.8442109

00:21:11.513 --> 00:21:14.065 gave them this oximetry ring and for two

NOTE Confidence: 0.8442109

00:21:14.065 --> 00:21:16.555 weeks you know I logged on every day to

NOTE Confidence: 0.8442109

00:21:16.555 --> 00:21:19.328 take a look at their data and to make sure

NOTE Confidence: 0.8442109

00:21:19.328 --> 00:21:21.716 that I didn't need to end up, you know,

NOTE Confidence: 0.8442109

00:21:21.716 --> 00:21:23.382 escalating care you know for my friends

NOTE Confidence: 0.8442109

00:21:23.382 --> 00:21:25.482 we can embed that information you know

NOTE Confidence: 0.8442109

00:21:25.482 --> 00:21:27.200 into our population management dashboard.

NOTE Confidence: 0.8442109

00:21:27.200 --> 00:21:29.188 You know we can superimpose path usage

NOTE Confidence: 0.8442109

00:21:29.188 --> 00:21:31.192 with sleep durations, so now we not

NOTE Confidence: 0.8442109

00:21:31.192 --> 00:21:33.630 only know how much they are sleeping.

NOTE Confidence: 0.8442109

00:21:33.630 --> 00:21:35.737 But we can actually look at the

NOTE Confidence: 0.8442109

00:21:35.737 --> 00:21:37.792 relative amount of PAP usage compared

NOTE Confidence: 0.8442109

00:21:37.792 --> 00:21:39.240 to their overall sleep,

NOTE Confidence: 0.8442109

00:21:39.240 --> 00:21:41.715 you know and so forth, so you know.

NOTE Confidence: 0.8442109

00:21:41.715 --> 00:21:43.640 Again, being able to incorporate this into

NOTE Confidence: 0.8442109

00:21:43.690 --> 00:21:45.840 the patients population management profile,

NOTE Confidence: 0.8442109

00:21:45.840 --> 00:21:48.196 you know it really organizes, you know,

NOTE Confidence: 0.8442109

00:21:48.196 --> 00:21:50.314 the display unit of information for

NOTE Confidence: 0.8442109

00:21:50.314 --> 00:21:53.100 us in a way that you know makes it,

NOTE Confidence: 0.8442109

00:21:53.100 --> 00:21:56.346 and you know, hopefully more efficient.

NOTE Confidence: 0.8442109

00:21:56.350 --> 00:21:57.890 In terms of, you know,

NOTE Confidence: 0.8442109

00:21:57.890 --> 00:21:59.726 other ways that we're you know.

NOTE Confidence: 0.8442109

00:21:59.730 --> 00:22:01.879 Looking at the use of RPM in,

NOTE Confidence: 0.8442109

00:22:01.880 --> 00:22:04.128 you know this is a study that is

NOTE Confidence: 0.8442109

00:22:04.128 --> 00:22:05.771 in development where we're going

NOTE Confidence: 0.8442109

00:22:05.771 --> 00:22:06.788 to be combining.

NOTE Confidence: 0.8442109

00:22:06.790 --> 00:22:07.404 You know,

NOTE Confidence: 0.8442109

00:22:07.404 --> 00:22:09.860 this is just a proof of concept here,

NOTE Confidence: 0.8442109

00:22:09.860 --> 00:22:12.578 but you know combining path usage.

NOTE Confidence: 0.8442109

00:22:12.580 --> 00:22:15.860 You know, use longitudinally overtime.

NOTE Confidence: 0.8442109

00:22:15.860 --> 00:22:18.165 In comparing it directly with

NOTE Confidence: 0.8442109

00:22:18.165 --> 00:22:20.009 simultaneous integration of blood

NOTE Confidence: 0.8442109

00:22:20.009 --> 00:22:22.412 pressure monitoring and you can see in

NOTE Confidence: 0.8442109

00:22:22.412 --> 00:22:25.079 this example as the pack usage decreases,

NOTE Confidence: 0.8442109

00:22:25.080 --> 00:22:27.324 the blood pressure starts to trend

NOTE Confidence: 0.8442109

00:22:27.324 --> 00:22:29.311 upwards and that creates more

NOTE Confidence: 0.8442109

00:22:29.311 --> 00:22:31.406 actionable and perhaps more engaging

NOTE Confidence: 0.8442109

00:22:31.406 --> 00:22:33.910 types of information for the patient.

NOTE Confidence: 0.8442109

00:22:33.910 --> 00:22:35.558 With the, you know,

NOTE Confidence: 0.8442109

00:22:35.558 --> 00:22:37.618 effective really trying to directly

NOTE Confidence: 0.8442109

00:22:37.618 --> 00:22:39.358 improve hypertension management over

NOTE Confidence: 0.8442109

00:22:39.358 --> 00:22:42.291 on the right side is an integration

NOTE Confidence: 0.8442109

00:22:42.358 --> 00:22:43.928 of various types of RPM.

NOTE Confidence: 0.8442109

00:22:43.930 --> 00:22:44.676 You know,

NOTE Confidence: 0.8442109

00:22:44.676 --> 00:22:45.422 you know.

NOTE Confidence: 0.8442109

00:22:45.422 --> 00:22:48.110 Technologies and when all the data seems

NOTE Confidence: 0.8442109

00:22:48.110 --> 00:22:50.770 to be trending in the wrong direction,
NOTE Confidence: 0.8442109

00:22:50.770 --> 00:22:52.510 perhaps we can intervene before the
NOTE Confidence: 0.8442109

00:22:52.510 --> 00:22:54.430 patient ends up in the hospital.
NOTE Confidence: 0.85744303

00:22:57.180 --> 00:22:59.020 So in putting this together,
NOTE Confidence: 0.85744303

00:22:59.020 --> 00:23:02.380 you know this is kind of our philosophical
NOTE Confidence: 0.85744303

00:23:02.380 --> 00:23:05.247 framework or backbone of how we approach
NOTE Confidence: 0.85744303

00:23:05.247 --> 00:23:08.102 care using big data you know to help
NOTE Confidence: 0.85744303

00:23:08.102 --> 00:23:10.395 us at the at the top to identify
NOTE Confidence: 0.85744303

00:23:10.395 --> 00:23:12.925 patients who are risk for you, know,
NOTE Confidence: 0.85744303

00:23:12.925 --> 00:23:14.935 obstructive sleep apnea before the patient
NOTE Confidence: 0.85744303

00:23:14.935 --> 00:23:17.370 comes in for their diagnostic testing.
NOTE Confidence: 0.85744303

00:23:17.370 --> 00:23:19.200 We will, through our system,
NOTE Confidence: 0.85744303

00:23:19.200 --> 00:23:21.769 automatically send web education as well as
NOTE Confidence: 0.85744303

00:23:21.769 --> 00:23:23.969 an intake questionnaire that's auto linked.
NOTE Confidence: 0.85744303

00:23:23.970 --> 00:23:26.330 The appointment patient gets diagnosed.
NOTE Confidence: 0.85744303

00:23:26.330 --> 00:23:29.347 Now PAP is initiated and then the

NOTE Confidence: 0.85744303

00:23:29.347 --> 00:23:32.241 first three months our efforts are

NOTE Confidence: 0.85744303

00:23:32.241 --> 00:23:35.271 really trying to get the patient

NOTE Confidence: 0.85744303

00:23:35.271 --> 00:23:38.188 successfully on boarded with Pap therapy.

NOTE Confidence: 0.85744303

00:23:38.190 --> 00:23:40.160 After the first three months,

NOTE Confidence: 0.85744303

00:23:40.160 --> 00:23:42.736 we transition to perhaps a more balanced

NOTE Confidence: 0.85744303

00:23:42.736 --> 00:23:44.746 approach where we're still obviously

NOTE Confidence: 0.85744303

00:23:44.746 --> 00:23:46.856 trying to maintain Pap adherence,

NOTE Confidence: 0.85744303

00:23:46.860 --> 00:23:49.908 but we are also trying to then implement

NOTE Confidence: 0.85744303

00:23:49.908 --> 00:23:52.214 additional strategies to really be able

NOTE Confidence: 0.85744303

00:23:52.214 --> 00:23:54.059 to optimize comorbid clinical outcomes

NOTE Confidence: 0.85744303

00:23:54.059 --> 00:23:56.709 and to have an interdisciplinary impact,

NOTE Confidence: 0.85744303

00:23:56.710 --> 00:23:59.142 and so you can see there's multiple areas

NOTE Confidence: 0.85744303

00:23:59.142 --> 00:24:01.755 in which automation is implemented where

NOTE Confidence: 0.85744303

00:24:01.755 --> 00:24:04.185 we use population management dashboards,

NOTE Confidence: 0.85744303

00:24:04.190 --> 00:24:07.414 and you know where we are able to

NOTE Confidence: 0.85744303

00:24:07.414 --> 00:24:09.899 provide remote patient monitoring.
NOTE Confidence: 0.85744303

00:24:09.900 --> 00:24:12.735 So that's this leads us to tool number 4.
NOTE Confidence: 0.85744303

00:24:12.740 --> 00:24:13.920 You know artificial intelligence.
NOTE Confidence: 0.85744303

00:24:13.920 --> 00:24:16.540 You know if you want a second opinion,
NOTE Confidence: 0.85744303

00:24:16.540 --> 00:24:18.382 I'll ask my computer and we're
NOTE Confidence: 0.85744303

00:24:18.382 --> 00:24:20.010 probably getting to that point.
NOTE Confidence: 0.85744303

00:24:20.010 --> 00:24:20.327 Actually,
NOTE Confidence: 0.85744303

00:24:20.327 --> 00:24:22.546 pretty pretty soon and wanted to kind
NOTE Confidence: 0.85744303

00:24:22.546 --> 00:24:25.070 of dig into this a little bit further.
NOTE Confidence: 0.85744303

00:24:25.070 --> 00:24:26.960 You know, for those who attended,
NOTE Confidence: 0.85744303

00:24:26.960 --> 00:24:29.151 you know ASM Destructors you know kind
NOTE Confidence: 0.85744303

00:24:29.151 --> 00:24:31.390 of shared this example a little bit.
NOTE Confidence: 0.85744303

00:24:31.390 --> 00:24:32.970 That AI has been oversold.
NOTE Confidence: 0.85744303

00:24:32.970 --> 00:24:34.860 You know, very good at chess,
NOTE Confidence: 0.85744303

00:24:34.860 --> 00:24:37.079 you know Watson very good at Jeopardy,
NOTE Confidence: 0.85744303

00:24:37.080 --> 00:24:39.884 but not so good at health care, you know?

NOTE Confidence: 0.85744303

00:24:39.884 --> 00:24:41.666 And there's a really great article

NOTE Confidence: 0.85744303

00:24:41.666 --> 00:24:42.950 by Lisa Strickland.

NOTE Confidence: 0.85744303

00:24:42.950 --> 00:24:44.906 Talked about how IBM Watson really

NOTE Confidence: 0.85744303

00:24:44.906 --> 00:24:46.945 overpromised and in this article you

NOTE Confidence: 0.85744303

00:24:46.945 --> 00:24:48.980 know really talked about, you know,

NOTE Confidence: 0.85744303

00:24:48.980 --> 00:24:50.990 here's some key catchphrases, I suppose,

NOTE Confidence: 0.85744303

00:24:50.990 --> 00:24:53.000 in terms of why Watson failed.

NOTE Confidence: 0.85744303

00:24:53.000 --> 00:24:55.422 You know it's now being sold because

NOTE Confidence: 0.85744303

00:24:55.422 --> 00:24:58.054 it just really hasn't made the kind

NOTE Confidence: 0.85744303

00:24:58.054 --> 00:25:00.334 of impact that they had envisioned.

NOTE Confidence: 0.85744303

00:25:00.340 --> 00:25:03.119 It's difficult to build an AI doctor.

NOTE Confidence: 0.85744303

00:25:03.120 --> 00:25:05.496 You know the bulk of its,

NOTE Confidence: 0.85744303

00:25:05.500 --> 00:25:07.876 you know information that it used,

NOTE Confidence: 0.85744303

00:25:07.880 --> 00:25:09.074 was unstructured information,

NOTE Confidence: 0.85744303

00:25:09.074 --> 00:25:10.268 such as doctors,

NOTE Confidence: 0.85744303

00:25:10.270 --> 00:25:11.870 notes and literature articles.

NOTE Confidence: 0.85744303

00:25:11.870 --> 00:25:14.750 It does not have a product to

NOTE Confidence: 0.85744303

00:25:14.750 --> 00:25:16.378 analyze medical images in.

NOTE Confidence: 0.85744303

00:25:16.380 --> 00:25:17.732 Pattern recognition is something

NOTE Confidence: 0.85744303

00:25:17.732 --> 00:25:20.299 that AI tends to be very good at,

NOTE Confidence: 0.85744303

00:25:20.300 --> 00:25:22.274 and it hasn't proven that will

NOTE Confidence: 0.85744303

00:25:22.274 --> 00:25:24.214 actually do something useful and very

NOTE Confidence: 0.85744303

00:25:24.214 --> 00:25:25.918 little in the way of demonstrating

NOTE Confidence: 0.85744303

00:25:25.918 --> 00:25:27.982 that AI can improve patient outcomes

NOTE Confidence: 0.85744303

00:25:27.982 --> 00:25:29.777 and save health system money.

