

WEBVTT

NOTE duration:"00:56:13.2800000"

NOTE recognizability:0.900

NOTE language:en-us

NOTE Confidence: 0.6921429675

00:00:00.000 --> 00:00:03.020 It's just a, it's just an honor

NOTE Confidence: 0.6921429675

00:00:03.020 --> 00:00:04.639 to be here and to join all of you.

NOTE Confidence: 0.6921429675

00:00:04.640 --> 00:00:06.775 And I have so many wonderful friends

NOTE Confidence: 0.6921429675

00:00:06.775 --> 00:00:08.839 and colleagues at Yale and I see

NOTE Confidence: 0.6921429675

00:00:08.839 --> 00:00:10.465 some familiar names here and very

NOTE Confidence: 0.6921429675

00:00:10.531 --> 00:00:12.400 excited to be with you all today.

NOTE Confidence: 0.6921429675

00:00:12.400 --> 00:00:14.612 So I'm going to go ahead and

NOTE Confidence: 0.6921429675

00:00:14.612 --> 00:00:16.000 share my screen here.

NOTE Confidence: 0.956655879

00:00:18.720 --> 00:00:20.176 So as you heard,

NOTE Confidence: 0.956655879

00:00:20.176 --> 00:00:22.777 I'm going to be talking about digital

NOTE Confidence: 0.956655879

00:00:22.777 --> 00:00:25.279 health as applied to mental health.

NOTE Confidence: 0.956655879

00:00:25.280 --> 00:00:27.832 And I know several of you on this

NOTE Confidence: 0.956655879

00:00:27.832 --> 00:00:30.748 call are working in this space and

NOTE Confidence: 0.956655879

00:00:30.748 --> 00:00:32.948 doing really pioneering work and

NOTE Confidence: 0.956655879

00:00:33.032 --> 00:00:35.157 exciting work in this space.

NOTE Confidence: 0.956655879

00:00:35.160 --> 00:00:36.900 And really excited to have a

NOTE Confidence: 0.956655879

00:00:36.900 --> 00:00:38.684 continued dialogue at the end of

NOTE Confidence: 0.956655879

00:00:38.684 --> 00:00:40.672 this lecture today and and hear what

NOTE Confidence: 0.956655879

00:00:40.672 --> 00:00:42.198 questions and comments you have,

NOTE Confidence: 0.956655879

00:00:42.200 --> 00:00:43.292 but also to learn more about what

NOTE Confidence: 0.956655879

00:00:43.292 --> 00:00:44.600 you all are building in this space.

NOTE Confidence: 0.956655879

00:00:44.600 --> 00:00:46.217 And I'm going to talk today about

NOTE Confidence: 0.956655879

00:00:46.217 --> 00:00:47.997 just sort of where we are in terms

NOTE Confidence: 0.956655879

00:00:47.997 --> 00:00:49.721 of the state of the science of

NOTE Confidence: 0.956655879

00:00:49.721 --> 00:00:52.164 applying digital health to mental

NOTE Confidence: 0.956655879

00:00:52.164 --> 00:00:54.447 health and addiction and give you

NOTE Confidence: 0.956655879

00:00:54.447 --> 00:00:56.050 a snapshot of sort of the scope

NOTE Confidence: 0.956655879

00:00:56.109 --> 00:00:57.971 of the science and how we can

NOTE Confidence: 0.956655879

00:00:57.971 --> 00:00:59.240 implement these tools in real,

NOTE Confidence: 0.956655879

00:00:59.240 --> 00:01:01.080 real world settings to really

NOTE Confidence: 0.956655879

00:01:01.080 --> 00:01:02.552 transform models of care.

NOTE Confidence: 0.956655879

00:01:02.560 --> 00:01:04.072 And then I'll tell you a little bit

NOTE Confidence: 0.956655879

00:01:04.072 --> 00:01:05.318 more about our Research Center.

NOTE Confidence: 0.956655879

00:01:05.320 --> 00:01:07.749 We have an Ida funded center as

NOTE Confidence: 0.956655879

00:01:07.749 --> 00:01:09.222 Stephanie mentioned that's entirely

NOTE Confidence: 0.956655879

00:01:09.222 --> 00:01:11.082 focused on the application of

NOTE Confidence: 0.956655879

00:01:11.082 --> 00:01:13.228 digital health to to the realm of

NOTE Confidence: 0.956655879

00:01:13.228 --> 00:01:14.513 addiction and and mental health.

NOTE Confidence: 0.956655879

00:01:14.520 --> 00:01:16.032 And we have a lot of resources

NOTE Confidence: 0.956655879

00:01:16.032 --> 00:01:17.437 and and and opportunities for

NOTE Confidence: 0.956655879

00:01:17.437 --> 00:01:19.537 collaboration and and if anyone here

NOTE Confidence: 0.956655879

00:01:19.537 --> 00:01:21.478 is interested in exploring that more,

NOTE Confidence: 0.956655879

00:01:21.480 --> 00:01:25.160 we would be just delighted to do so.

NOTE Confidence: 0.956655879

00:01:25.160 --> 00:01:26.609 So in first I want to acknowledge

NOTE Confidence: 0.956655879

00:01:26.609 --> 00:01:28.329 some of the funding that I'll be  
NOTE Confidence: 0.956655879

00:01:28.329 --> 00:01:29.634 referencing in our work today,  
NOTE Confidence: 0.956655879

00:01:29.640 --> 00:01:32.016 including our center grant from the  
NOTE Confidence: 0.956655879

00:01:32.016 --> 00:01:34.344 National Institute on Drug Abuse as  
NOTE Confidence: 0.956655879

00:01:34.344 --> 00:01:36.360 well as several other NIH grants.  
NOTE Confidence: 0.956655879

00:01:36.360 --> 00:01:37.837 I'll be showing some data from today.  
NOTE Confidence: 0.954660412941176

00:01:40.080 --> 00:01:42.292 And then I also wanted to acknowledge  
NOTE Confidence: 0.954660412941176

00:01:42.292 --> 00:01:44.511 that in addition to my academic  
NOTE Confidence: 0.954660412941176

00:01:44.511 --> 00:01:46.119 affiliation at Dartmouth College,  
NOTE Confidence: 0.954660412941176

00:01:46.120 --> 00:01:48.136 I also have an affiliation with a  
NOTE Confidence: 0.954660412941176

00:01:48.136 --> 00:01:49.932 few small businesses that are working  
NOTE Confidence: 0.954660412941176

00:01:49.932 --> 00:01:51.840 in the digital health space as well  
NOTE Confidence: 0.954660412941176

00:01:51.840 --> 00:01:52.940 as Burying or Ingelheim that's  
NOTE Confidence: 0.954660412941176

00:01:52.940 --> 00:01:54.519 working in the digital health space.  
NOTE Confidence: 0.954660412941176

00:01:54.520 --> 00:01:55.801 And I'll tell you a bit more  
NOTE Confidence: 0.954660412941176

00:01:55.801 --> 00:01:56.839 about our center at the end.