NOTE Confidence: 0.85744303

00:25:29.780 --> 00:25:32.396 Or I can distill it down into this,

NOTE Confidence: 0.85744303

00:25:32.400 --> 00:25:34.206 which is application of AI has been

NOTE Confidence: 0.85744303

00:25:34.206 --> 00:25:35.903 too focused on mimicking rather

NOTE Confidence: 0.85744303

00:25:35.903 --> 00:25:37.627 than complementing provider work,

NOTE Confidence: 0.85744303

00:25:37.630 --> 00:25:39.709 and so how is Sleep Medicine trying

NOTE Confidence: 0.85744303

00:25:39.709 --> 00:25:41.398 to address these barriers effectively

NOTE Confidence: 0.85744303

00:25:41.398 --> 00:25:43.974 in order to make AI really effective?

NOTE Confidence: 0.85744303

00:25:43.980 --> 00:25:44.325 Impactful,

NOTE Confidence: 0.85744303

00:25:44.325 --> 00:25:46.740 useful in number one is creating a

NOTE Confidence: 0.85744303

00:25:46.740 --> 00:25:48.498 standardized framework for structured data.

NOTE Confidence: 0.85744303

00:25:48.500 --> 00:25:52.469 I can assure that with your ready.

NOTE Confidence: 0.85744303

00:25:52.470 --> 00:25:54.200 With all the technology integration

NOTE Confidence: 0.85744303

00:25:54.200 --> 00:25:56.751 that you know we've been able to

NOTE Confidence: 0.85744303

00:25:56.751 --> 00:25:58.651 develop to create specific clinical

NOTE Confidence: 0.85744303

00:25:58.651 --> 00:26:00.684 decision support tools that complement

NOTE Confidence: 0.85744303

00:26:00.684 --> 00:26:02.336 and enhance clinician work.

NOTE Confidence: 0.8651469

00:26:02.340 --> 00:26:03.908 To leverage pattern recognition

NOTE Confidence: 0.8651469

00:26:03.908 --> 00:26:05.868 to transform our definitions of

NOTE Confidence: 0.8651469

00:26:05.868 --> 00:26:07.570 sleep disorders in outcomes.

NOTE Confidence: 0.8651469

00:26:07.570 --> 00:26:09.210 To enhance patient interchange

NOTE Confidence: 0.8651469

00:26:09.210 --> 00:26:11.260 experience to increase engagement and

NOTE Confidence: 0.8651469

00:26:11.260 --> 00:26:13.526 also to automate clinician tasks such
NOTE Confidence: 0.8651469

00:26:13.526 --> 00:26:15.678 as documentation which tends to be
NOTE Confidence: 0.8651469

00:26:15.678 --> 00:26:17.430 very tedious and very labor intensive
NOTE Confidence: 0.8651469

00:26:17.430 --> 00:26:19.339 so you know I've already demonstrated
NOTE Confidence: 0.8651469

00:26:19.339 --> 00:26:21.740 this for you but you know Sleep
NOTE Confidence: 0.8651469

00:26:21.800 --> 00:26:24.369 Medicine is in some respects in an
NOTE Confidence: 0.8651469

00:26:24.369 --> 00:26:26.184 enviable position because, you know,
NOTE Confidence: 0.8651469

00:26:26.184 --> 00:26:28.683 we are so very much data driven.
NOTE Confidence: 0.8651469

00:26:28.690 --> 00:26:31.480 We have a lot of data and in were able
NOTE Confidence: 0.8651469

00:26:31.553 --> 00:26:34.388 to collect a lot of this data even from
NOTE Confidence: 0.8651469

00:26:34.388 --> 00:26:37.280 our manufacturers you know wirelessly.
NOTE Confidence: 0.8651469

00:26:37.280 --> 00:26:38.396 So we are.
NOTE Confidence: 0.8651469

00:26:38.396 --> 00:26:40.730 You know, overall you know in a
NOTE Confidence: 0.8651469

00:26:40.730 --> 00:26:42.770 pretty good position to be able
NOTE Confidence: 0.8651469

00:26:42.770 --> 00:26:45.038 to create a standardized set of
NOTE Confidence: 0.8651469

00:26:45.038 --> 00:26:47.168 structured data that can be useful.

NOTE Confidence: 0.8651469
00:26:47.170 --> 00:26:49.626 #2 wanted to talk a little bit more
NOTE Confidence: 0.8651469
00:26:49.626 --> 00:26:51.349 about clinical decision support,
NOTE Confidence: 0.8651469
00:26:51.350 --> 00:26:53.457 so over on the left side is
NOTE Confidence: 0.8651469
00:26:53.457 --> 00:26:54.840 our longitudinal care pathway
NOTE Confidence: 0.8651469
00:26:54.840 --> 00:26:56.935 components that I shared earlier,
NOTE Confidence: 0.8651469
00:26:56.940 --> 00:26:59.040 and in each of these components is
NOTE Confidence: 0.8651469
00:26:59.040 --> 00:27:01.544 it is an inflection point in which
NOTE Confidence: 0.8651469
00:27:01.544 --> 00:27:04.270 a clinical decision has to be made,
NOTE Confidence: 0.8651469
00:27:04.270 --> 00:27:06.580 and each of these components is
NOTE Confidence: 0.8651469
00:27:06.580 --> 00:27:08.829 very amenable to having big data.
NOTE Confidence: 0.8651469
00:27:08.830 --> 00:27:12.002 And artificial intelligence provide
NOTE Confidence: 0.8651469
00:27:12.002 --> 00:27:13.588 us support.
NOTE Confidence: 0.8651469
00:27:13.590 --> 00:27:14.406 You know guidance,
NOTE Confidence: 0.8651469
00:27:14.406 --> 00:27:15.766 recommendation in terms of what
NOTE Confidence: 0.8651469
00:27:15.766 --> 00:27:17.677 to do about a particular patient,
NOTE Confidence: 0.8651469

00:27:17.680 --> 00:27:20.008 so here's some areas that we're working on,
NOTE Confidence: 0.8651469

00:27:20.010 --> 00:27:21.852 and this is actually a little
NOTE Confidence: 0.8651469

00:27:21.852 --> 00:27:23.080 antiquated 'cause we're working
NOTE Confidence: 0.8651469

00:27:23.131 --> 00:27:25.028 on more than just the four that
NOTE Confidence: 0.8651469

00:27:25.028 --> 00:27:25.841 I've highlighted here.
NOTE Confidence: 0.8651469

00:27:25.850 --> 00:27:28.186 But you know, some examples are who's really,
NOTE Confidence: 0.8651469

00:27:28.190 --> 00:27:30.927 who's really at risk for sleep apnea.
NOTE Confidence: 0.8651469

00:27:30.930 --> 00:27:32.334 And in different populations.
NOTE Confidence: 0.8651469

00:27:32.334 --> 00:27:33.036 For example,
NOTE Confidence: 0.8651469

00:27:33.040 --> 00:27:35.746 the surgical population and so forth.
NOTE Confidence: 0.8651469

00:27:35.750 --> 00:27:38.781 You know who should be triaged and
NOTE Confidence: 0.8651469

00:27:38.781 --> 00:27:41.029 undergo home testing versus PSG.
NOTE Confidence: 0.8651469

00:27:41.030 --> 00:27:43.095 You know what is the real risk
NOTE Confidence: 0.8651469

00:27:43.095 --> 00:27:44.403 of cardiovascular disease in
NOTE Confidence: 0.8651469

00:27:44.403 --> 00:27:45.510 developing novel metrics?
NOTE Confidence: 0.8651469

00:27:45.510 --> 00:27:48.499 Doing a better job of phenotyping patients.

NOTE Confidence: 0.8651469

00:27:48.500 --> 00:27:50.450 Can we tailor what type of

NOTE Confidence: 0.8651469

00:27:50.450 --> 00:27:52.180 therapy that patient should be on?

NOTE Confidence: 0.8651469

00:27:52.180 --> 00:27:54.112 Perhaps the patient you know is

NOTE Confidence: 0.8651469

00:27:54.112 --> 00:27:56.006 better off going directly to an

NOTE Confidence: 0.8651469

00:27:56.006 --> 00:27:57.098 oral plants right away?

NOTE Confidence: 0.8651469

00:27:57.100 --> 00:27:58.745 Can we individualize pep adherence

NOTE Confidence: 0.8651469

00:27:58.745 --> 00:28:00.947 targets for patients so that we're not

NOTE Confidence: 0.8651469

00:28:00.947 --> 00:28:03.140 fixated on 70% four hours for everybody?

NOTE Confidence: 0.8651469

00:28:03.140 --> 00:28:06.010 Can we predict when a patient is going

NOTE Confidence: 0.8651469

00:28:06.010 --> 00:28:08.840 to fall off the tap before they actually do?

NOTE Confidence: 0.8651469

00:28:08.840 --> 00:28:10.718 So how would we utilized this?

NOTE Confidence: 0.8651469

00:28:10.720 --> 00:28:12.538 And here's one example you know

NOTE Confidence: 0.8651469

00:28:12.538 --> 00:28:14.910 over on the left side is you know

NOTE Confidence: 0.8651469

00:28:14.910 --> 00:28:17.000 a patient who is green and we

NOTE Confidence: 0.8651469

00:28:17.000 --> 00:28:18.568 predict good papet hearings.

NOTE Confidence: 0.8651469

00:28:18.570 --> 00:28:20.460 But if they are not adhered,
NOTE Confidence: 0.8651469

00:28:20.460 --> 00:28:22.025 we're going to spend the
NOTE Confidence: 0.8651469

00:28:22.025 --> 00:28:23.277 effort to troubleshoot CPAP,
NOTE Confidence: 0.8651469

00:28:23.280 --> 00:28:25.618 whereas the patient over on the right
NOTE Confidence: 0.8651469

00:28:25.618 --> 00:28:28.099 side we predict that this patient is
NOTE Confidence: 0.8651469

00:28:28.099 --> 00:28:30.217 going to struggle with pap therapy.
NOTE Confidence: 0.8651469

00:28:30.220 --> 00:28:32.635 And if they are not inherent instead
NOTE Confidence: 0.8651469

00:28:32.635 --> 00:28:35.046 of really trying to bang your head
NOTE Confidence: 0.8651469

00:28:35.046 --> 00:28:37.002 against the wall and risk losing
NOTE Confidence: 0.8651469

00:28:37.068 --> 00:28:39.348 time and losing patient engagement,
NOTE Confidence: 0.8651469

00:28:39.350 --> 00:28:42.182 this is a patient that will divert to
NOTE Confidence: 0.8651469

00:28:42.182 --> 00:28:45.186 some other type of therapy more early on,
NOTE Confidence: 0.8651469

00:28:45.190 --> 00:28:47.808 or what we can do is create
NOTE Confidence: 0.8651469

00:28:47.808 --> 00:28:48.930 individualized management prescriptions
NOTE Confidence: 0.8651469

00:28:48.986 --> 00:28:50.656 for patients you know through.
NOTE Confidence: 0.8651469

00:28:50.660 --> 00:28:53.215 You know a series of you know,

NOTE Confidence: 0.8651469
00:28:53.220 --> 00:28:53.585 characterizations.
NOTE Confidence: 0.8651469
00:28:53.585 --> 00:28:54.315 You know,
NOTE Confidence: 0.8651469
00:28:54.315 --> 00:28:56.140 a different characteristics and prediction,
NOTE Confidence: 0.8651469
00:28:56.140 --> 00:28:57.235 you know metrics.
NOTE Confidence: 0.8651469
00:28:57.235 --> 00:28:58.330 So, for example,
NOTE Confidence: 0.85835266
00:28:58.330 --> 00:29:00.230 patient number one you know.
NOTE Confidence: 0.85835266
00:29:00.230 --> 00:29:02.890 Has a high risk of cardiovascular disease,
NOTE Confidence: 0.85835266
00:29:02.890 --> 00:29:05.824 is predicted to do well with C pap and
NOTE Confidence: 0.85835266
00:29:05.824 --> 00:29:08.742 this is a patient that we're going
NOTE Confidence: 0.85835266
00:29:08.742 --> 00:29:11.250 to initially path therapy in target.
NOTE Confidence: 0.85835266
00:29:11.250 --> 00:29:13.150 A high adherence and provide
NOTE Confidence: 0.85835266
00:29:13.150 --> 00:29:14.670 the necessary follow up,
NOTE Confidence: 0.85835266
00:29:14.670 --> 00:29:16.950 whereas patient #2 is mostly symptomatic.
NOTE Confidence: 0.85835266
00:29:16.950 --> 00:29:19.230 Should respond to an oral appliance.
NOTE Confidence: 0.85835266
00:29:19.230 --> 00:29:22.030 It has a low PAP adherence prediction
NOTE Confidence: 0.85835266

00:29:22.030 --> 00:29:25.307 score and this is a patient that we will,
NOTE Confidence: 0.85835266

00:29:25.310 --> 00:29:26.450 perhaps, you know,
NOTE Confidence: 0.85835266

00:29:26.450 --> 00:29:28.350 divert to oral appliance therapy.
NOTE Confidence: 0.85835266

00:29:28.350 --> 00:29:31.026 You know right away instead of.
NOTE Confidence: 0.85835266

00:29:31.030 --> 00:29:34.250 Wasting our effort without therapy.
NOTE Confidence: 0.85835266

00:29:34.250 --> 00:29:35.753 So that's, uh,
NOTE Confidence: 0.85835266

00:29:35.753 --> 00:29:38.759 approach #2 approach #3 to making
NOTE Confidence: 0.85835266

00:29:38.759 --> 00:29:41.558 artificial intelligence useful is to,
NOTE Confidence: 0.85835266

00:29:41.560 --> 00:29:42.604 you know,
NOTE Confidence: 0.85835266

00:29:42.604 --> 00:29:46.780 leverage something that AI is very good at,
NOTE Confidence: 0.85835266

00:29:46.780 --> 00:29:48.968 which is pattern recognition.
NOTE Confidence: 0.85835266

00:29:48.968 --> 00:29:51.156 So here's one example.
NOTE Confidence: 0.85835266

00:29:51.160 --> 00:29:53.830 You know, daily stepapp data.
NOTE Confidence: 0.85835266

00:29:53.830 --> 00:29:54.506 You know,
NOTE Confidence: 0.85835266

00:29:54.506 --> 00:29:57.682 can we use AI to help us preemptively predict
NOTE Confidence: 0.85835266

00:29:57.682 --> 00:30:00.874 when a patient is going to lose adherence?

NOTE Confidence: 0.85835266

00:30:00.880 --> 00:30:03.442 An engagement with pap therapy so that

NOTE Confidence: 0.85835266

00:30:03.442 --> 00:30:05.753 we can maintain engagement rather than

NOTE Confidence: 0.85835266

00:30:05.753 --> 00:30:08.413 you know what I think is probably

NOTE Confidence: 0.85835266

00:30:08.481 --> 00:30:10.593 harder to have them lose engagement

NOTE Confidence: 0.85835266

00:30:10.593 --> 00:30:13.315 and then have to re engage them.

NOTE Confidence: 0.85835266

00:30:13.315 --> 00:30:16.360 Or can we use pap therapy data?

NOTE Confidence: 0.85835266

00:30:16.360 --> 00:30:18.466 To be able to preemptively determine

NOTE Confidence: 0.85835266

00:30:18.466 --> 00:30:21.086 when a patient is at risk for

NOTE Confidence: 0.85835266

00:30:21.086 --> 00:30:23.384 hospitalization so that we can intervene

NOTE Confidence: 0.85835266

00:30:23.384 --> 00:30:26.177 before the patient ends up in the hospital.

NOTE Confidence: 0.85835266

00:30:26.180 --> 00:30:28.504 Another I said of effort that we

NOTE Confidence: 0.85835266

00:30:28.504 --> 00:30:30.569 are engaged in in regards to,

NOTE Confidence: 0.85835266

00:30:30.570 --> 00:30:31.340 you know,

NOTE Confidence: 0.85835266

00:30:31.340 --> 00:30:33.265 pattern recognition is by including

NOTE Confidence: 0.85835266

00:30:33.265 --> 00:30:35.389 the use of raw tracings.

NOTE Confidence: 0.85835266

00:30:35.390 --> 00:30:36.020 You know,
NOTE Confidence: 0.85835266

00:30:36.020 --> 00:30:38.540 and our initial step is the raw PS3
NOTE Confidence: 0.85835266

00:30:38.610 --> 00:30:41.158 tracings and the raw hsat tracings and
NOTE Confidence: 0.85835266

00:30:41.158 --> 00:30:43.517 throw it into our machine learning
NOTE Confidence: 0.85835266

00:30:43.517 --> 00:30:45.911 data set and create new metrics
NOTE Confidence: 0.85835266

00:30:45.911 --> 00:30:48.110 that are much more informative
NOTE Confidence: 0.85835266

00:30:48.110 --> 00:30:49.460 about cardiovascular risk.
NOTE Confidence: 0.85835266

00:30:49.460 --> 00:30:50.126 You know,
NOTE Confidence: 0.85835266

00:30:50.126 --> 00:30:50.792 neurocognitive impairment
NOTE Confidence: 0.85835266

00:30:50.792 --> 00:30:52.124 and response to therapy,
NOTE Confidence: 0.85835266

00:30:52.130 --> 00:30:54.674 and so enter data is a group that
NOTE Confidence: 0.85835266

00:30:54.674 --> 00:30:56.810 we're working together with a call.
NOTE Confidence: 0.85835266

00:30:56.810 --> 00:30:58.142 This dynamic phenotyping and,
NOTE Confidence: 0.85835266

00:30:58.142 --> 00:31:00.480 you know, an effort that you know
NOTE Confidence: 0.85835266

00:31:00.480 --> 00:31:02.150 we're very much engaged in,
NOTE Confidence: 0.85835266

00:31:02.150 --> 00:31:05.490 and this is what it would kind of look like.

NOTE Confidence: 0.85835266

00:31:05.490 --> 00:31:08.496 This is kind of a very famous image of,

NOTE Confidence: 0.85835266

00:31:08.500 --> 00:31:10.918 you know, some.

NOTE Confidence: 0.85835266

00:31:10.920 --> 00:31:12.752 You know artificial intelligence?

NOTE Confidence: 0.85835266

00:31:12.752 --> 00:31:15.960 You know, experts that have you know,

NOTE Confidence: 0.85835266

00:31:15.960 --> 00:31:18.424 identified various clusters of

NOTE Confidence: 0.85835266

00:31:18.424 --> 00:31:19.656 diabetes subtypes.

NOTE Confidence: 0.85835266

00:31:19.660 --> 00:31:20.836 And in a way,

NOTE Confidence: 0.85835266

00:31:20.836 --> 00:31:23.481 we're looking to be able to do something

NOTE Confidence: 0.85835266

00:31:23.481 --> 00:31:26.697 very similar so that instead of relying on,

NOTE Confidence: 0.85835266

00:31:26.700 --> 00:31:29.815 you know the a try to infer.

NOTE Confidence: 0.85835266

00:31:29.820 --> 00:31:30.774 Risk you know,

NOTE Confidence: 0.85835266

00:31:30.774 --> 00:31:33.377 and we know that the HY does a

NOTE Confidence: 0.85835266

00:31:33.377 --> 00:31:34.857 very poor job of that.

NOTE Confidence: 0.85835266

00:31:34.860 --> 00:31:36.810 Whether we can actually be able

NOTE Confidence: 0.85835266

00:31:36.810 --> 00:31:38.487 to identify different subtypes of

NOTE Confidence: 0.85835266

00:31:38.487 --> 00:31:40.377 obstructive sleep apnea that are much
NOTE Confidence: 0.85835266

00:31:40.377 --> 00:31:42.429 more meaningful for clinical management.
NOTE Confidence: 0.85835266

00:31:42.430 --> 00:31:45.319 So we work together with enter data and I
NOTE Confidence: 0.85835266

00:31:45.319 --> 00:31:47.967 don't want to take any credit for this.
NOTE Confidence: 0.85835266

00:31:47.970 --> 00:31:50.578 'cause this is all enter data here is,
NOTE Confidence: 0.85835266

00:31:50.580 --> 00:31:51.558 they've actually taken,
NOTE Confidence: 0.85835266

00:31:51.558 --> 00:31:53.188 you know, you straw tracings.
NOTE Confidence: 0.85835266

00:31:53.188 --> 00:31:54.165 You know, e.g.
NOTE Confidence: 0.85835266

00:31:54.165 --> 00:31:56.115 Tracings and company and you know,
NOTE Confidence: 0.85835266

00:31:56.120 --> 00:31:57.556 provided some complimentary EHR
NOTE Confidence: 0.85835266

00:31:57.556 --> 00:31:59.710 information they have come up with
NOTE Confidence: 0.85835266

00:31:59.766 --> 00:32:01.666 something called the Brain H-index.
NOTE Confidence: 0.85835266

00:32:01.670 --> 00:32:03.956 So in the middle here you can see that
NOTE Confidence: 0.85835266

00:32:03.956 --> 00:32:06.069 there is a lot of different clusters.
NOTE Confidence: 0.85835266

00:32:06.070 --> 00:32:07.926 You know a different.
NOTE Confidence: 0.85835266

00:32:07.926 --> 00:32:09.318 Subtypes of EG.

NOTE Confidence: 0.85835266
00:32:09.320 --> 00:32:09.798 Waveforms,
NOTE Confidence: 0.85835266
00:32:09.798 --> 00:32:12.666 patterns and this brain age index.
NOTE Confidence: 0.77461094
00:32:12.670 --> 00:32:14.104 After adjusting for,
NOTE Confidence: 0.77461094
00:32:14.104 --> 00:32:17.450 you know a number of different factors,
NOTE Confidence: 0.77461094
00:32:17.450 --> 00:32:21.548 you can use it to predict.
NOTE Confidence: 0.77461094
00:32:21.550 --> 00:32:23.690 What the person's gender is.
NOTE Confidence: 0.77461094
00:32:23.690 --> 00:32:25.190 Whether they have depression,
NOTE Confidence: 0.77461094
00:32:25.190 --> 00:32:26.315 whether they're sleepy,
NOTE Confidence: 0.77461094
00:32:26.320 --> 00:32:28.570 have impairment in concentration and memory,
NOTE Confidence: 0.77461094
00:32:28.570 --> 00:32:30.440 whether they have sleep apnea,
NOTE Confidence: 0.77461094
00:32:30.440 --> 00:32:31.940 and you know other.
NOTE Confidence: 0.77461094
00:32:31.940 --> 00:32:33.440 You know clinical conditions,
NOTE Confidence: 0.77461094
00:32:33.440 --> 00:32:36.192 and so you know this is just an
NOTE Confidence: 0.77461094
00:32:36.192 --> 00:32:38.687 example of some plima Neri work.
NOTE Confidence: 0.77461094
00:32:38.690 --> 00:32:42.086 You know that really looks at.
NOTE Confidence: 0.77461094

00:32:42.090 --> 00:32:43.450 You know?
NOTE Confidence: 0.77461094

00:32:43.450 --> 00:32:45.490 Artificial intelligence to
NOTE Confidence: 0.77461094

00:32:45.490 --> 00:32:48.210 identify patterns of different
NOTE Confidence: 0.77461094

00:32:48.210 --> 00:32:50.659 sleep disorder subtypes.
NOTE Confidence: 0.77461094

00:32:50.660 --> 00:32:51.460 Uhm?
NOTE Confidence: 0.8456062

00:32:53.720 --> 00:32:55.943 I'm going to move on to a fourth tool
NOTE Confidence: 0.8456062

00:32:55.943 --> 00:32:58.479 or approach to artificial intelligence,
NOTE Confidence: 0.8456062

00:32:58.480 --> 00:33:01.200 but I wanted to present this to you.
NOTE Confidence: 0.8456062

00:33:01.200 --> 00:33:03.580 You know quickly as a you know,
NOTE Confidence: 0.8456062

00:33:03.580 --> 00:33:06.116 kind of as a transition into the next
NOTE Confidence: 0.8456062

00:33:06.116 --> 00:33:08.285 slide I mentioned previously how we
NOTE Confidence: 0.8456062

00:33:08.285 --> 00:33:11.398 were able to use our big data set to,
NOTE Confidence: 0.8456062

00:33:11.400 --> 00:33:13.100 you know, Pivot really quickly
NOTE Confidence: 0.8456062

00:33:13.100 --> 00:33:14.800 to looking at covid outcomes.
NOTE Confidence: 0.8456062

00:33:14.800 --> 00:33:17.488 The other thing that we've done is
NOTE Confidence: 0.8456062

00:33:17.488 --> 00:33:21.070 we started to look at the risk of

NOTE Confidence: 0.8456062

00:33:21.070 --> 00:33:23.238 acute cardiovascular event. You know,

NOTE Confidence: 0.8456062

00:33:23.238 --> 00:33:26.270 over even less than a one year period,

NOTE Confidence: 0.8456062

00:33:26.270 --> 00:33:30.056 you know with about 46,000 patients.

NOTE Confidence: 0.8456062

00:33:30.060 --> 00:33:33.714 And so acute cardiovascular event was defined

NOTE Confidence: 0.8456062

00:33:33.714 --> 00:33:37.590 as an episode of either a heart attack.

NOTE Confidence: 0.8456062

00:33:37.590 --> 00:33:39.550 Unstable angina stroke and one

NOTE Confidence: 0.8456062

00:33:39.550 --> 00:33:41.510 other thing can't quite remember,

NOTE Confidence: 0.8456062

00:33:41.510 --> 00:33:44.114 but anyways those were the key conditions

NOTE Confidence: 0.8456062

00:33:44.114 --> 00:33:46.401 that defined a cardiovascular event and

NOTE Confidence: 0.8456062

00:33:46.401 --> 00:33:49.903 where you can see here is that for the

NOTE Confidence: 0.8456062

00:33:49.903 --> 00:33:52.088 mild obstructive sleep apnea patients,

NOTE Confidence: 0.8456062

00:33:52.090 --> 00:33:54.834 that hazard ratio really wasn't too much.

NOTE Confidence: 0.8456062

00:33:54.840 --> 00:33:57.648 Change the P value you know showed that there

NOTE Confidence: 0.8456062

00:33:57.648 --> 00:34:00.328 was really no significant relationships,

NOTE Confidence: 0.8456062

00:34:00.330 --> 00:34:03.180 but from moderate to severe obstructive

NOTE Confidence: 0.8456062

00:34:03.180 --> 00:34:06.700 sleep apnea you can see that those who.