NOTE Confidence: 0.954660412941176  
00:01:56.840 --> 00:01:57.659 But you know,  
NOTE Confidence: 0.954660412941176  
00:01:57.659 --> 00:01:59.297 although we are a Research Center  
NOTE Confidence: 0.954660412941176  
00:01:59.297 --> 00:02:00.865 and really focused on bringing  
NOTE Confidence: 0.954660412941176  
00:02:00.865 --> 00:02:03.160 science to the space of digital health,  
NOTE Confidence: 0.954660412941176  
00:02:03.160 --> 00:02:06.130 we are really building out strategic  
NOTE Confidence: 0.954660412941176  
00:02:06.130 --> 00:02:08.110 partnerships to scale the best,  
NOTE Confidence: 0.954660412941176  
00:02:08.110 --> 00:02:09.760 most potent and engaging digital  
NOTE Confidence: 0.954660412941176  
00:02:09.760 --> 00:02:11.635 health tools and doing that in  
NOTE Confidence: 0.954660412941176  
00:02:11.635 --> 00:02:13.080 a strategic way with partners.  
NOTE Confidence: 0.954660412941176  
00:02:13.080 --> 00:02:14.475 And I'll tell you a bit more about that.  
NOTE Confidence: 0.957093006  
00:02:17.120 --> 00:02:19.640 So just starting with terminology,  
NOTE Confidence: 0.957093006  
00:02:19.640 --> 00:02:21.792 so digital health is a term that you  
NOTE Confidence: 0.957093006  
00:02:21.792 --> 00:02:23.506 probably are hearing more and more  
NOTE Confidence: 0.957093006  
00:02:23.506 --> 00:02:25.791 of it's it's increasingly a a a key  
NOTE Confidence: 0.957093006  
00:02:25.791 --> 00:02:27.435 part of many models of healthcare.  
NOTE Confidence: 0.957093006

00:02:27.440 --> 00:02:29.491 And you know I'm convinced that undoubtedly

NOTE Confidence: 0.957093006

00:02:29.491 --> 00:02:32.079 it's a a a very key part of the future

NOTE Confidence: 0.957093006

00:02:32.079 --> 00:02:34.426 of how we're going to see healthcare

NOTE Confidence: 0.957093006

00:02:34.426 --> 00:02:36.396 delivery particularly in mental health.

NOTE Confidence: 0.957093006

00:02:36.400 --> 00:02:38.248 So I think it's really critical that

NOTE Confidence: 0.957093006

00:02:38.248 --> 00:02:40.558 we sort of embrace and understand it.

NOTE Confidence: 0.957093006

00:02:40.560 --> 00:02:42.240 It's it's going to be a key part of the

NOTE Confidence: 0.957093006

00:02:42.284 --> 00:02:43.796 work that we also do together as well

NOTE Confidence: 0.957093006

00:02:43.796 --> 00:02:45.453 as the next generation of clinicians

NOTE Confidence: 0.957093006

00:02:45.453 --> 00:02:47.718 and and and healthcare providers.

NOTE Confidence: 0.957093006

00:02:47.720 --> 00:02:49.920 So digital health is a is a term

NOTE Confidence: 0.957093006

00:02:49.920 --> 00:02:52.281 that often refers to using digital

NOTE Confidence: 0.957093006

00:02:52.281 --> 00:02:54.270 technology not unlike a a smartphone

NOTE Confidence: 0.957093006

00:02:54.270 --> 00:02:56.520 that's within arm's reach of most of us,

NOTE Confidence: 0.957093006

00:02:56.520 --> 00:02:58.760 most of the most moments of the

NOTE Confidence: 0.957093006

00:02:58.760 --> 00:03:00.080 day to do a few things.

NOTE Confidence: 0.957093006

00:03:00.080 --> 00:03:03.192 One is to get new insights into people's

NOTE Confidence: 0.957093006

00:03:03.192 --> 00:03:05.440 health behavior in their daily life.

NOTE Confidence: 0.957093006

00:03:05.440 --> 00:03:08.401 And then also you can use these types of

NOTE Confidence: 0.957093006

00:03:08.401 --> 00:03:10.720 digital platforms to provide therapeutic

NOTE Confidence: 0.957093006

00:03:10.720 --> 00:03:13.600 tools to people anytime and anywhere.

NOTE Confidence: 0.957093006

00:03:13.600 --> 00:03:15.070 And this is a term called

NOTE Confidence: 0.957093006

00:03:15.070 --> 00:03:15.560 digital therapeutics.

NOTE Confidence: 0.957093006

00:03:15.560 --> 00:03:17.624 And I'm going to spend some time talking

NOTE Confidence: 0.957093006

00:03:17.624 --> 00:03:19.384 about what that means and what these

NOTE Confidence: 0.957093006

00:03:19.384 --> 00:03:21.171 are and what kinds of clinical effects

NOTE Confidence: 0.957093006

00:03:21.171 --> 00:03:23.355 we can see with these types of tools.

NOTE Confidence: 0.957093006

00:03:23.360 --> 00:03:25.145 So it's really around using

NOTE Confidence: 0.957093006

00:03:25.145 --> 00:03:26.573 digital technology for assessment

NOTE Confidence: 0.957093006

00:03:26.573 --> 00:03:28.360 and for therapeutic delivery,

NOTE Confidence: 0.957093006

00:03:28.360 --> 00:03:31.540 which can be quite personalized

NOTE Confidence: 0.957093006

00:03:31.540 --> 00:03:34.720 and and also widely accessible.  
NOTE Confidence: 0.957093006

00:03:34.720 --> 00:03:36.040 So starting with this term,  
NOTE Confidence: 0.957093006

00:03:36.040 --> 00:03:37.392 digital therapeutics,  
NOTE Confidence: 0.957093006

00:03:37.392 --> 00:03:42.800 this is a term that refers to software  
NOTE Confidence: 0.957093006

00:03:42.800 --> 00:03:44.800 that is effective in preventing,  
NOTE Confidence: 0.957093006

00:03:44.800 --> 00:03:47.116 treating or managing a health condition.  
NOTE Confidence: 0.957093006

00:03:47.120 --> 00:03:49.920 So it's a clinical grade  
NOTE Confidence: 0.957093006

00:03:49.920 --> 00:03:52.160 intervention delivered via software.  
NOTE Confidence: 0.957093006

00:03:52.160 --> 00:03:53.721 So it's it's sort of going above  
NOTE Confidence: 0.957093006

00:03:53.721 --> 00:03:55.452 and beyond what we think of as  
NOTE Confidence: 0.957093006

00:03:55.452 --> 00:03:56.717 health promotion or Wellness apps.  
NOTE Confidence: 0.957093006

00:03:56.720 --> 00:03:59.252 And you're taking the active therapeutic  
NOTE Confidence: 0.957093006

00:03:59.252 --> 00:04:01.464 ingredients of a clinical intervention  
NOTE Confidence: 0.957093006

00:04:01.464 --> 00:04:03.764 and delivering it through the  
NOTE Confidence: 0.957093006

00:04:03.764 --> 00:04:06.439 functionality and the content of software.  
NOTE Confidence: 0.957093006

00:04:06.440 --> 00:04:08.520 So I'll give you any examples in the



NOTE Confidence: 0.957093006

00:04:08.520 --> 00:04:10.400 talk today, but this could include,

NOTE Confidence: 0.957093006

00:04:10.400 --> 00:04:11.080 for example,

NOTE Confidence: 0.957093006

00:04:11.080 --> 00:04:12.880 cognitive behavioral types of

NOTE Confidence: 0.957093006

00:04:12.880 --> 00:04:14.680 interventions that are entirely

NOTE Confidence: 0.957093006

00:04:14.680 --> 00:04:16.160 delivered through software.

NOTE Confidence: 0.957093006

00:04:16.160 --> 00:04:17.400 So this is not telehealth,

NOTE Confidence: 0.957093006

00:04:17.400 --> 00:04:18.636 but it surely can complement and

NOTE Confidence: 0.957093006

00:04:18.636 --> 00:04:20.159 extend what we do with telehealth.