NOTE Confidence: 0.8456062

00:34:06.700 --> 00:34:09.778 I have moderate to severe sleep

NOTE Confidence: 0.8456062

00:34:09.778 --> 00:34:12.990 apnea but are not using Pap.

NOTE Confidence: 0.8456062

00:34:12.990 --> 00:34:14.556 Compared to those who had moderate

NOTE Confidence: 0.8456062

00:34:14.556 --> 00:34:15.600 to severe obstructive sleep,

NOTE Confidence: 0.8456062

00:34:15.600 --> 00:34:17.124 and I'm sorry, compared to those

NOTE Confidence: 0.8456062

00:34:17.124 --> 00:34:18.730 who have no obstructive sleep apnea,

NOTE Confidence: 0.8456062

00:34:18.730 --> 00:34:20.234 the hazard ratio is.

NOTE Confidence: 0.8456062

00:34:20.234 --> 00:34:22.490 You know quite a bit higher,

NOTE Confidence: 0.8456062

00:34:22.490 --> 00:34:25.300 and that was statistically significant.

NOTE Confidence: 0.8456062

00:34:25.300 --> 00:34:27.240 When the patient uses path,

NOTE Confidence: 0.8456062

00:34:27.240 --> 00:34:29.180 but to a moderate degree,

NOTE Confidence: 0.8456062

00:34:29.180 --> 00:34:31.115 the hazard ratio drops quite

NOTE Confidence: 0.8456062

00:34:31.115 --> 00:34:32.276 substantially and significantly,

NOTE Confidence: 0.8456062

00:34:32.280 --> 00:34:34.872 and the certainly the group that

NOTE Confidence: 0.8456062

00:34:34.872 --> 00:34:38.243 you know did the best for those who

NOTE Confidence: 0.8456062

00:34:38.243 --> 00:34:41.190 use PAP for at least four hours.

NOTE Confidence: 0.8456062

00:34:41.190 --> 00:34:43.368 In the hand hazard ratio drops

NOTE Confidence: 0.8456062

00:34:43.368 --> 00:34:45.949 you know to an even greater.

NOTE Confidence: 0.8456062

00:34:45.950 --> 00:34:46.268 Uhm?

NOTE Confidence: 0.8456062

00:34:46.268 --> 00:34:46.904 You know,

NOTE Confidence: 0.8456062

00:34:46.904 --> 00:34:47.222 yeah,

NOTE Confidence: 0.8456062

00:34:47.222 --> 00:34:49.960 FX size and when we had the greatest

NOTE Confidence: 0.8456062

00:34:49.960 --> 00:34:52.592 effect size and this was adjusted for

NOTE Confidence: 0.8456062

00:34:52.592 --> 00:34:55.578 a number of baseline characteristics.

NOTE Confidence: 0.8456062

00:34:55.580 --> 00:34:58.396 So you know we were able to determine

NOTE Confidence: 0.8456062

00:34:58.396 --> 00:35:00.860 from our, you know, big data set.

NOTE Confidence: 0.8456062

00:35:00.860 --> 00:35:03.146 You know pretty quickly you know

NOTE Confidence: 0.8456062

00:35:03.146 --> 00:35:05.215 some of these really significant

NOTE Confidence: 0.8456062

00:35:05.215 --> 00:35:08.047 associations and so that leads to.

NOTE Confidence: 0.8456062

00:35:08.050 --> 00:35:10.288 Approach #4 how can we use

NOTE Confidence: 0.8456062

00:35:10.288 --> 00:35:11.034 artificial intelligence?
NOTE Confidence: 0.8456062

00:35:11.040 --> 00:35:14.404 Well, our next step is to look at, you,
NOTE Confidence: 0.8456062

00:35:14.404 --> 00:35:16.648 know, some of these relationships again,
NOTE Confidence: 0.8456062

00:35:16.650 --> 00:35:18.146 but using machine learning
NOTE Confidence: 0.8456062

00:35:18.146 --> 00:35:20.016 and then being able to,
NOTE Confidence: 0.8456062

00:35:20.020 --> 00:35:20.922 you know,
NOTE Confidence: 0.8456062

00:35:20.922 --> 00:35:22.726 develop cardiovascular risk profiles
NOTE Confidence: 0.8456062

00:35:22.726 --> 00:35:25.477 for patients and then be able to
NOTE Confidence: 0.8456062

00:35:25.477 --> 00:35:27.521 model for the patient that if you
NOTE Confidence: 0.8456062

00:35:27.589 --> 00:35:30.144 use PAP you know your risk of
NOTE Confidence: 0.8456062

00:35:30.144 --> 00:35:31.920 cardiovascular disease is going to
NOTE Confidence: 0.8456062

00:35:31.920 --> 00:35:35.583 go from 60 to 35 and if you use or
NOTE Confidence: 0.8456062

00:35:35.583 --> 00:35:38.523 appliance it's going to go to 45.
NOTE Confidence: 0.8456062

00:35:38.530 --> 00:35:40.504 Not real numbers that you just made
NOTE Confidence: 0.8456062

00:35:40.504 --> 00:35:42.889 up by just for conceptual purposes.
NOTE Confidence: 0.8456062

00:35:42.890 --> 00:35:45.170 And so, let's say the patient,

NOTE Confidence: 0.8456062
00:35:45.170 --> 00:35:47.627 does you know select C pap as
NOTE Confidence: 0.8456062
00:35:47.627 --> 00:35:49.730 the patient meets their target.
NOTE Confidence: 0.8456062
00:35:49.730 --> 00:35:52.390 You know, based on our machine learning,
NOTE Confidence: 0.8456062
00:35:52.390 --> 00:35:54.290 you know relationships that have
NOTE Confidence: 0.8456062
00:35:54.290 --> 00:35:55.050 been identified,
NOTE Confidence: 0.8456062
00:35:55.050 --> 00:35:57.612 that risk or is going to constantly
NOTE Confidence: 0.8456062
00:35:57.612 --> 00:35:59.559 update and decrease as the
NOTE Confidence: 0.8456062
00:35:59.559 --> 00:36:01.509 adherence targets targets are met.
NOTE Confidence: 0.8456062
00:36:01.510 --> 00:36:03.410 But if they're doing poorly,
NOTE Confidence: 0.8456062
00:36:03.410 --> 00:36:04.930 then the score will,
NOTE Confidence: 0.8456062
00:36:04.930 --> 00:36:06.830 you know will then increase,
NOTE Confidence: 0.8456062
00:36:06.830 --> 00:36:09.147 and so being able to use API
NOTE Confidence: 0.8456062
00:36:09.147 --> 00:36:10.140 to gamify patient
NOTE Confidence: 0.8235642
00:36:10.217 --> 00:36:12.405 engagement, you know for
NOTE Confidence: 0.8235642
00:36:12.405 --> 00:36:14.265 patients is another approach.
NOTE Confidence: 0.8235642

00:36:14.270 --> 00:36:15.898 That you know is,
NOTE Confidence: 0.8235642

00:36:15.898 --> 00:36:19.890 you know is just part of our one of
NOTE Confidence: 0.8235642

00:36:19.890 --> 00:36:22.794 the efforts that we're engaged in.
NOTE Confidence: 0.8235642

00:36:22.800 --> 00:36:25.805 Another example of patient interchange
NOTE Confidence: 0.8235642

00:36:25.805 --> 00:36:28.810 engagement using an AI interface
NOTE Confidence: 0.8235642

00:36:28.903 --> 00:36:31.699 is by utilizing an automated bot.
NOTE Confidence: 0.80027825

00:36:33.720 --> 00:36:37.056 And in this case you know this is.
NOTE Confidence: 0.80027825

00:36:37.060 --> 00:36:39.568 You know what has seen Globat,
NOTE Confidence: 0.80027825

00:36:39.570 --> 00:36:44.700 but it's a kind of a CBT for depression.
NOTE Confidence: 0.80027825

00:36:44.700 --> 00:36:47.572 No AI bot. That I,
NOTE Confidence: 0.80027825

00:36:47.572 --> 00:36:49.127 you know, it's pretty slick.
NOTE Confidence: 0.80027825

00:36:49.130 --> 00:36:51.300 It it's pretty easy to engage with,
NOTE Confidence: 0.80027825

00:36:51.300 --> 00:36:53.652 you know, and there are some people you
NOTE Confidence: 0.80027825

00:36:53.652 --> 00:36:56.280 know many people and and I've been reading.
NOTE Confidence: 0.80027825

00:36:56.280 --> 00:36:57.524 Read an article about
NOTE Confidence: 0.80027825

00:36:57.524 --> 00:36:59.079 how some people in China,

NOTE Confidence: 0.80027825

00:36:59.080 --> 00:37:01.012 you know they work very hard and

NOTE Confidence: 0.80027825

00:37:01.012 --> 00:37:02.520 they would actually rather engage

NOTE Confidence: 0.80027825

00:37:02.520 --> 00:37:03.772 with an artificial companion

NOTE Confidence: 0.80027825

00:37:03.772 --> 00:37:05.610 than a real life companion,

NOTE Confidence: 0.80027825

00:37:05.610 --> 00:37:07.476 so I'm not sure if that's

NOTE Confidence: 0.80027825

00:37:07.476 --> 00:37:09.340 really a good thing, you know.

NOTE Confidence: 0.80027825

00:37:09.340 --> 00:37:12.449 But the point here is that you know you can,

NOTE Confidence: 0.80027825

00:37:12.450 --> 00:37:12.994 you know?

NOTE Confidence: 0.80027825

00:37:12.994 --> 00:37:14.898 Utilizing an AI bot that collects a

NOTE Confidence: 0.80027825

00:37:14.898 --> 00:37:16.867 number of different holistic inputs and

NOTE Confidence: 0.80027825

00:37:16.867 --> 00:37:19.040 provides a number of different holistic.

NOTE Confidence: 0.80027825

00:37:19.040 --> 00:37:23.165 Outputs to provide a constant

NOTE Confidence: 0.80027825

00:37:23.165 --> 00:37:25.640 interactive health companion.

NOTE Confidence: 0.80027825

00:37:25.640 --> 00:37:28.364 You know that complements near the

NOTE Confidence: 0.80027825

00:37:28.364 --> 00:37:30.470 intermittent nature you know of.

NOTE Confidence: 0.80027825

00:37:30.470 --> 00:37:31.630 You know,
NOTE Confidence: 0.80027825

00:37:31.630 --> 00:37:35.110 provider encounters and so that's another
NOTE Confidence: 0.80027825

00:37:35.110 --> 00:37:39.316 kind of effort that we are engaged in.
NOTE Confidence: 0.80027825

00:37:39.320 --> 00:37:41.950 Uhm?
NOTE Confidence: 0.80027825

00:37:41.950 --> 00:37:45.494 How can a I, you know help us?
NOTE Confidence: 0.80027825

00:37:45.500 --> 00:37:47.290 Care more efficiently, you know,
NOTE Confidence: 0.80027825

00:37:47.290 --> 00:37:48.710 provide care more efficient,
NOTE Confidence: 0.80027825

00:37:48.710 --> 00:37:49.775 efficiently and effectively,
NOTE Confidence: 0.80027825

00:37:49.780 --> 00:37:51.742 and in the fifth thing that
NOTE Confidence: 0.80027825

00:37:51.742 --> 00:37:53.900 I'll mention here is to really
NOTE Confidence: 0.80027825

00:37:53.900 --> 00:37:55.845 help us with Commission tasks.
NOTE Confidence: 0.80027825

00:37:55.850 --> 00:37:58.468 So another thing that we are working
NOTE Confidence: 0.80027825

00:37:58.468 --> 00:38:01.319 on is helping us generate auto generate
NOTE Confidence: 0.80027825

00:38:01.319 --> 00:38:04.540 a clinician note based on the patients.
NOTE Confidence: 0.80027825

00:38:04.540 --> 00:38:06.188 You know electronic questionnaire
NOTE Confidence: 0.80027825

00:38:06.188 --> 00:38:08.660 information as well as you know,

NOTE Confidence: 0.80027825

00:38:08.660 --> 00:38:10.720 you know other sets of

NOTE Confidence: 0.80027825

00:38:10.720 --> 00:38:12.368 information from the patient.

NOTE Confidence: 0.80027825

00:38:12.370 --> 00:38:15.300 For example there are EHR

NOTE Confidence: 0.80027825

00:38:15.300 --> 00:38:18.230 comorbidity information and so forth.

NOTE Confidence: 0.80027825

00:38:18.230 --> 00:38:20.398 You know Epic is trying to work on.

NOTE Confidence: 0.80027825

00:38:20.400 --> 00:38:21.592 You know these advanced,

NOTE Confidence: 0.80027825

00:38:21.592 --> 00:38:23.082 you know voice recognition software

NOTE Confidence: 0.80027825

00:38:23.082 --> 00:38:25.009 you know to be able to generate notes,

NOTE Confidence: 0.80027825

00:38:25.010 --> 00:38:27.002 but I just have a hard time seeing

NOTE Confidence: 0.80027825

00:38:27.002 --> 00:38:28.799 that that's going to be successful.

NOTE Confidence: 0.80027825

00:38:28.800 --> 00:38:29.342 You know,

NOTE Confidence: 0.80027825

00:38:29.342 --> 00:38:31.510 anytime soon you know when I'm in clinic,

NOTE Confidence: 0.80027825

00:38:31.510 --> 00:38:33.344 there's a lot of stuff you know

NOTE Confidence: 0.80027825

00:38:33.344 --> 00:38:34.736 that we're talking to patients

NOTE Confidence: 0.80027825

00:38:34.736 --> 00:38:36.386 about and and don't want that.

NOTE Confidence: 0.80027825

00:38:36.390 --> 00:38:38.224 You know most of that to be
NOTE Confidence: 0.80027825

00:38:38.224 --> 00:38:39.370 in the clinician note.
NOTE Confidence: 0.80027825

00:38:39.370 --> 00:38:40.990 And how would you organize it?
NOTE Confidence: 0.80027825

00:38:40.990 --> 00:38:43.429 I don't think this is a much better approach,
NOTE Confidence: 0.80027825

00:38:43.430 --> 00:38:45.614 which is effectively to effectively to
NOTE Confidence: 0.80027825

00:38:45.614 --> 00:38:48.037 have the patient generate the note for us.
NOTE Confidence: 0.80027825

00:38:48.040 --> 00:38:49.798 I I kind of mentioned this.
NOTE Confidence: 0.80027825

00:38:49.800 --> 00:38:51.599 You know being able to take a
NOTE Confidence: 0.80027825

00:38:51.599 --> 00:38:53.309 diverse set of information to,
NOTE Confidence: 0.80027825

00:38:53.310 --> 00:38:54.110 you know,
NOTE Confidence: 0.80027825

00:38:54.110 --> 00:38:56.110 automatically triage patients to what
NOTE Confidence: 0.80027825

00:38:56.110 --> 00:38:58.893 type of testing do they need with what
NOTE Confidence: 0.80027825

00:38:58.893 --> 00:39:01.310 type of protocol you know and so forth.
NOTE Confidence: 0.80027825

00:39:01.310 --> 00:39:02.860 Another example of clinician tasks,
NOTE Confidence: 0.80027825

00:39:02.860 --> 00:39:04.668 and I'm not going to spend too much
NOTE Confidence: 0.80027825

00:39:04.668 --> 00:39:07.159 time on this 'cause I already talked

NOTE Confidence: 0.80027825

00:39:07.159 --> 00:39:08.747 about population management dashboards,

NOTE Confidence: 0.80027825

00:39:08.750 --> 00:39:10.300 but what I've really mentioned,

NOTE Confidence: 0.80027825

00:39:10.300 --> 00:39:12.730 you know too.

NOTE Confidence: 0.80027825

00:39:12.730 --> 00:39:13.524 You know,

NOTE Confidence: 0.80027825

00:39:13.524 --> 00:39:16.700 some teams is what I need is a

NOTE Confidence: 0.80027825

00:39:16.808 --> 00:39:19.986 system that is going to tell me.

NOTE Confidence: 0.80027825

00:39:19.990 --> 00:39:23.428 Who do you need to care for and how?

NOTE Confidence: 0.80027825

00:39:23.430 --> 00:39:25.250 You know, and you know.

NOTE Confidence: 0.80027825

00:39:25.250 --> 00:39:28.146 Obviously it's it's meant to be a compliment.

NOTE Confidence: 0.80027825

00:39:28.150 --> 00:39:31.046 You know we're not going to dumb down,

NOTE Confidence: 0.80027825

00:39:31.050 --> 00:39:32.109 you know provider,

NOTE Confidence: 0.80027825

00:39:32.109 --> 00:39:35.050 you know work and expertise and so forth,

NOTE Confidence: 0.80027825

00:39:35.050 --> 00:39:37.682 but having this set of you know

NOTE Confidence: 0.80027825

00:39:37.682 --> 00:39:38.810 automated intelligent processes

NOTE Confidence: 0.8685474

00:39:38.874 --> 00:39:41.382 to to automate. You know patients who

NOTE Confidence: 0.8685474

00:39:41.382 --> 00:39:44.237 are at risk to provide suggestions you
NOTE Confidence: 0.8685474

00:39:44.237 --> 00:39:46.757 know based on in overwhelming set of
NOTE Confidence: 0.8685474

00:39:46.757 --> 00:39:49.568 data that a human just is not able to.
NOTE Confidence: 0.8685474

00:39:49.570 --> 00:39:53.422 You know that you know to you know to.
NOTE Confidence: 0.8685474

00:39:53.430 --> 00:39:56.158 You know view and process all that data.
NOTE Confidence: 0.8685474

00:39:56.160 --> 00:39:58.400 You know, for patients it you know,
NOTE Confidence: 0.8685474

00:39:58.400 --> 00:40:00.638 we certainly envision that having this
NOTE Confidence: 0.8685474

00:40:00.638 --> 00:40:03.565 type of system to tell us you know who's
NOTE Confidence: 0.8685474

00:40:03.565 --> 00:40:06.500 at risk and how to manage a patient is a
NOTE Confidence: 0.8685474

00:40:06.500 --> 00:40:08.640 you know is in clinical decision support
NOTE Confidence: 0.8685474

00:40:08.640 --> 00:40:10.880 tools that we believe can be very,
NOTE Confidence: 0.8685474

00:40:10.880 --> 00:40:13.015 very useful and effective, and make our
NOTE Confidence: 0.8685474

00:40:13.015 --> 00:40:15.039 care delivery a lot more efficient.
NOTE Confidence: 0.8685474

00:40:15.040 --> 00:40:17.322 So there's a kind of summarize the
NOTE Confidence: 0.8685474

00:40:17.322 --> 00:40:19.199 pension potential of big data here.
NOTE Confidence: 0.8685474

00:40:19.200 --> 00:40:21.440 You know over on the left side,

NOTE Confidence: 0.8685474

00:40:21.440 --> 00:40:23.701 our current challenges, and I think you

NOTE Confidence: 0.8685474

00:40:23.701 --> 00:40:26.697 know we can use big data to really address.

NOTE Confidence: 0.8685474

00:40:26.700 --> 00:40:28.716 Each of these challenges.

NOTE Confidence: 0.8685474

00:40:28.716 --> 00:40:32.850 So that our care is more proactive.

NOTE Confidence: 0.8685474

00:40:32.850 --> 00:40:36.503 You know it can be, you know more

NOTE Confidence: 0.8685474

00:40:36.503 --> 00:40:38.547 continuous rather than intermittent.

NOTE Confidence: 0.8685474

00:40:38.550 --> 00:40:40.690 We can personalize the management

NOTE Confidence: 0.8685474

00:40:40.690 --> 00:40:43.500 you know better for each patient.

NOTE Confidence: 0.8685474

00:40:43.500 --> 00:40:43.919 Uhm?

NOTE Confidence: 0.8685474

00:40:43.919 --> 00:40:44.757 You know,

NOTE Confidence: 0.8685474

00:40:44.757 --> 00:40:46.852 within a population management framework

NOTE Confidence: 0.8685474

00:40:46.852 --> 00:40:49.478 in to achieve optimal outcomes,

NOTE Confidence: 0.8685474

00:40:49.480 --> 00:40:51.850 you know that are tailored for

NOTE Confidence: 0.8685474

00:40:51.850 --> 00:40:53.035 each individual patient.

NOTE Confidence: 0.8685474

00:40:53.040 --> 00:40:56.200 So big Data has the potential to transform,

NOTE Confidence: 0.8685474

00:40:56.200 --> 00:40:56.990 you know,
NOTE Confidence: 0.8685474

00:40:56.990 --> 00:40:58.570 Sleep Medicine requires application.
NOTE Confidence: 0.8685474

00:40:58.570 --> 00:41:01.180 The tools which currently exist.
NOTE Confidence: 0.8685474

00:41:01.180 --> 00:41:03.045 How to make data useful
NOTE Confidence: 0.8685474

00:41:03.045 --> 00:41:04.164 for sleep specialists.
NOTE Confidence: 0.8685474

00:41:04.170 --> 00:41:06.040 They can empower sleep specialist
NOTE Confidence: 0.8685474

00:41:06.040 --> 00:41:07.536 with organizing patient data,
NOTE Confidence: 0.8685474

00:41:07.540 --> 00:41:08.662 providing clinical decision
NOTE Confidence: 0.8685474

00:41:08.662 --> 00:41:10.158 support to improve outcomes,
NOTE Confidence: 0.8685474

00:41:10.160 --> 00:41:12.128 provide care more efficiently.
NOTE Confidence: 0.8685474

00:41:12.128 --> 00:41:12.620 Thirdly,
NOTE Confidence: 0.8685474

00:41:12.620 --> 00:41:14.570 it has the potential empower patients
NOTE Confidence: 0.8685474

00:41:14.570 --> 00:41:16.279 with a more personalized approach
NOTE Confidence: 0.8685474

00:41:16.279 --> 00:41:18.029 with continuous care in fourth,
NOTE Confidence: 0.8685474

00:41:18.030 --> 00:41:19.638 artificial intelligence can potentially
NOTE Confidence: 0.8685474

00:41:19.638 --> 00:41:21.648 enhance virtually all aspects of

NOTE Confidence: 0.8685474

00:41:21.648 --> 00:41:23.766 of care along the end to end care.

NOTE Confidence: 0.8685474

00:41:23.770 --> 00:41:24.823 You know, spectrum.

NOTE Confidence: 0.8685474

00:41:24.823 --> 00:41:28.768 I I had to speak with the mirska Brown from,

NOTE Confidence: 0.8685474

00:41:28.770 --> 00:41:30.842 you know the NIH yesterday who can

NOTE Confidence: 0.8685474

00:41:30.842 --> 00:41:33.218 help a little meeting about big Data.

NOTE Confidence: 0.8685474

00:41:33.220 --> 00:41:35.656 And you know what the NIH can

NOTE Confidence: 0.8685474

00:41:35.656 --> 00:41:37.330 do and so forth.

NOTE Confidence: 0.8685474

00:41:37.330 --> 00:41:39.706 And one of the things that I you

NOTE Confidence: 0.8685474

00:41:39.706 --> 00:41:42.067 know really kind of emphasized in my,

NOTE Confidence: 0.8685474

00:41:42.070 --> 00:41:42.628 you know,

NOTE Confidence: 0.8685474

00:41:42.628 --> 00:41:44.581 kind of follow up email to her

NOTE Confidence: 0.8685474

00:41:44.581 --> 00:41:46.806 is that you know while you know

NOTE Confidence: 0.8685474

00:41:46.806 --> 00:41:48.710 some of this really advanced,

NOTE Confidence: 0.8685474

00:41:48.710 --> 00:41:50.420 you know big data machine learning

NOTE Confidence: 0.8685474

00:41:50.420 --> 00:41:52.469 stuff to look at various kinds

NOTE Confidence: 0.8685474

00:41:52.469 --> 00:41:54.594 of things are really interesting
NOTE Confidence: 0.8685474

00:41:54.594 --> 00:41:55.869 and scientifically necessary.
NOTE Confidence: 0.8685474

00:41:55.870 --> 00:41:56.590 You know,
NOTE Confidence: 0.8685474

00:41:56.590 --> 00:41:58.030 I cannot emphasize that.
NOTE Confidence: 0.8685474

00:41:58.030 --> 00:42:00.598 I thought that it was necessary
NOTE Confidence: 0.8685474

00:42:00.598 --> 00:42:02.310 that it's necessary to.
NOTE Confidence: 0.8685474

00:42:02.310 --> 00:42:05.478 You know to have a balanced approach you
NOTE Confidence: 0.8685474

00:42:05.478 --> 00:42:09.089 know to really be able to look at how AI.
NOTE Confidence: 0.8685474

00:42:09.090 --> 00:42:10.281 Can be supported.
NOTE Confidence: 0.8685474

00:42:10.281 --> 00:42:13.060 The development AI can be supported in
NOTE Confidence: 0.8685474

00:42:13.136 --> 00:42:15.614 a way where it can directly impact.
NOTE Confidence: 0.8685474

00:42:15.620 --> 00:42:18.206 Clinician work you know and and
NOTE Confidence: 0.8685474

00:42:18.206 --> 00:42:20.862 patience you know and and make
NOTE Confidence: 0.8685474

00:42:20.862 --> 00:42:23.400 you know I work more translatable
NOTE Confidence: 0.8685474

00:42:23.400 --> 00:42:25.730 into real world settings and so
NOTE Confidence: 0.8685474

00:42:25.730 --> 00:42:28.236 in a way that I think summarizes.

NOTE Confidence: 0.8685474

00:42:28.236 --> 00:42:30.266 You know my philosophical approach.

NOTE Confidence: 0.8685474

00:42:30.270 --> 00:42:32.706 You know, to this entire area,

NOTE Confidence: 0.8685474

00:42:32.710 --> 00:42:35.966 and you know, here's a number of different,

NOTE Confidence: 0.8685474

00:42:35.970 --> 00:42:37.174 you know,

NOTE Confidence: 0.8685474

00:42:37.174 --> 00:42:40.184 partners that have been very

NOTE Confidence: 0.8685474

00:42:40.184 --> 00:42:41.990 important in just.