NOTE Confidence: 0.957093006

00:04:20.160 --> 00:04:21.360 But as we know with telehealth,

NOTE Confidence: 0.957093006

00:04:21.360 --> 00:04:22.884 we have synchronous communication

NOTE Confidence: 0.957093006

00:04:22.884 --> 00:04:25.170 with the clinician and this is

NOTE Confidence: 0.957093006

00:04:25.232 --> 00:04:27.242 something that's accessible anytime,

NOTE Confidence: 0.957093006

00:04:27.242 --> 00:04:28.046 anywhere 24/7,

NOTE Confidence: 0.957093006

00:04:28.046 --> 00:04:31.440 kind of like a clinician in your pocket,

NOTE Confidence: 0.957093006

00:04:31.440 --> 00:04:32.703 but you know,

NOTE Confidence: 0.957093006

00:04:32.703 --> 00:04:35.650 but that is available on demand and  
NOTE Confidence: 0.957093006

00:04:35.739 --> 00:04:38.917 perhaps at at times of greatest need.  
NOTE Confidence: 0.957093006

00:04:38.920 --> 00:04:41.440 And so you're packaging this model of care  
NOTE Confidence: 0.957093006

00:04:41.440 --> 00:04:44.398 into the seamless digital delivery platform.  
NOTE Confidence: 0.957093006

00:04:44.400 --> 00:04:46.283 And there are a number of benefits  
NOTE Confidence: 0.957093006

00:04:46.283 --> 00:04:47.905 of this approach and we've surely  
NOTE Confidence: 0.957093006

00:04:47.905 --> 00:04:49.676 seen this play out in the data.  
NOTE Confidence: 0.957093006

00:04:49.680 --> 00:04:50.928 So first of all,  
NOTE Confidence: 0.957093006

00:04:50.928 --> 00:04:53.227 these types of tools can extend the  
NOTE Confidence: 0.957093006

00:04:53.227 --> 00:04:55.399 reach and the impact of clinicians,  
NOTE Confidence: 0.957093006

00:04:55.400 --> 00:04:55.715 right.  
NOTE Confidence: 0.957093006

00:04:55.715 --> 00:04:57.920 These can be additional tools in the  
NOTE Confidence: 0.957093006

00:04:57.920 --> 00:05:00.624 toolbox of clinicians that can sort of  
NOTE Confidence: 0.957093006

00:05:00.624 --> 00:05:02.048 supercharge our clinician workforce  
NOTE Confidence: 0.957093006

00:05:02.048 --> 00:05:04.192 and extend their reach and provide  
NOTE Confidence: 0.957093006

00:05:04.192 --> 00:05:06.256 resources to people even when they're

NOTE Confidence: 0.957093006

00:05:06.319 --> 00:05:08.239 not working with their clinicians.

NOTE Confidence: 0.957093006

00:05:08.240 --> 00:05:09.875 So it can reinforce and

NOTE Confidence: 0.957093006

00:05:09.875 --> 00:05:11.510 extend the work that you

NOTE Confidence: 0.890133941875

00:05:11.586 --> 00:05:13.836 might be doing with the clinician

NOTE Confidence: 0.890133941875

00:05:13.840 --> 00:05:15.555 and and and I'll show you data,

NOTE Confidence: 0.890133941875

00:05:15.560 --> 00:05:18.038 but we've definitely seen now across many,

NOTE Confidence: 0.890133941875

00:05:18.040 --> 00:05:19.060 many health domains,

NOTE Confidence: 0.890133941875

00:05:19.060 --> 00:05:20.080 particularly mental health.

NOTE Confidence: 0.890133941875

00:05:20.080 --> 00:05:22.112 Much of this work to date has been

NOTE Confidence: 0.890133941875

00:05:22.112 --> 00:05:24.118 in the realm of mental health,

NOTE Confidence: 0.890133941875

00:05:24.120 --> 00:05:26.750 although there are many growing

NOTE Confidence: 0.890133941875

00:05:26.750 --> 00:05:28.980 applications in a wide array of

NOTE Confidence: 0.890133941875

00:05:28.980 --> 00:05:30.340 aspects of preventative health

NOTE Confidence: 0.890133941875

00:05:30.340 --> 00:05:32.518 to chronic disease management.

NOTE Confidence: 0.890133941875

00:05:32.520 --> 00:05:35.320 But we have seen very robust and

NOTE Confidence: 0.890133941875

00:05:35.320 --> 00:05:37.965 replicable effects on all kinds of  
NOTE Confidence: 0.890133941875

00:05:37.965 --> 00:05:40.235 health behavior and health outcomes.  
NOTE Confidence: 0.890133941875

00:05:40.240 --> 00:05:42.748 We can be assured that these  
NOTE Confidence: 0.890133941875

00:05:42.748 --> 00:05:44.420 tools can deliver interventions  
NOTE Confidence: 0.890133941875

00:05:44.490 --> 00:05:46.720 with fidelity to best practices.  
NOTE Confidence: 0.890133941875

00:05:46.720 --> 00:05:48.160 So this can be treatment interventions,  
NOTE Confidence: 0.890133941875

00:05:48.160 --> 00:05:49.970 this can be prevention interventions  
NOTE Confidence: 0.890133941875

00:05:49.970 --> 00:05:52.519 and we can really ensure that we  
NOTE Confidence: 0.890133941875

00:05:52.519 --> 00:05:54.209 are delivering this with reflecting  
NOTE Confidence: 0.890133941875

00:05:54.209 --> 00:05:56.482 sort of state of the science  
NOTE Confidence: 0.890133941875

00:05:56.482 --> 00:05:58.074 models of intervention delivery.  
NOTE Confidence: 0.97119757

00:06:00.160 --> 00:06:02.832 And surely we know that not everybody in  
NOTE Confidence: 0.97119757

00:06:02.832 --> 00:06:05.836 the world yet has access to digital devices.  
NOTE Confidence: 0.97119757

00:06:05.840 --> 00:06:08.146 All the all the data, all the trends  
NOTE Confidence: 0.97119757

00:06:08.146 --> 00:06:10.540 show that the majority of the world's  
NOTE Confidence: 0.97119757

00:06:10.609 --> 00:06:12.859 population either has access now to

NOTE Confidence: 0.97119757

00:06:12.859 --> 00:06:15.523 mobile devices and or is expected to

NOTE Confidence: 0.97119757

00:06:15.523 --> 00:06:17.713 get access to these mobile devices.

NOTE Confidence: 0.97119757

00:06:17.720 --> 00:06:20.006 And we we work with all kinds of populations

NOTE Confidence: 0.97119757

00:06:20.006 --> 00:06:22.316 in this country including some you know,

NOTE Confidence: 0.97119757

00:06:22.320 --> 00:06:23.146 traditionally underserved

NOTE Confidence: 0.97119757

00:06:23.146 --> 00:06:24.798 populations in this country.

NOTE Confidence: 0.97119757

00:06:24.800 --> 00:06:26.144 But we also do a lot of work

NOTE Confidence: 0.97119757

00:06:26.144 --> 00:06:27.397 in other parts of the world,

NOTE Confidence: 0.97119757

00:06:27.400 --> 00:06:30.449 low and middle income countries and you know,

NOTE Confidence: 0.97119757

00:06:30.449 --> 00:06:31.907 we might work with communities that

NOTE Confidence: 0.97119757

00:06:31.907 --> 00:06:33.475 don't have clean water or you know,

NOTE Confidence: 0.97119757

00:06:33.480 --> 00:06:35.424 a landline infrastructure but

NOTE Confidence: 0.97119757

00:06:35.424 --> 00:06:37.162 often have a mobile device.

NOTE Confidence: 0.97119757

00:06:37.162 --> 00:06:39.421 And so it's an it's an amazing opportunity

NOTE Confidence: 0.97119757

00:06:39.421 --> 00:06:41.531 to harness the widespread availability

NOTE Confidence: 0.97119757

00:06:41.531 --> 00:06:43.817 and growing availability of these types

NOTE Confidence: 0.97119757

00:06:43.817 --> 00:06:46.528 of tools to give people resources,

NOTE Confidence: 0.97119757

00:06:46.528 --> 00:06:49.238 healthcare resources in new ways

NOTE Confidence: 0.97119757

00:06:49.238 --> 00:06:51.918 through these types of platforms.

NOTE Confidence: 0.97119757

00:06:51.920 --> 00:06:52.444 It's scalable.

NOTE Confidence: 0.97119757

00:06:52.444 --> 00:06:54.278 I think that's one of the most

NOTE Confidence: 0.97119757

00:06:54.278 --> 00:06:55.929 exciting things is that you can

NOTE Confidence: 0.97119757

00:06:55.929 --> 00:06:57.264 have really widespread reach and

NOTE Confidence: 0.97119757

00:06:57.316 --> 00:06:58.918 impact with these types of tools.

NOTE Confidence: 0.97119757

00:06:58.920 --> 00:07:00.516 And as you all know very well,

NOTE Confidence: 0.97119757

00:07:00.520 --> 00:07:02.560 during the the COVID crisis,

NOTE Confidence: 0.97119757

00:07:02.560 --> 00:07:04.814 we definitely saw a big surge in

NOTE Confidence: 0.97119757

00:07:04.814 --> 00:07:07.623 demand for remote models of care and

NOTE Confidence: 0.97119757

00:07:07.623 --> 00:07:09.395 that definitely included telehealth.

NOTE Confidence: 0.97119757

00:07:09.400 --> 00:07:10.384 But we also saw,

NOTE Confidence: 0.97119757

00:07:10.384 --> 00:07:12.263 and I'll tell you a bit more

NOTE Confidence: 0.97119757

00:07:12.263 --> 00:07:13.277 about this later,

NOTE Confidence: 0.97119757

00:07:13.280 --> 00:07:15.104 a big growth in demand for

NOTE Confidence: 0.97119757

00:07:15.104 --> 00:07:16.760 these types of digital tools,

NOTE Confidence: 0.97119757

00:07:16.760 --> 00:07:19.680 digital interventions.

NOTE Confidence: 0.97119757

00:07:19.680 --> 00:07:20.672 And as I mentioned,

NOTE Confidence: 0.97119757

00:07:20.672 --> 00:07:23.673 we see we can get a big impact on on

NOTE Confidence: 0.97119757

00:07:23.673 --> 00:07:25.478 lots of different health outcomes,

NOTE Confidence: 0.97119757

00:07:25.480 --> 00:07:26.593 including health costs.

NOTE Confidence: 0.97119757

00:07:26.593 --> 00:07:28.448 And there's some striking data

NOTE Confidence: 0.97119757

00:07:28.448 --> 00:07:30.197 including some recently released data

NOTE Confidence: 0.97119757

00:07:30.197 --> 00:07:32.416 that really showed not only can this

NOTE Confidence: 0.97119757

00:07:32.473 --> 00:07:34.837 impact people's lives and their functioning,

NOTE Confidence: 0.97119757

00:07:34.840 --> 00:07:38.040 but can have huge implications

NOTE Confidence: 0.97119757

00:07:38.040 --> 00:07:39.960 to healthcare expenditures.

NOTE Confidence: 0.97119757

00:07:39.960 --> 00:07:42.120 So these are some of the the benefits of it.

NOTE Confidence: 0.97119757

00:07:42.120 --> 00:07:44.066 And this slide is just a snapshot  
NOTE Confidence: 0.97119757

00:07:44.066 --> 00:07:46.580 of sort of the state of research  
NOTE Confidence: 0.97119757

00:07:46.580 --> 00:07:48.600 in the application of digital  
NOTE Confidence: 0.97119757

00:07:48.600 --> 00:07:50.399 therapeutics to behavioral health.  
NOTE Confidence: 0.97119757

00:07:50.400 --> 00:07:51.264 And we've been,  
NOTE Confidence: 0.97119757

00:07:51.264 --> 00:07:53.560 I've been doing this work for decades now.  
NOTE Confidence: 0.97119757

00:07:53.560 --> 00:07:55.160 And but there's, you know,  
NOTE Confidence: 0.97119757

00:07:55.160 --> 00:07:57.400 really decades of of really  
NOTE Confidence: 0.97119757

00:07:57.400 --> 00:07:59.344 robust literature focused on,  
NOTE Confidence: 0.97119757

00:07:59.344 --> 00:08:00.316 you know,  
NOTE Confidence: 0.97119757

00:08:00.320 --> 00:08:02.147 how do you best develop and and  
NOTE Confidence: 0.97119757

00:08:02.147 --> 00:08:03.825 test and implement and sustain these  
NOTE Confidence: 0.97119757

00:08:03.825 --> 00:08:05.792 types of tools to really have value.  
NOTE Confidence: 0.97119757

00:08:05.800 --> 00:08:08.048 And this slide sort of gives you the  
NOTE Confidence: 0.97119757

00:08:08.048 --> 00:08:10.320 big picture of that body of of research.  
NOTE Confidence: 0.97119757

00:08:10.320 --> 00:08:12.592 And So what we generally see in the



NOTE Confidence: 0.97119757

00:08:12.592 --> 00:08:14.458 literature is that if you develop

NOTE Confidence: 0.97119757

00:08:14.458 --> 00:08:17.320 these tools, well development's huge,

NOTE Confidence: 0.97119757

00:08:17.320 --> 00:08:18.520 it's it's really huge.

NOTE Confidence: 0.97119757

00:08:18.520 --> 00:08:20.536 We could spend a lot of this time just

NOTE Confidence: 0.97119757

00:08:20.536 --> 00:08:21.886 talking about development in terms

NOTE Confidence: 0.97119757

00:08:21.886 --> 00:08:24.280 of how do you really develop a tool that is,

NOTE Confidence: 0.97119757

00:08:24.280 --> 00:08:24.872 you know,

NOTE Confidence: 0.97119757

00:08:24.872 --> 00:08:26.944 reflective of of the needs and and

NOTE Confidence: 0.97119757

00:08:26.944 --> 00:08:28.919 cultures and values and and and brings

NOTE Confidence: 0.97119757

00:08:28.920 --> 00:08:31.680 clinical utility to your target audience.

NOTE Confidence: 0.97119757

00:08:31.680 --> 00:08:33.766 But if you embrace sort of best

NOTE Confidence: 0.97119757

00:08:33.766 --> 00:08:35.365 practices and really have something

NOTE Confidence: 0.97119757

00:08:35.365 --> 00:08:37.633 of value to to your target audience,

NOTE Confidence: 0.97119757

00:08:37.640 --> 00:08:39.908 we see that these tools can be

NOTE Confidence: 0.97119757

00:08:39.908 --> 00:08:41.939 highly useful and acceptable to

NOTE Confidence: 0.97119757

00:08:41.939 --> 00:08:43.919 lots of different populations.  
NOTE Confidence: 0.97119757

00:08:43.920 --> 00:08:46.168 We see we can have a very large  
NOTE Confidence: 0.97119757

00:08:46.168 --> 00:08:48.823 impact on a wide array of health  
NOTE Confidence: 0.97119757

00:08:48.823 --> 00:08:50.439 behaviors and health outcomes.  
NOTE Confidence: 0.943053546666667

00:08:50.440 --> 00:08:52.928 We also have seen now in many studies  
NOTE Confidence: 0.943053546666667

00:08:52.928 --> 00:08:55.568 that digital interventions can produce  
NOTE Confidence: 0.943053546666667

00:08:55.568 --> 00:08:59.275 outcomes that are as good as or better  
NOTE Confidence: 0.943053546666667

00:08:59.275 --> 00:09:00.839 than clinician delivered interventions.  
NOTE Confidence: 0.943053546666667

00:09:00.840 --> 00:09:02.345 And you know some people you know  
NOTE Confidence: 0.943053546666667

00:09:02.345 --> 00:09:03.923 sort of bristle at that and and  
NOTE Confidence: 0.943053546666667

00:09:03.923 --> 00:09:05.243 worry that we're trying to replace  
NOTE Confidence: 0.943053546666667

00:09:05.290 --> 00:09:06.916 clinicians with these types of tools.  
NOTE Confidence: 0.943053546666667

00:09:06.920 --> 00:09:09.170 But as you all know very well in the  
NOTE Confidence: 0.943053546666667

00:09:09.170 --> 00:09:11.330 work that that you do you know it  
NOTE Confidence: 0.943053546666667

00:09:11.330 --> 00:09:13.134 we really have a capacity challenge  
NOTE Confidence: 0.943053546666667