NOTE Confidence: 0.8685474

00:42:41.990 --> 00:42:43.178 Collaborating together on

NOTE Confidence: 0.8685474

00:42:43.178 --> 00:42:44.366 this particular work,

NOTE Confidence: 0.8685474

00:42:44.370 --> 00:42:46.488 so I'll go ahead and stop

NOTE Confidence: 0.8685474

00:42:46.488 --> 00:42:47.900 right here and I'll

NOTE Confidence: 0.8701441

00:42:47.979 --> 00:42:51.179 turn this over to like probably you learn

NOTE Confidence: 0.8701441

00:42:51.179 --> 00:42:53.870 and happy to take questions. Great,

NOTE Confidence: 0.8701441

00:42:53.870 --> 00:42:56.432 yeah, thank you so much and everyone

NOTE Confidence: 0.8701441

00:42:56.432 --> 00:42:59.409 feel free to post questions and chat.

NOTE Confidence: 0.8701441

00:42:59.410 --> 00:43:01.786 We can open it up to

NOTE Confidence: 0.8701441

00:43:01.786 --> 00:43:03.370 questions to Doctor Wong.

NOTE Confidence: 0.8701441

00:43:03.370 --> 00:43:05.350 That was a fantastic overview.

NOTE Confidence: 0.8701441

00:43:05.350 --> 00:43:07.280 I think it really illustrates

NOTE Confidence: 0.8701441

00:43:07.280 --> 00:43:09.708 how much potential there is in

NOTE Confidence: 0.8701441

00:43:09.708 --> 00:43:11.843 Sleep Medicine for improving our

NOTE Confidence: 0.8701441

00:43:11.843 --> 00:43:13.890 care processes for patients and.

NOTE Confidence: 0.8701441

00:43:13.890 --> 00:43:15.895 Really, how uniquely suited sleep

NOTE Confidence: 0.8701441

00:43:15.895 --> 00:43:18.805 is with the amount of data that

NOTE Confidence: 0.8701441

00:43:18.805 --> 00:43:20.880 we're getting off devices to

NOTE Confidence: 0.8701441

00:43:20.880 --> 00:43:23.298 really tailor care to to patients?

NOTE Confidence: 0.8701441

00:43:23.300 --> 00:43:26.116 You know, one of the things that you

NOTE Confidence: 0.8701441

00:43:26.116 --> 00:43:28.491 alluded to with use of somewhere

NOTE Confidence: 0.8701441

00:43:28.491 --> 00:43:30.873 which got me excited 'cause the

NOTE Confidence: 0.8701441

00:43:30.956 --> 00:43:33.758 VA is about to be transitioning

NOTE Confidence: 0.8701441

00:43:33.758 --> 00:43:35.159 to somewhere nationally.

NOTE Confidence: 0.8701441

00:43:35.160 --> 00:43:37.060 As you probably know,

NOTE Confidence: 0.8701441

00:43:37.060 --> 00:43:39.435 for across the country was.

NOTE Confidence: 0.8701441

00:43:39.440 --> 00:43:42.919 And that we are good at identifying

NOTE Confidence: 0.8701441

00:43:42.919 --> 00:43:45.597 the patients who are not using

NOTE Confidence: 0.8701441

00:43:45.597 --> 00:43:48.620 PAP or at least a lot of the.

NOTE Confidence: 0.8701441

00:43:48.620 --> 00:43:51.120 The device manufacturers have been

NOTE Confidence: 0.8701441

00:43:51.120 --> 00:43:53.120 incentivized already to develop

NOTE Confidence: 0.8701441

00:43:53.120 --> 00:43:55.250 that on local device levels and

NOTE Confidence: 0.8701441

00:43:55.250 --> 00:43:57.978 to tell us who is not doing well

NOTE Confidence: 0.8701441

00:43:57.978 --> 00:44:00.186 and and what their adherence is,

NOTE Confidence: 0.8701441

00:44:00.190 --> 00:44:03.196 but I think for a lot of us the

NOTE Confidence: 0.8701441

00:44:03.196 --> 00:44:05.287 challenge is what to do with

NOTE Confidence: 0.8701441

00:44:05.287 --> 00:44:08.162 that at that point and when does

NOTE Confidence: 0.8701441

00:44:08.162 --> 00:44:10.957 intervention make the most difference,

NOTE Confidence: 0.8701441

00:44:10.960 --> 00:44:13.760 and what should the intervention look like?

NOTE Confidence: 0.8701441

00:44:13.760 --> 00:44:15.352 An obviously you're studying

NOTE Confidence: 0.8701441

00:44:15.352 --> 00:44:17.342 a lot of this stuff,
NOTE Confidence: 0.8701441

00:44:17.350 --> 00:44:19.894 but I guess just from a
NOTE Confidence: 0.8701441

00:44:19.894 --> 00:44:21.166 practical standpoint and.
NOTE Confidence: 0.8701441

00:44:21.170 --> 00:44:22.397 And you know,
NOTE Confidence: 0.8701441

00:44:22.397 --> 00:44:25.260 do you have any any particular insights,
NOTE Confidence: 0.8701441

00:44:25.260 --> 00:44:26.884 not necessarily data driven,
NOTE Confidence: 0.8701441

00:44:26.884 --> 00:44:29.320 but you know from your experience
NOTE Confidence: 0.8701441

00:44:29.394 --> 00:44:31.518 about what you recommend to centers
NOTE Confidence: 0.8701441

00:44:31.518 --> 00:44:34.446 that don't have as much data easily
NOTE Confidence: 0.8701441

00:44:34.446 --> 00:44:36.720 accessible and streamlined, is Kaiser.
NOTE Confidence: 0.8701441

00:44:36.720 --> 00:44:39.625 But we can get this kind of
NOTE Confidence: 0.8701441

00:44:39.625 --> 00:44:41.209 superficial level of hey,
NOTE Confidence: 0.8701441

00:44:41.210 --> 00:44:44.474 these are the patients who are non adherent.
NOTE Confidence: 0.8701441

00:44:44.480 --> 00:44:47.828 We can't build an app or a bot to
NOTE Confidence: 0.8701441

00:44:47.828 --> 00:44:50.619 remind all our patients by text,
NOTE Confidence: 0.8701441

00:44:50.620 --> 00:44:51.386 you know.

NOTE Confidence: 0.8701441

00:44:51.386 --> 00:44:54.067 That they should be using it and

NOTE Confidence: 0.8701441

00:44:54.067 --> 00:44:55.709 calculate their STD score.

NOTE Confidence: 0.8701441

00:44:55.710 --> 00:44:58.552 But should they be getting a phone

NOTE Confidence: 0.8701441

00:44:58.552 --> 00:45:00.639 call from an RT or or?

NOTE Confidence: 0.8701441

00:45:00.640 --> 00:45:02.908 What is the highest yield intervention?

NOTE Confidence: 0.8701441

00:45:02.910 --> 00:45:05.184 I don't know what would you

NOTE Confidence: 0.8701441

00:45:05.184 --> 00:45:06.700 recommend as a consultant,

NOTE Confidence: 0.8701441

00:45:06.700 --> 00:45:09.346 say to practices with with less integrated

NOTE Confidence: 0.82376504

00:45:09.350 --> 00:45:10.535 data than Kaiser.

NOTE Confidence: 0.82376504

00:45:10.535 --> 00:45:13.300 Yeah, I really good question and you

NOTE Confidence: 0.82376504

00:45:13.381 --> 00:45:15.796 know and and I'll just throw out.

NOTE Confidence: 0.82376504

00:45:15.800 --> 00:45:19.202 You know, maybe some you know some you know.

NOTE Confidence: 0.82376504

00:45:19.210 --> 00:45:22.850 Key examples you know that could be useful.

NOTE Confidence: 0.82376504

00:45:22.850 --> 00:45:24.761 You know the first of which is

NOTE Confidence: 0.82376504

00:45:24.761 --> 00:45:26.965 even just this automated process of

NOTE Confidence: 0.82376504

00:45:26.965 --> 00:45:29.165 delivering text messages to patients.
NOTE Confidence: 0.82376504

00:45:29.170 --> 00:45:30.574 You know automated automatically
NOTE Confidence: 0.82376504

00:45:30.574 --> 00:45:31.627 every three days.
NOTE Confidence: 0.82376504

00:45:31.630 --> 00:45:33.380 If they're not doing well,
NOTE Confidence: 0.82376504

00:45:33.380 --> 00:45:35.655 you know from our study we determined
NOTE Confidence: 0.82376504

00:45:35.655 --> 00:45:37.589 that there is a substantial,
NOTE Confidence: 0.82376504

00:45:37.590 --> 00:45:39.345 and you know statistically significant
NOTE Confidence: 0.82376504

00:45:39.345 --> 00:45:40.749 improvement in happen here,
NOTE Confidence: 0.82376504

00:45:40.750 --> 00:45:43.319 and so overtime you know without any
NOTE Confidence: 0.82376504

00:45:43.319 --> 00:45:44.960 additional provider intervention you know,
NOTE Confidence: 0.82376504

00:45:44.960 --> 00:45:45.974 so you know,
NOTE Confidence: 0.82376504

00:45:45.974 --> 00:45:48.340 I think that is certainly one tool
NOTE Confidence: 0.82376504

00:45:48.418 --> 00:45:50.578 you know that can be utilized.
NOTE Confidence: 0.82376504

00:45:50.580 --> 00:45:51.908 Part of our work,
NOTE Confidence: 0.82376504

00:45:51.908 --> 00:45:54.530 also in terms of developing machine learning.
NOTE Confidence: 0.82376504

00:45:54.530 --> 00:45:56.606 You know clinical decision support tools.

NOTE Confidence: 0.82376504

00:45:56.610 --> 00:45:57.958 We are actually also,

NOTE Confidence: 0.82376504

00:45:57.958 --> 00:45:59.643 you know creating prediction models

NOTE Confidence: 0.82376504

00:45:59.643 --> 00:46:01.799 based on different sets of information.

NOTE Confidence: 0.82376504

00:46:01.800 --> 00:46:02.838 So for example,

NOTE Confidence: 0.82376504

00:46:02.838 --> 00:46:05.260 you know trying to determine if a

NOTE Confidence: 0.82376504

00:46:05.332 --> 00:46:08.365 patient is going to do well on pap therapy,

NOTE Confidence: 0.82376504

00:46:08.370 --> 00:46:10.568 or if you know timing of when

NOTE Confidence: 0.82376504

00:46:10.568 --> 00:46:13.075 they're going to not do well and

NOTE Confidence: 0.82376504

00:46:13.075 --> 00:46:14.935 lose engagement with pap therapy,

NOTE Confidence: 0.82376504

00:46:14.940 --> 00:46:16.670 you know we're using different

NOTE Confidence: 0.82376504

00:46:16.670 --> 00:46:17.708 sets of information.

NOTE Confidence: 0.82376504

00:46:17.710 --> 00:46:18.793 So for example,

NOTE Confidence: 0.82376504

00:46:18.793 --> 00:46:20.959 you know we may just isolate

NOTE Confidence: 0.82376504

00:46:20.959 --> 00:46:22.460 the PAP adherence.

NOTE Confidence: 0.82376504

00:46:22.460 --> 00:46:24.948 You know, you know daily CPAP data right?

NOTE Confidence: 0.82376504

00:46:24.950 --> 00:46:26.500 Or you know we can,
NOTE Confidence: 0.82376504

00:46:26.500 --> 00:46:28.288 you know take that along with
NOTE Confidence: 0.82376504

00:46:28.288 --> 00:46:29.920 a sleep study data right?
NOTE Confidence: 0.82376504

00:46:29.920 --> 00:46:31.915 Or we can take that and even
NOTE Confidence: 0.82376504

00:46:31.915 --> 00:46:33.970 add to an EHR data right?
NOTE Confidence: 0.82376504

00:46:33.970 --> 00:46:36.140 And so we can have these different,
NOTE Confidence: 0.82376504

00:46:36.140 --> 00:46:37.695 you know prediction models based
NOTE Confidence: 0.82376504

00:46:37.695 --> 00:46:39.250 on different sets of data.
NOTE Confidence: 0.82376504

00:46:39.250 --> 00:46:41.462 So for assistance that have a fully
NOTE Confidence: 0.82376504

00:46:41.462 --> 00:46:42.990 integrated you know data set,
NOTE Confidence: 0.82376504

00:46:42.990 --> 00:46:45.334 you know some of these you know you
NOTE Confidence: 0.82376504

00:46:45.334 --> 00:46:47.520 know being able to add in available
NOTE Confidence: 0.82376504

00:46:47.520 --> 00:46:50.139 data you know very well could be useful.
NOTE Confidence: 0.82376504

00:46:50.140 --> 00:46:52.000 But for some systems in which
NOTE Confidence: 0.82376504

00:46:52.000 --> 00:46:54.230 maybe the data is more isolated.
NOTE Confidence: 0.82376504

00:46:54.230 --> 00:46:56.596 And maybe a little bit less diverse.

NOTE Confidence: 0.82376504
00:46:56.600 --> 00:46:57.280 You know,
NOTE Confidence: 0.82376504
00:46:57.280 --> 00:46:59.320 prediction algorithms may still be useful,
NOTE Confidence: 0.82376504
00:46:59.320 --> 00:47:00.672 you know, because of,
NOTE Confidence: 0.82376504
00:47:00.672 --> 00:47:02.362 you know our approach to.
NOTE Confidence: 0.82376504
00:47:02.370 --> 00:47:03.118 You know,
NOTE Confidence: 0.82376504
00:47:03.118 --> 00:47:04.240 creating different prediction
NOTE Confidence: 0.82376504
00:47:04.240 --> 00:47:06.744 models based on what the you know
NOTE Confidence: 0.82376504
00:47:06.744 --> 00:47:08.460 available data you know might be
NOTE Confidence: 0.82376504
00:47:08.460 --> 00:47:10.500 for you know any given practice.
NOTE Confidence: 0.66028935
00:47:12.000 --> 00:47:13.410 Gotcha, thank you.
NOTE Confidence: 0.69161516
00:47:16.110 --> 00:47:18.098 Hey Dennis, nice talk.
NOTE Confidence: 0.69161516
00:47:18.098 --> 00:47:21.670 This is Andres in truck from Yale.
NOTE Confidence: 0.69161516
00:47:21.670 --> 00:47:23.130 I also like your house,
NOTE Confidence: 0.69161516
00:47:23.130 --> 00:47:24.009 looks really great.
NOTE Confidence: 0.8375187
00:47:25.430 --> 00:47:26.560 It's a virtual background, 'cause
NOTE Confidence: 0.8375187

00:47:26.560 --> 00:47:28.458 if I turned it off you'd see that
NOTE Confidence: 0.8375187

00:47:28.458 --> 00:47:29.904 I'm actually standing in my closet.
NOTE Confidence: 0.8530066

00:47:31.960 --> 00:47:35.248 You got it. You got an awesome closet.
NOTE Confidence: 0.8530066

00:47:35.250 --> 00:47:37.777 I I think it's you know I.
NOTE Confidence: 0.8530066

00:47:37.780 --> 00:47:39.580 I agree with you wholeheartedly.
NOTE Confidence: 0.8530066

00:47:39.580 --> 00:47:42.088 That I think that we probably
NOTE Confidence: 0.8530066

00:47:42.088 --> 00:47:44.128 overshot expectations for AI in
NOTE Confidence: 0.8530066

00:47:44.128 --> 00:47:46.432 the last five or ten years or so.
NOTE Confidence: 0.8530066

00:47:46.440 --> 00:47:49.450 And maybe it's really best suited to
NOTE Confidence: 0.8530066

00:47:49.450 --> 00:47:52.730 make us cyborgs rather than replace us.
NOTE Confidence: 0.8530066

00:47:52.730 --> 00:47:54.622 As as you're suggesting,
NOTE Confidence: 0.8530066

00:47:54.622 --> 00:47:56.514 and so you know,
NOTE Confidence: 0.8530066

00:47:56.520 --> 00:48:00.894 I guess I did want to ask a question
NOTE Confidence: 0.8530066

00:48:00.894 --> 00:48:04.826 about the slide where you had looked
NOTE Confidence: 0.8530066

00:48:04.826 --> 00:48:09.478 at brain age with the ENSO data folks.
NOTE Confidence: 0.8530066

00:48:09.480 --> 00:48:10.914 And just curious,

NOTE Confidence: 0.8530066

00:48:10.914 --> 00:48:13.304 is that metric generated through?

NOTE Confidence: 0.8530066

00:48:13.310 --> 00:48:16.274 What feature is it selecting some

NOTE Confidence: 0.8530066

00:48:16.274 --> 00:48:18.580 specific features from the EG?

NOTE Confidence: 0.8530066

00:48:18.580 --> 00:48:21.926 Or how is that brain age generated?

NOTE Confidence: 0.8530066

00:48:21.930 --> 00:48:26.482 One of the challenges with AI is in

NOTE Confidence: 0.8530066

00:48:26.482 --> 00:48:30.140 machine learning is that sometimes the.

NOTE Confidence: 0.8530066

00:48:30.140 --> 00:48:32.438 The mechanisms or the pathways by

NOTE Confidence: 0.8530066

00:48:32.438 --> 00:48:34.721 which marker is determined are not

NOTE Confidence: 0.8530066

00:48:34.721 --> 00:48:36.779 very clear and still I'm wondering,

NOTE Confidence: 0.8530066

00:48:36.780 --> 00:48:38.820 is there some physiological

NOTE Confidence: 0.8530066

00:48:38.820 --> 00:48:41.370 possibility to that brain age?

NOTE Confidence: 0.8530066

00:48:41.370 --> 00:48:43.183 At that we can glean from what

NOTE Confidence: 0.8530066

00:48:43.183 --> 00:48:45.208 you guys have done within so data.

NOTE Confidence: 0.8779016

00:48:45.980 --> 00:48:47.470 Yeah, that's a good question.

NOTE Confidence: 0.8779016

00:48:47.470 --> 00:48:50.620 Really. Great question as always.

NOTE Confidence: 0.8779016

00:48:50.620 --> 00:48:54.742 And in I'll kind of emphasize a little bit.

NOTE Confidence: 0.8779016

00:48:54.750 --> 00:48:58.242 Again, my ignorance and in regards

NOTE Confidence: 0.8779016

00:48:58.242 --> 00:49:01.150 to actual machine learning work.

NOTE Confidence: 0.8779016

00:49:01.150 --> 00:49:03.516 And I and I and then sedated.

NOTE Confidence: 0.8779016

00:49:03.520 --> 00:49:05.220 People are really the people

NOTE Confidence: 0.8779016

00:49:05.220 --> 00:49:07.257 that you know, did this work?

NOTE Confidence: 0.8779016

00:49:07.257 --> 00:49:10.298 And so I don't want to claim, you know,

NOTE Confidence: 0.8779016

00:49:10.298 --> 00:49:12.970 too much or really if any credit you

NOTE Confidence: 0.8779016

00:49:13.044 --> 00:49:15.915 know for this now you know what they did

NOTE Confidence: 0.8779016

00:49:15.915 --> 00:49:18.749 was you know I'm I don't know whether

NOTE Confidence: 0.8779016

00:49:18.749 --> 00:49:21.100 they were able to identify specific patterns.

NOTE Confidence: 0.8779016

00:49:21.100 --> 00:49:23.465 You know that they were able to

NOTE Confidence: 0.8779016

00:49:23.465 --> 00:49:25.220 recognize through this, you know,

NOTE Confidence: 0.8779016

00:49:25.220 --> 00:49:26.240 dynamic dynamic phenotyping,

NOTE Confidence: 0.8779016

00:49:26.240 --> 00:49:28.606 you know, type of process, you know.

NOTE Confidence: 0.8779016

00:49:28.606 --> 00:49:30.687 But it was e.g EMG, EOG.

NOTE Confidence: 0.8779016

00:49:30.687 --> 00:49:33.396 And in select you know HR information.

NOTE Confidence: 0.8779016

00:49:33.400 --> 00:49:34.309 Essentially, Unicorn abilities,

NOTE Confidence: 0.8779016

00:49:34.309 --> 00:49:35.824 age, demographic and so forth.

NOTE Confidence: 0.8779016

00:49:35.830 --> 00:49:37.636 They did a bit of supervised,

NOTE Confidence: 0.8779016

00:49:37.640 --> 00:49:39.458 you know learning you know to,

NOTE Confidence: 0.8779016

00:49:39.460 --> 00:49:40.110 you know,

NOTE Confidence: 0.8779016

00:49:40.110 --> 00:49:41.735 create their initial model and

NOTE Confidence: 0.8779016

00:49:41.735 --> 00:49:44.091 then they you know did a bit of

NOTE Confidence: 0.8779016

00:49:44.091 --> 00:49:46.094 clustering and so that can that that

NOTE Confidence: 0.8779016

00:49:46.094 --> 00:49:48.243 middle graph that I showed you with

NOTE Confidence: 0.8779016

00:49:48.243 --> 00:49:50.095 those you know pretty colors and

NOTE Confidence: 0.8779016

00:49:50.095 --> 00:49:52.278 almost would even looks like a brain

NOTE Confidence: 0.8779016

00:49:52.278 --> 00:49:54.006 stem you know was the clustering.

NOTE Confidence: 0.8779016

00:49:54.010 --> 00:49:55.942 You know that looking at the

NOTE Confidence: 0.8779016

00:49:55.942 --> 00:49:57.574 different phenotypes but you know

NOTE Confidence: 0.8779016

00:49:57.574 --> 00:49:59.548 by itself you know we don't know
NOTE Confidence: 0.8779016

00:49:59.548 --> 00:50:00.970 whether it's useful or not.
NOTE Confidence: 0.8779016

00:50:00.970 --> 00:50:03.010 You know we need where?
NOTE Confidence: 0.8779016

00:50:03.010 --> 00:50:04.888 Proceeding with trying to validate this,
NOTE Confidence: 0.8779016

00:50:04.890 --> 00:50:05.492 you know,
NOTE Confidence: 0.8779016

00:50:05.492 --> 00:50:07.900 with within a new and much larger data
NOTE Confidence: 0.8779016

00:50:07.967 --> 00:50:10.207 set you know within you know within
NOTE Confidence: 0.8779016

00:50:10.207 --> 00:50:12.461 Kaiser and then being able to you
NOTE Confidence: 0.8779016

00:50:12.461 --> 00:50:14.633 know do that type of validation and
NOTE Confidence: 0.8779016

00:50:14.633 --> 00:50:16.248 then additional validation work to
NOTE Confidence: 0.8779016

00:50:16.248 --> 00:50:18.433 see whether you know how to implement
NOTE Confidence: 0.8779016

00:50:18.433 --> 00:50:20.386 this or whether it's even going to
NOTE Confidence: 0.8779016

00:50:20.444 --> 00:50:22.084 be useful for actual implementation
NOTE Confidence: 0.8779016

00:50:22.084 --> 00:50:24.044 in a real world clinical setting
NOTE Confidence: 0.8779016

00:50:24.044 --> 00:50:26.556 I think is still up in the air,
NOTE Confidence: 0.8779016

00:50:26.560 --> 00:50:28.438 so it's really just kind of,

NOTE Confidence: 0.8779016

00:50:28.440 --> 00:50:30.428 you know step one of I think

NOTE Confidence: 0.8779016

00:50:30.428 --> 00:50:31.900 a much longer journey.

NOTE Confidence: 0.8779016

00:50:31.900 --> 00:50:32.530 Oh yeah

NOTE Confidence: 0.8695296

00:50:32.530 --> 00:50:35.365 no, it's just a very cool concept of looking

NOTE Confidence: 0.8695296

00:50:35.365 --> 00:50:38.239 at something that is a better marker of.

NOTE Confidence: 0.8695296

00:50:38.240 --> 00:50:39.911 Outcomes in patients.

NOTE Confidence: 0.8695296

00:50:39.911 --> 00:50:43.253 Then what we look at traditionally?

NOTE Confidence: 0.8695296

00:50:43.260 --> 00:50:45.654 And I guess the last one ask for more

NOTE Confidence: 0.8695296

00:50:45.654 --> 00:50:47.302 question about the oximetry sensor

NOTE Confidence: 0.8695296

00:50:47.302 --> 00:50:49.647 that you were using and whether you

NOTE Confidence: 0.8695296

00:50:49.647 --> 00:50:51.789 found that to be useful at predicting

NOTE Confidence: 0.8695296

00:50:51.789 --> 00:50:53.940 who's going to compensate and who from.

NOTE Confidence: 0.8695296

00:50:53.940 --> 00:50:55.460 You know your product failure.

NOTE Confidence: 0.8695296

00:50:55.460 --> 00:50:57.900 Patients needs to be addressed ahead of time,

NOTE Confidence: 0.8695296

00:50:57.900 --> 00:51:00.645 and if So what was your experience with them?

NOTE Confidence: 0.8789532999999999

00:51:01.540 --> 00:51:03.898 Yeah, we have. I think about and I think
NOTE Confidence: 0.8789532999999999

00:51:03.898 --> 00:51:06.147 you you know you've been playing around
NOTE Confidence: 0.8789532999999999

00:51:06.147 --> 00:51:08.717 with the device as well and so I think
NOTE Confidence: 0.8789532999999999

00:51:08.717 --> 00:51:10.780 at this point we have about 60 patients.
NOTE Confidence: 0.8789532999999999

00:51:10.780 --> 00:51:14.376 Who are, you know, in this particular pilot.
NOTE Confidence: 0.8789532999999999

00:51:14.380 --> 00:51:16.179 And we found it to be useful.
NOTE Confidence: 0.8789532999999999

00:51:16.180 --> 00:51:17.954 I don't. I wish I, you know,
NOTE Confidence: 0.8789532999999999

00:51:17.954 --> 00:51:19.189 it's been awhile since I've
NOTE Confidence: 0.8789532999999999

00:51:19.189 --> 00:51:20.550 presented the data presented to,
NOTE Confidence: 0.8789532999999999

00:51:20.550 --> 00:51:22.086 you know, one of our committees,
NOTE Confidence: 0.8789532999999999

00:51:22.090 --> 00:51:24.720 you know to get formal.
NOTE Confidence: 0.8789532999999999

00:51:24.720 --> 00:51:26.120 Engagement with you know you
NOTE Confidence: 0.8789532999999999

00:51:26.120 --> 00:51:27.240 know contract ING formally.
NOTE Confidence: 0.8789532999999999

00:51:27.240 --> 00:51:29.340 You know for this you know device
NOTE Confidence: 0.8789532999999999

00:51:29.340 --> 00:51:31.620 that we're still under a pilot status
NOTE Confidence: 0.8789532999999999

00:51:31.620 --> 00:51:33.600 before we can replicate it around.