00:09:13.134 --> 00:09:15.360 in many pockets of the world in

NOTE Confidence: 0.943053546666667  
00:09:15.360 --> 00:09:17.442 terms of you know really having  
NOTE Confidence: 0.943053546666667  
00:09:17.442 --> 00:09:18.830 sufficient mental health workforce  
NOTE Confidence: 0.943053546666667  
00:09:18.892 --> 00:09:20.788 to meet our population level needs  
NOTE Confidence: 0.943053546666667  
00:09:20.788 --> 00:09:22.446 or or addiction treatment workforce  
NOTE Confidence: 0.943053546666667  
00:09:22.446 --> 00:09:24.474 to meet our population level needs.  
NOTE Confidence: 0.943053546666667  
00:09:24.480 --> 00:09:25.560 And so it's it's I,  
NOTE Confidence: 0.943053546666667  
00:09:25.560 --> 00:09:27.840 I think of great value to know that  
NOTE Confidence: 0.943053546666667  
00:09:27.840 --> 00:09:30.028 the data support that these types  
NOTE Confidence: 0.943053546666667  
00:09:30.028 --> 00:09:32.356 of digital tools can really produce  
NOTE Confidence: 0.943053546666667  
00:09:32.428 --> 00:09:34.533 meaningful clinical effects that can  
NOTE Confidence: 0.943053546666667  
00:09:34.533 --> 00:09:37.129 extend the workforce that we have  
NOTE Confidence: 0.943053546666667  
00:09:37.129 --> 00:09:40.063 and can help increase capacity and  
NOTE Confidence: 0.943053546666667  
00:09:40.063 --> 00:09:42.782 reach for prevention and treatment  
NOTE Confidence: 0.943053546666667  
00:09:42.782 --> 00:09:45.118 of various health conditions.  
NOTE Confidence: 0.943053546666667  
00:09:45.120 --> 00:09:46.674 We've also seen you can increase reach,  
NOTE Confidence: 0.943053546666667

00:09:46.680 --> 00:09:48.720 you can increase personalization of care.  
NOTE Confidence: 0.943053546666667

00:09:48.720 --> 00:09:49.882 I'll talk a bit more about some  
NOTE Confidence: 0.943053546666667

00:09:49.882 --> 00:09:50.600 of the economic data,  
NOTE Confidence: 0.943053546666667

00:09:50.600 --> 00:09:53.757 but now there's a growing body of  
NOTE Confidence: 0.943053546666667

00:09:53.757 --> 00:09:56.079 literature showing economic benefits and  
NOTE Confidence: 0.943053546666667

00:09:56.080 --> 00:09:58.159 these don't always have to work the same way.  
NOTE Confidence: 0.943053546666667

00:09:58.160 --> 00:10:00.401 It doesn't have to be 8 sessions of 1  
NOTE Confidence: 0.943053546666667

00:10:00.401 --> 00:10:01.998 intervention or 12 sessions of another.  
NOTE Confidence: 0.943053546666667

00:10:02.000 --> 00:10:04.424 You can really embrace what technology  
NOTE Confidence: 0.943053546666667

00:10:04.424 --> 00:10:08.008 can do and have very adaptive types of  
NOTE Confidence: 0.943053546666667

00:10:08.008 --> 00:10:10.840 interventions that can change over time,  
NOTE Confidence: 0.943053546666667

00:10:10.840 --> 00:10:12.970 that can be very personalized to  
NOTE Confidence: 0.943053546666667

00:10:12.970 --> 00:10:14.130 whatever an individual's needs  
NOTE Confidence: 0.943053546666667

00:10:14.130 --> 00:10:15.480 and preferences are in the moment.  
NOTE Confidence: 0.943053546666667

00:10:15.480 --> 00:10:17.335 But that can again be adoptive in  
NOTE Confidence: 0.943053546666667

00:10:17.335 --> 00:10:19.310 an ongoing way as people's clinical

NOTE Confidence: 0.943053546666667

00:10:19.310 --> 00:10:21.554 trajectories and needs change over time.

NOTE Confidence: 0.943053546666667

00:10:21.560 --> 00:10:23.000 And there's a lot of exciting

NOTE Confidence: 0.943053546666667

00:10:23.000 --> 00:10:23.960 research in that space,

NOTE Confidence: 0.943053546666667

00:10:23.960 --> 00:10:25.520 including in our center and I'll

NOTE Confidence: 0.943053546666667

00:10:25.520 --> 00:10:27.200 I'll speak a bit about that.

NOTE Confidence: 0.943053546666667

00:10:27.200 --> 00:10:28.508 But I think that's,

NOTE Confidence: 0.943053546666667

00:10:28.508 --> 00:10:31.257 I think that we have a lot of

NOTE Confidence: 0.943053546666667

00:10:31.257 --> 00:10:33.190 promise for precision interventions,

NOTE Confidence: 0.943053546666667

00:10:33.190 --> 00:10:36.265 precision delivery of mental health

NOTE Confidence: 0.943053546666667

00:10:36.265 --> 00:10:38.594 interventions delivered anytime and

NOTE Confidence: 0.943053546666667

00:10:38.594 --> 00:10:40.664 anywhere through capture of digital

NOTE Confidence: 0.943053546666667

00:10:40.664 --> 00:10:43.196 data at the individual level and

NOTE Confidence: 0.943053546666667

00:10:43.196 --> 00:10:44.864 then very responsive interventions

NOTE Confidence: 0.943053546666667

00:10:44.864 --> 00:10:46.720 provided on digital platforms.

NOTE Confidence: 0.881037964

00:10:49.120 --> 00:10:51.853 I'm going to talk about, first of all,

NOTE Confidence: 0.881037964

00:10:51.853 --> 00:10:53.239 I'm going to talk about a  
NOTE Confidence: 0.881037964

00:10:53.239 --> 00:10:54.759 digital intervention that we did.  
NOTE Confidence: 0.881037964

00:10:54.760 --> 00:10:56.128 We developed the first iteration of  
NOTE Confidence: 0.881037964

00:10:56.128 --> 00:10:57.832 a long time ago, actually the first,  
NOTE Confidence: 0.881037964

00:10:57.832 --> 00:10:59.416 first iteration of it was in  
NOTE Confidence: 0.881037964

00:10:59.416 --> 00:11:00.956 the late 90s and it was not,  
NOTE Confidence: 0.881037964

00:11:00.960 --> 00:11:02.952 it was web-based at the time and not  
NOTE Confidence: 0.881037964

00:11:02.952 --> 00:11:05.220 a mobile intervention at the time and  
NOTE Confidence: 0.881037964

00:11:05.220 --> 00:11:07.880 has evolved over that period of time.  
NOTE Confidence: 0.881037964

00:11:07.880 --> 00:11:09.581 But I talk about this as an  
NOTE Confidence: 0.881037964

00:11:09.581 --> 00:11:11.559 exemplar of a digital therapeutic,  
NOTE Confidence: 0.881037964

00:11:11.560 --> 00:11:12.880 just to highlight what one  
NOTE Confidence: 0.881037964

00:11:12.880 --> 00:11:14.200 of these can look like,  
NOTE Confidence: 0.881037964

00:11:14.200 --> 00:11:16.084 but also what kinds of clinical  
NOTE Confidence: 0.881037964

00:11:16.084 --> 00:11:18.114 effects you can see when you  
NOTE Confidence: 0.881037964

00:11:18.114 --> 00:11:19.874 use these tools different ways.

NOTE Confidence: 0.881037964

00:11:19.880 --> 00:11:21.735 So I'm going to give you examples

NOTE Confidence: 0.881037964

00:11:21.735 --> 00:11:23.148 of different ways you could

NOTE Confidence: 0.881037964

00:11:23.148 --> 00:11:24.558 apply this type of approach,

NOTE Confidence: 0.881037964

00:11:24.560 --> 00:11:25.757 But I know there are many others.

NOTE Confidence: 0.881037964

00:11:25.760 --> 00:11:27.280 In fact, Yale, you know,

NOTE Confidence: 0.881037964

00:11:27.280 --> 00:11:29.639 has developed fantastic tools in the space,

NOTE Confidence: 0.881037964

00:11:29.640 --> 00:11:30.892 including CBT for CBT,

NOTE Confidence: 0.881037964

00:11:30.892 --> 00:11:32.770 and there are many others for

NOTE Confidence: 0.881037964

00:11:32.832 --> 00:11:34.998 substance use and for mental health.

NOTE Confidence: 0.881037964

00:11:35.000 --> 00:11:37.118 So this is just an example.

NOTE Confidence: 0.881037964

00:11:37.120 --> 00:11:38.216 And briefly,

NOTE Confidence: 0.881037964

00:11:38.216 --> 00:11:41.504 this is a pretty intensive behavioral

NOTE Confidence: 0.881037964

00:11:41.504 --> 00:11:44.702 treatment for substance use disorders

NOTE Confidence: 0.881037964

00:11:44.702 --> 00:11:47.618 that's entirely delivered in this

NOTE Confidence: 0.881037964

00:11:47.618 --> 00:11:49.196 interactive self-directed way.

NOTE Confidence: 0.881037964

00:11:49.200 --> 00:11:51.770 Again started web-based and then

NOTE Confidence: 0.881037964

00:11:51.770 --> 00:11:54.116 morphed into a a mobile tool.

NOTE Confidence: 0.881037964

00:11:54.116 --> 00:11:56.512 It just briefly I'm not going to

NOTE Confidence: 0.881037964

00:11:56.512 --> 00:11:58.594 talk about the details of this.

NOTE Confidence: 0.881037964

00:11:58.600 --> 00:12:00.126 I'm happy to chat more about this

NOTE Confidence: 0.881037964

00:12:00.126 --> 00:12:01.719 if folks have specific questions.

NOTE Confidence: 0.881037964

00:12:01.720 --> 00:12:04.247 But this takes one of our very

NOTE Confidence: 0.881037964

00:12:04.247 --> 00:12:05.852 potent behavioral treatments for

NOTE Confidence: 0.881037964

00:12:05.852 --> 00:12:08.117 substance use disorders called the

NOTE Confidence: 0.881037964

00:12:08.117 --> 00:12:09.476 community reinforcement approach

NOTE Confidence: 0.881037964

00:12:09.476 --> 00:12:11.958 to substance use disorder treatment

NOTE Confidence: 0.881037964

00:12:11.960 --> 00:12:13.460 and takes the active ingredients

NOTE Confidence: 0.881037964

00:12:13.460 --> 00:12:14.960 of that therapeutic approach and

NOTE Confidence: 0.881037964

00:12:15.011 --> 00:12:17.360 delivers it on a digital platform.

NOTE Confidence: 0.881037964

00:12:17.360 --> 00:12:19.673 So it's very interactive at

NOTE Confidence: 0.881037964

00:12:19.673 --> 00:12:21.092 the individual level.



NOTE Confidence: 0.881037964

00:12:21.092 --> 00:12:23.930 It focuses on helping people understand

NOTE Confidence: 0.881037964

00:12:24.005 --> 00:12:26.708 their specific sort of pattern of

NOTE Confidence: 0.881037964

00:12:26.708 --> 00:12:28.793 of behaviors of cognitions that

NOTE Confidence: 0.881037964

00:12:28.800 --> 00:12:30.480 maintain self defeating patterns or

NOTE Confidence: 0.881037964

00:12:30.480 --> 00:12:32.910 drug taking behavior and how you can

NOTE Confidence: 0.881037964

00:12:32.910 --> 00:12:34.635 understand and disrupt those patterns.

NOTE Confidence: 0.881037964

00:12:34.640 --> 00:12:36.360 And and and develop a new skill set

NOTE Confidence: 0.881037964

00:12:36.360 --> 00:12:38.208 and a new behavioral repertoire that

NOTE Confidence: 0.881037964

00:12:38.208 --> 00:12:40.360 can help you initiate and maintain a

NOTE Confidence: 0.881037964

00:12:40.360 --> 00:12:43.114 recovery process and how to leverage

NOTE Confidence: 0.881037964

00:12:43.114 --> 00:12:45.600 different resources in that process.

NOTE Confidence: 0.881037964

00:12:45.600 --> 00:12:47.790 And there is an optional piece

NOTE Confidence: 0.881037964

00:12:47.790 --> 00:12:49.863 to this intervention that is

NOTE Confidence: 0.881037964

00:12:49.863 --> 00:12:51.480 motivational incentives piece,

NOTE Confidence: 0.881037964

00:12:51.480 --> 00:12:53.800 which is often called contingency

NOTE Confidence: 0.881037964

00:12:53.800 --> 00:12:56.622 management where you give people incentives,

NOTE Confidence: 0.881037964

00:12:56.622 --> 00:12:57.626 prizes, rewards,

NOTE Confidence: 0.881037964

00:12:57.626 --> 00:12:59.634 contingent on different milestones,

NOTE Confidence: 0.881037964

00:12:59.640 --> 00:13:01.215 different successes in a recovery

NOTE Confidence: 0.881037964

00:13:01.215 --> 00:13:02.475 process in this case.

NOTE Confidence: 0.881037964

00:13:02.480 --> 00:13:04.015 And that that's all automated

NOTE Confidence: 0.881037964

00:13:04.015 --> 00:13:06.454 in this tool and is an optional

NOTE Confidence: 0.881037964

00:13:06.454 --> 00:13:08.554 component of this broader platform.

NOTE Confidence: 0.881037964

00:13:08.560 --> 00:13:10.040 So again, happy to talk about this more,

NOTE Confidence: 0.881037964

00:13:10.040 --> 00:13:11.888 but just just wanted to give you

NOTE Confidence: 0.881037964

00:13:11.888 --> 00:13:13.576 a snapshot of what this is it.

NOTE Confidence: 0.881037964

00:13:13.576 --> 00:13:13.800 It,

NOTE Confidence: 0.881037964

00:13:13.800 --> 00:13:15.384 it's not just about sort of

NOTE Confidence: 0.881037964

00:13:15.384 --> 00:13:16.440 enhancing motivation to change.

NOTE Confidence: 0.881037964

00:13:16.440 --> 00:13:19.107 It really is intended to be an

NOTE Confidence: 0.881037964

00:13:19.107 --> 00:13:20.250 intensive behavioral treatment

NOTE Confidence: 0.881037964

00:13:20.314 --> 00:13:22.154 that that really helps people

NOTE Confidence: 0.881037964

00:13:22.154 --> 00:13:24.640 build the skills and capacity for,

NOTE Confidence: 0.881037964

00:13:24.640 --> 00:13:25.920 for change,

NOTE Confidence: 0.881037964

00:13:25.920 --> 00:13:28.480 particularly around substance use.

NOTE Confidence: 0.881037964

00:13:28.480 --> 00:13:30.415 So what I'm going to do now is just

NOTE Confidence: 0.881037964

00:13:30.415 --> 00:13:32.381 give you a little bit of data and

NOTE Confidence: 0.881037964

00:13:32.381 --> 00:13:34.215 some examples of the kinds of effects

NOTE Confidence: 0.881037964

00:13:34.215 --> 00:13:36.682 you can see with these types of tools.

NOTE Confidence: 0.881037964

00:13:36.682 --> 00:13:39.769 So one of the really early studies

NOTE Confidence: 0.881037964

00:13:39.769 --> 00:13:41.884 that we did was I'll just briefly

NOTE Confidence: 0.881037964

00:13:41.884 --> 00:13:43.450 describe the study and I'll mention

NOTE Confidence: 0.844849065454545

00:13:43.497 --> 00:13:44.679 that we have lots and lots

NOTE Confidence: 0.844849065454545

00:13:44.679 --> 00:13:45.879 of papers on all of this.

NOTE Confidence: 0.844849065454545

00:13:45.880 --> 00:13:47.758 So if anyone has any interest,

NOTE Confidence: 0.844849065454545

00:13:47.760 --> 00:13:48.741 please reach out.