NOTE Confidence: 0.878953299999999

00:51:33.600 --> 00:51:34.960 You know the country really?

NOTE Confidence: 0.878953299999999

00:51:34.960 --> 00:51:37.136 You know for Kaiser, but when we do,

NOTE Confidence: 0.878953299999999

00:51:37.140 --> 00:51:39.308 I think we'll have, you know much better.

NOTE Confidence: 0.878953299999999

00:51:39.310 --> 00:51:41.758 You know data to be able to work with.

NOTE Confidence: 0.878953299999999

00:51:41.760 --> 00:51:43.386 But in terms of our preliminary,

NOTE Confidence: 0.878953299999999

00:51:43.390 --> 00:51:44.750 you know, kind of experience,

NOTE Confidence: 0.878953299999999

00:51:44.750 --> 00:51:46.926 you know, I wish I had the numbers,

NOTE Confidence: 0.878953299999999

00:51:46.930 --> 00:51:48.290 you know, easily pulled up,

NOTE Confidence: 0.878953299999999

00:51:48.290 --> 00:51:49.274 you know, for you,

NOTE Confidence: 0.878953299999999

00:51:49.274 --> 00:51:51.454 you know we found it to be #1

NOTE Confidence: 0.878953299999999

00:51:51.454 --> 00:51:52.098 very successful.

NOTE Confidence: 0.878953299999999

00:51:52.100 --> 00:51:54.108 You know, in that you know 90 plus

NOTE Confidence: 0.878953299999999

00:51:54.108 --> 00:51:55.899 percent of patients were able to.

NOTE Confidence: 0.878953299999999

00:51:55.900 --> 00:51:58.268 I think 95 plus percent of patients were

NOTE Confidence: 0.878953299999999

00:51:58.268 --> 00:52:00.978 able to use it and to be able to put on

NOTE Confidence: 0.878953299999999

00:52:00.978 --> 00:52:03.248 their cell phone and to have you know,
NOTE Confidence: 0.8789532999999999

00:52:03.250 --> 00:52:05.380 data coming through.
NOTE Confidence: 0.8789532999999999

00:52:05.380 --> 00:52:05.776 Secondly,
NOTE Confidence: 0.8789532999999999

00:52:05.776 --> 00:52:10.069 we found it to be useful in a wide set of,
NOTE Confidence: 0.8789532999999999

00:52:10.070 --> 00:52:12.416 you know type of you know
NOTE Confidence: 0.8789532999999999

00:52:12.416 --> 00:52:13.984 clinical circumstances, you know.
NOTE Confidence: 0.8789532999999999

00:52:13.984 --> 00:52:15.160 So for example,
NOTE Confidence: 0.8789532999999999

00:52:15.160 --> 00:52:17.603 being able to use a short term
NOTE Confidence: 0.8789532999999999

00:52:17.603 --> 00:52:20.451 just to determine if the patient is
NOTE Confidence: 0.8789532999999999

00:52:20.451 --> 00:52:22.601 responding adequately to either oxygen
NOTE Confidence: 0.8789532999999999

00:52:22.601 --> 00:52:25.509 or noninvasive ventilation you know.
NOTE Confidence: 0.8789532999999999

00:52:25.510 --> 00:52:27.574 You know, you know that that's been useful.
NOTE Confidence: 0.8789532999999999

00:52:27.580 --> 00:52:28.880 We've also found it useful.
NOTE Confidence: 0.8789532999999999

00:52:28.880 --> 00:52:29.366 You know,
NOTE Confidence: 0.8789532999999999

00:52:29.366 --> 00:52:30.581 for long term management and
NOTE Confidence: 0.8789532999999999

00:52:30.581 --> 00:52:32.239 so for some of these patients,

NOTE Confidence: 0.8789532999999999
00:52:32.240 --> 00:52:33.120 we just, you know,
NOTE Confidence: 0.8789532999999999
00:52:33.120 --> 00:52:35.349 even though we call it an indefinite loner,
NOTE Confidence: 0.8789532999999999
00:52:35.350 --> 00:52:37.170 you know there's just code for saying,
NOTE Confidence: 0.8789532999999999
00:52:37.170 --> 00:52:39.266 you know, you get to keep it just
NOTE Confidence: 0.8789532999999999
00:52:39.266 --> 00:52:41.049 you just have to use it, right?
NOTE Confidence: 0.8789532999999999
00:52:41.049 --> 00:52:41.567 You know.
NOTE Confidence: 0.8789532999999999
00:52:41.567 --> 00:52:43.380 And so if you don't use it,
NOTE Confidence: 0.8789532999999999
00:52:43.380 --> 00:52:44.940 we're going to take it back.
NOTE Confidence: 0.8789532999999999
00:52:44.940 --> 00:52:46.476 You know, 'cause I into providing
NOTE Confidence: 0.8789532999999999
00:52:46.476 --> 00:52:48.300 incentive for them to actually use it.
NOTE Confidence: 0.8789532999999999
00:52:48.300 --> 00:52:50.364 So we were protocol in which you know,
NOTE Confidence: 0.8789532999999999
00:52:50.370 --> 00:52:52.127 we asked the patient to use it
NOTE Confidence: 0.8789532999999999
00:52:52.127 --> 00:52:53.738 three times a week at least,
NOTE Confidence: 0.8789532999999999
00:52:53.740 --> 00:52:55.618 and then obviously, if they are.
NOTE Confidence: 0.8789532999999999
00:52:55.620 --> 00:52:57.330 Looking like there are risk,
NOTE Confidence: 0.8789532999999999

00:52:57.330 --> 00:52:59.376 you know, a little bit borderline.
NOTE Confidence: 0.8789532999999999

00:52:59.380 --> 00:53:02.458 You know we asked him to wear it everyday,
NOTE Confidence: 0.8789532999999999

00:53:02.460 --> 00:53:04.170 you know and so forth.
NOTE Confidence: 0.8789532999999999

00:53:04.170 --> 00:53:05.534 And we found it.
NOTE Confidence: 0.8789532999999999

00:53:05.534 --> 00:53:06.557 You know very,
NOTE Confidence: 0.8789532999999999

00:53:06.560 --> 00:53:08.265 very useful for things like
NOTE Confidence: 0.8789532999999999

00:53:08.265 --> 00:53:10.330 titrating how much oxygen they need.
NOTE Confidence: 0.8789532999999999

00:53:10.330 --> 00:53:10.998 You know,
NOTE Confidence: 0.8789532999999999

00:53:10.998 --> 00:53:13.002 for determining or feeling more secure
NOTE Confidence: 0.8789532999999999

00:53:13.002 --> 00:53:15.421 that the patient is not at risk and
NOTE Confidence: 0.8789532999999999

00:53:15.421 --> 00:53:17.434 for whatever reason I cannot recall
NOTE Confidence: 0.8789532999999999

00:53:17.434 --> 00:53:19.900 any patients that started to decompensate.
NOTE Confidence: 0.8789532999999999

00:53:19.900 --> 00:53:21.610 And we're like, oh boy,
NOTE Confidence: 0.8789532999999999

00:53:21.610 --> 00:53:22.918 you know your oxygen.
NOTE Confidence: 0.8789532999999999

00:53:22.918 --> 00:53:24.880 Your ring data is starting to
NOTE Confidence: 0.8789532999999999

00:53:24.944 --> 00:53:26.739 turn in the wrong direction.

NOTE Confidence: 0.8789532999999999
00:53:26.740 --> 00:53:29.575 You know we need to come in.
NOTE Confidence: 0.8789532999999999
00:53:29.580 --> 00:53:31.610 And we need to intervene 'cause you're
NOTE Confidence: 0.8789532999999999
00:53:31.610 --> 00:53:33.630 about to end up in the hospital.
NOTE Confidence: 0.8789532999999999
00:53:33.630 --> 00:53:35.020 And I don't know whether
NOTE Confidence: 0.8789532999999999
00:53:35.020 --> 00:53:36.410 it's just because we got
NOTE Confidence: 0.84694403
00:53:36.466 --> 00:53:38.489 lucky or I don't know whether it's
NOTE Confidence: 0.84694403
00:53:38.489 --> 00:53:40.567 maybe using this ring, you know type
NOTE Confidence: 0.84694403
00:53:40.567 --> 00:53:42.590 of thing and and work close TPN,
NOTE Confidence: 0.84694403
00:53:42.590 --> 00:53:44.396 you know with the ring were able
NOTE Confidence: 0.84694403
00:53:44.396 --> 00:53:46.281 to optimize their treatment and so
NOTE Confidence: 0.84694403
00:53:46.281 --> 00:53:47.685 they're they're not decompensating
NOTE Confidence: 0.84694403
00:53:47.685 --> 00:53:49.520 as as frequently or maybe so I.
NOTE Confidence: 0.84694403
00:53:49.520 --> 00:53:51.215 I think it's probably probably
NOTE Confidence: 0.84694403
00:53:51.215 --> 00:53:53.311 more than former who were just
NOTE Confidence: 0.84694403
00:53:53.311 --> 00:53:54.976 getting lucky at this point.
NOTE Confidence: 0.84694403

00:53:54.980 --> 00:53:56.214 But we certainly anticipate that
NOTE Confidence: 0.84694403

00:53:56.214 --> 00:53:58.311 you know we're going to be able to
NOTE Confidence: 0.84694403

00:53:58.311 --> 00:53:59.806 eventually recognize patients who are
NOTE Confidence: 0.84694403

00:53:59.806 --> 00:54:01.434 decompensating be able to, you know,
NOTE Confidence: 0.84694403

00:54:01.434 --> 00:54:03.096 provide early intervention and to keep
NOTE Confidence: 0.84694403

00:54:03.096 --> 00:54:04.899 them keep them out of the hospital.
NOTE Confidence: 0.8286967

00:54:07.510 --> 00:54:09.440 Great, thank you so much.
NOTE Confidence: 0.8286967

00:54:09.440 --> 00:54:11.648 I think given the time we
NOTE Confidence: 0.8286967

00:54:11.648 --> 00:54:14.069 will will wrap up with that.
NOTE Confidence: 0.8286967

00:54:14.070 --> 00:54:16.206 I just want to let everybody
NOTE Confidence: 0.8286967

00:54:16.206 --> 00:54:18.474 know about our last three talks
NOTE Confidence: 0.8286967

00:54:18.474 --> 00:54:21.169 for the year before we have our
NOTE Confidence: 0.8286967

00:54:21.169 --> 00:54:23.338 internal sleep Jeopardy in June.
NOTE Confidence: 0.8286967

00:54:23.340 --> 00:54:26.092 So we have three talks that are all
NOTE Confidence: 0.8286967

00:54:26.092 --> 00:54:28.060 actually on hypersomnia coming up
NOTE Confidence: 0.8286967

00:54:28.060 --> 00:54:30.874 and next week we're going to hear

NOTE Confidence: 0.8286967

00:54:30.954 --> 00:54:33.366 from one of our clinical fellows,

NOTE Confidence: 0.8286967

00:54:33.370 --> 00:54:35.485 Doctor Otukolo who's going to

NOTE Confidence: 0.8286967

00:54:35.485 --> 00:54:37.600 speak about RBD in narcolepsy.

NOTE Confidence: 0.8286967

00:54:37.600 --> 00:54:39.170 And then stay tuned for.

NOTE Confidence: 0.8286967

00:54:39.170 --> 00:54:40.988 I'll announce the the talks for

NOTE Confidence: 0.8286967

00:54:40.988 --> 00:54:42.919 the final two weeks after that,

NOTE Confidence: 0.8286967

00:54:42.920 --> 00:54:44.798 but again, thank you so much.

NOTE Confidence: 0.8286967

00:54:44.800 --> 00:54:45.424 Doctor Huang.

NOTE Confidence: 0.8286967

00:54:45.424 --> 00:54:46.672 That was really incredibly

NOTE Confidence: 0.8286967

00:54:46.672 --> 00:54:47.296 informative inspirational,

NOTE Confidence: 0.8286967

00:54:47.300 --> 00:54:47.816 I think.

NOTE Confidence: 0.8286967

00:54:47.816 --> 00:54:50.241 Gave all of us a lot of ideas for

NOTE Confidence: 0.8286967

00:54:50.241 --> 00:54:52.285 how we can be taking better care

NOTE Confidence: 0.8286967

00:54:52.285 --> 00:54:54.498 of our patients and processes.

NOTE Confidence: 0.8286967

00:54:54.500 --> 00:54:56.684 We can consider in our own practices.

NOTE Confidence: 0.8286967

00:54:56.690 --> 00:54:58.260 So thank you so much.

NOTE Confidence: 0.8789892

00:54:59.480 --> 00:55:01.608 Yeah, thank you everyone for the invite.

NOTE Confidence: 0.8789892

00:55:01.610 --> 00:55:04.838 Great to connect with you all.

NOTE Confidence: 0.8789892

00:55:04.840 --> 00:55:06.020 Thank you, thanks so much.

NOTE Confidence: 0.86025167

00:55:06.790 --> 00:55:08.105 Great take, care see you

NOTE Confidence: 0.86025167

00:55:08.105 --> 00:55:09.420 ever see you next week?