NOTE Confidence: 0.844849065454545

00:13:48.741 --> 00:13:51.840 I have my e-mail address on the last slide,  
NOTE Confidence: 0.844849065454545

00:13:51.840 --> 00:13:53.460 Please reach out and I'm happy  
NOTE Confidence: 0.844849065454545

00:13:53.460 --> 00:13:55.388 to share any and all additional  
NOTE Confidence: 0.844849065454545

00:13:55.388 --> 00:13:57.358 information that might be useful.  
NOTE Confidence: 0.844849065454545

00:13:57.360 --> 00:13:58.956 But in the interest of time I'm  
NOTE Confidence: 0.844849065454545

00:13:58.956 --> 00:14:00.688 just going to sort of give you a  
NOTE Confidence: 0.844849065454545

00:14:00.688 --> 00:14:02.240 flavor of of some of this work.  
NOTE Confidence: 0.844849065454545

00:14:02.240 --> 00:14:04.690 So, so this is this particular trial  
NOTE Confidence: 0.844849065454545

00:14:04.690 --> 00:14:07.259 Nida funded study was a three arm  
NOTE Confidence: 0.844849065454545

00:14:07.259 --> 00:14:09.074 randomized clinical trial and these  
NOTE Confidence: 0.844849065454545

00:14:09.074 --> 00:14:11.376 were all adults entering outpatient  
NOTE Confidence: 0.844849065454545

00:14:11.376 --> 00:14:13.716 treatment for opioid use disorder.  
NOTE Confidence: 0.844849065454545

00:14:13.720 --> 00:14:16.140 And every every single participant  
NOTE Confidence: 0.844849065454545

00:14:16.140 --> 00:14:18.560 in the study received medication.  
NOTE Confidence: 0.844849065454545

00:14:18.560 --> 00:14:20.835 We all know that medication is a  
NOTE Confidence: 0.844849065454545

00:14:20.840 --> 00:14:22.296 critical component of effective

NOTE Confidence: 0.844849065454545

00:14:22.296 --> 00:14:24.116 treatments for opioid use disorder.

NOTE Confidence: 0.844849065454545

00:14:24.120 --> 00:14:28.312 This is a sample here that all received

NOTE Confidence: 0.844849065454545

00:14:28.312 --> 00:14:30.600 buprenorphine medication as part of care.

NOTE Confidence: 0.844849065454545

00:14:30.600 --> 00:14:32.460 But the randomization occurred on the

NOTE Confidence: 0.844849065454545

00:14:32.521 --> 00:14:34.555 type of behavioral treatment that people

NOTE Confidence: 0.844849065454545

00:14:34.555 --> 00:14:37.120 received on top of the pharmacotherapy.

NOTE Confidence: 0.844849065454545

00:14:37.120 --> 00:14:40.312 So if you went into the condition that

NOTE Confidence: 0.844849065454545

00:14:40.312 --> 00:14:43.078 is reflected in the blue column here,

NOTE Confidence: 0.844849065454545

00:14:43.080 --> 00:14:45.047 you were randomly assigned to a therapist

NOTE Confidence: 0.844849065454545

00:14:45.047 --> 00:14:47.264 and you met with this therapist three

NOTE Confidence: 0.844849065454545

00:14:47.264 --> 00:14:49.238 times a week in individual sessions.

NOTE Confidence: 0.844849065454545

00:14:49.240 --> 00:14:51.430 And this therapist delivered to

NOTE Confidence: 0.844849065454545

00:14:51.430 --> 00:14:53.182 you the community reinforcement

NOTE Confidence: 0.844849065454545

00:14:53.182 --> 00:14:55.423 approach to behavior therapy for

NOTE Confidence: 0.844849065454545

00:14:55.423 --> 00:14:57.159 substance use disorder treatment.

NOTE Confidence: 0.844849065454545

00:14:57.160 --> 00:14:58.707 And there were all kinds of fidelity  
NOTE Confidence: 0.844849065454545

00:14:58.707 --> 00:15:00.245 checks in place to make sure it  
NOTE Confidence: 0.844849065454545

00:15:00.245 --> 00:15:01.493 was being done in accordance with  
NOTE Confidence: 0.844849065454545

00:15:01.538 --> 00:15:02.990 sort of state of the science  
NOTE Confidence: 0.844849065454545

00:15:02.990 --> 00:15:04.420 approach to this therapeutic model.  
NOTE Confidence: 0.844849065454545

00:15:04.420 --> 00:15:08.073 And so it was a pretty intensive one-on-one  
NOTE Confidence: 0.844849065454545

00:15:08.073 --> 00:15:10.238 therapeutic approach with a clinician.  
NOTE Confidence: 0.844849065454545

00:15:10.240 --> 00:15:11.885 If you went into what's  
NOTE Confidence: 0.844849065454545

00:15:11.885 --> 00:15:13.920 reflected in the red column here,  
NOTE Confidence: 0.844849065454545

00:15:13.920 --> 00:15:16.016 you had a therapist and you saw them  
NOTE Confidence: 0.844849065454545

00:15:16.016 --> 00:15:17.798 every other week just to check in.  
NOTE Confidence: 0.844849065454545

00:15:17.800 --> 00:15:19.496 But your, your therapy,  
NOTE Confidence: 0.844849065454545

00:15:19.496 --> 00:15:21.616 therapy was offloaded to a  
NOTE Confidence: 0.844849065454545

00:15:21.616 --> 00:15:23.440 digital delivery platform.  
NOTE Confidence: 0.844849065454545

00:15:23.440 --> 00:15:25.752 So this is a group that in this  
NOTE Confidence: 0.844849065454545

00:15:25.752 --> 00:15:27.528 particular study actually went to a

NOTE Confidence: 0.844849065454545

00:15:27.528 --> 00:15:30.280 computer lab on site at the treatment

NOTE Confidence: 0.844849065454545

00:15:30.280 --> 00:15:33.442 facility and interacted 3 \* a week

NOTE Confidence: 0.844849065454545

00:15:33.442 --> 00:15:36.448 with a digital version of this

NOTE Confidence: 0.844849065454545

00:15:36.448 --> 00:15:38.280 community reinforcement approach,

NOTE Confidence: 0.844849065454545

00:15:38.280 --> 00:15:39.237 behavioural therapy approach.

NOTE Confidence: 0.844849065454545

00:15:39.237 --> 00:15:41.470 And then if you went into what's

NOTE Confidence: 0.844849065454545

00:15:41.527 --> 00:15:43.279 reflected here in the Gray column,

NOTE Confidence: 0.844849065454545

00:15:43.280 --> 00:15:45.515 you received what was considered

NOTE Confidence: 0.844849065454545

00:15:45.515 --> 00:15:47.750 treatment as usual standard treatment

NOTE Confidence: 0.844849065454545

00:15:47.817 --> 00:15:49.581 for opioid use disorders in the

NOTE Confidence: 0.844849065454545

00:15:49.581 --> 00:15:52.681 US at the time and it wasn't the

NOTE Confidence: 0.844849065454545

00:15:52.681 --> 00:15:54.076 community reinforcement approach.

NOTE Confidence: 0.844849065454545

00:15:54.080 --> 00:15:56.168 So basically this slide shows that

NOTE Confidence: 0.844849065454545

00:15:56.168 --> 00:15:59.119 even when you offload the bulk of this

NOTE Confidence: 0.844849065454545

00:15:59.119 --> 00:16:01.357 therapeutic approach to a digital platform,

NOTE Confidence: 0.844849065454545

00:16:01.360 --> 00:16:03.255 you can get comparable clinical  
NOTE Confidence: 0.844849065454545

00:16:03.255 --> 00:16:05.752 outcomes to what you observe from  
NOTE Confidence: 0.844849065454545

00:16:05.752 --> 00:16:07.876 exclusively clinician delivered care.  
NOTE Confidence: 0.844849065454545

00:16:07.880 --> 00:16:10.088 And then both versions of this  
NOTE Confidence: 0.844849065454545

00:16:10.088 --> 00:16:12.628 you know very effective and potent  
NOTE Confidence: 0.844849065454545

00:16:12.628 --> 00:16:14.608 behavioral therapy produce better  
NOTE Confidence: 0.844849065454545

00:16:14.608 --> 00:16:16.806 outcomes than our standard treatments.  
NOTE Confidence: 0.844849065454545

00:16:16.806 --> 00:16:19.620 And this particular slide is on a  
NOTE Confidence: 0.844849065454545

00:16:19.693 --> 00:16:21.817 objectively captured data through  
NOTE Confidence: 0.844849065454545

00:16:21.817 --> 00:16:23.941 urine toxicology testing looking  
NOTE Confidence: 0.844849065454545

00:16:23.941 --> 00:16:25.720 at abstinence from opioids and  
NOTE Confidence: 0.844849065454545

00:16:25.720 --> 00:16:26.960 cocaine in the sample.  
NOTE Confidence: 0.844849065454545

00:16:26.960 --> 00:16:27.221 So.  
NOTE Confidence: 0.844849065454545

00:16:27.221 --> 00:16:29.570 So that was one example of a way that  
NOTE Confidence: 0.844849065454545

00:16:29.638 --> 00:16:31.598 you could apply this and and and  
NOTE Confidence: 0.844849065454545

00:16:31.598 --> 00:16:33.952 you can see the kinds of benefits



NOTE Confidence: 0.844849065454545  
00:16:33.952 --> 00:16:35.757 you get clinically from that.  
NOTE Confidence: 0.844849065454545  
00:16:35.760 --> 00:16:36.908 But now I'm going to show you  
NOTE Confidence: 0.844849065454545  
00:16:36.908 --> 00:16:37.236 different examples.  
NOTE Confidence: 0.844849065454545  
00:16:37.240 --> 00:16:39.760 So this was a study that we did  
NOTE Confidence: 0.844849065454545  
00:16:39.760 --> 00:16:41.560 in New York City and  
NOTE Confidence: 0.915545915  
00:16:41.560 --> 00:16:43.984 these were all adults again with  
NOTE Confidence: 0.915545915  
00:16:43.984 --> 00:16:46.138 opioid use disorder that were  
NOTE Confidence: 0.915545915  
00:16:46.138 --> 00:16:47.622 entering outpatient treatment.  
NOTE Confidence: 0.915545915  
00:16:47.622 --> 00:16:50.688 This was done in methadone treatment  
NOTE Confidence: 0.915545915  
00:16:50.688 --> 00:16:53.360 systems and when people came in  
NOTE Confidence: 0.915545915  
00:16:53.360 --> 00:16:55.520 to treatment they either received  
NOTE Confidence: 0.915545915  
00:16:55.597 --> 00:16:57.947 treatment as usual in methadone  
NOTE Confidence: 0.915545915  
00:16:57.947 --> 00:17:00.297 treatment setting which as you  
NOTE Confidence: 0.915545915  
00:17:00.373 --> 00:17:03.133 likely know includes daily methadone  
NOTE Confidence: 0.915545915  
00:17:03.133 --> 00:17:05.635 medication and some therapy support  
NOTE Confidence: 0.915545915

00:17:05.635 --> 00:17:07.960 from counselors in the system.

NOTE Confidence: 0.915545915

00:17:07.960 --> 00:17:09.982 So they went either into that

NOTE Confidence: 0.915545915

00:17:09.982 --> 00:17:12.239 condition or they were randomized to

NOTE Confidence: 0.915545915

00:17:12.240 --> 00:17:14.705 this condition which was basically

NOTE Confidence: 0.915545915

00:17:14.705 --> 00:17:17.745 a condition where they they they

NOTE Confidence: 0.915545915

00:17:17.745 --> 00:17:20.195 they had daily methadone access,

NOTE Confidence: 0.915545915

00:17:20.200 --> 00:17:21.364 they had a clinician.

NOTE Confidence: 0.915545915

00:17:21.364 --> 00:17:22.819 But the only difference between

NOTE Confidence: 0.915545915

00:17:22.819 --> 00:17:24.466 the two conditions is that in

NOTE Confidence: 0.915545915

00:17:24.466 --> 00:17:26.080 the one reflected here in blue,

NOTE Confidence: 0.915545915

00:17:26.080 --> 00:17:30.005 those participants had a therapist

NOTE Confidence: 0.915545915

00:17:30.005 --> 00:17:32.280 but their clinician patient time

NOTE Confidence: 0.915545915

00:17:32.280 --> 00:17:35.364 was cut in half and the other half

NOTE Confidence: 0.915545915

00:17:35.364 --> 00:17:37.650 of that time was spent interacting

NOTE Confidence: 0.915545915

00:17:37.723 --> 00:17:39.519 with the digital therapy.

NOTE Confidence: 0.915545915

00:17:39.520 --> 00:17:41.680 So let's say instead of doing a 60

NOTE Confidence: 0.915545915

00:17:41.680 --> 00:17:43.439 minute session with their counselor,

NOTE Confidence: 0.915545915

00:17:43.440 --> 00:17:45.190 they did a 30 minute session with

NOTE Confidence: 0.915545915

00:17:45.190 --> 00:17:46.465 their counselor and then they

NOTE Confidence: 0.915545915

00:17:46.465 --> 00:17:48.117 interacted for the rest of 30 minutes

NOTE Confidence: 0.915545915

00:17:48.117 --> 00:17:49.466 in this interactive one-on-one

NOTE Confidence: 0.915545915

00:17:49.466 --> 00:17:51.236 way with this digital treatment,

NOTE Confidence: 0.915545915

00:17:51.240 --> 00:17:52.944 this community reinforcement

NOTE Confidence: 0.915545915

00:17:52.944 --> 00:17:54.080 approach treatment.

NOTE Confidence: 0.915545915

00:17:54.080 --> 00:17:55.732 And what we find is that when

NOTE Confidence: 0.915545915

00:17:55.732 --> 00:17:57.572 you cut in half patient clinician

NOTE Confidence: 0.915545915

00:17:57.572 --> 00:17:59.702 contact time and replace it with

NOTE Confidence: 0.915545915

00:17:59.702 --> 00:18:01.359 this digital intervention,

NOTE Confidence: 0.915545915

00:18:01.360 --> 00:18:03.640 we had significantly greater

NOTE Confidence: 0.915545915

00:18:03.640 --> 00:18:05.920 documented abstinence from opioids

NOTE Confidence: 0.915545915

00:18:05.920 --> 00:18:10.126 in that sample versus the sample who

NOTE Confidence: 0.915545915

00:18:10.126 --> 00:18:12.514 received standard methadone treatment.  
NOTE Confidence: 0.915545915

00:18:12.520 --> 00:18:14.438 We had the opportunity in this study,  
NOTE Confidence: 0.915545915

00:18:14.440 --> 00:18:15.808 this was Nida funded.  
NOTE Confidence: 0.915545915

00:18:15.808 --> 00:18:18.660 We had the opportunity to track these  
NOTE Confidence: 0.915545915

00:18:18.660 --> 00:18:22.080 outcomes for 12 months per participant  
NOTE Confidence: 0.915545915

00:18:22.080 --> 00:18:24.390 and the differential here you see  
NOTE Confidence: 0.915545915

00:18:24.390 --> 00:18:26.920 persisted for that 12 month window.  
NOTE Confidence: 0.915545915

00:18:26.920 --> 00:18:29.320 We saw this benefit from including  
NOTE Confidence: 0.915545915

00:18:29.320 --> 00:18:31.882 the digital treatment as part of the  
NOTE Confidence: 0.915545915

00:18:31.882 --> 00:18:33.355 care model and there's lots to say  
NOTE Confidence: 0.915545915

00:18:33.355 --> 00:18:34.719 about why we think this is the case.  
NOTE Confidence: 0.915545915

00:18:34.720 --> 00:18:36.785 But you know this is an intervention  
NOTE Confidence: 0.915545915

00:18:36.785 --> 00:18:38.737 that you know is being delivered  
NOTE Confidence: 0.915545915

00:18:38.737 --> 00:18:40.417 with fidelity every time and  
NOTE Confidence: 0.915545915

00:18:40.417 --> 00:18:42.279 it's very responsive to what  
NOTE Confidence: 0.915545915

00:18:42.279 --> 00:18:44.159 people are understanding or not,

NOTE Confidence: 0.915545915  
00:18:44.160 --> 00:18:45.000 what their needs are or not.  
NOTE Confidence: 0.915545915  
00:18:45.000 --> 00:18:47.072 So it's very personalized in the way  
NOTE Confidence: 0.915545915  
00:18:47.072 --> 00:18:48.930 that it delivers the interventions  
NOTE Confidence: 0.915545915  
00:18:48.930 --> 00:18:51.355 to a a particular individual.  
NOTE Confidence: 0.915545915  
00:18:51.360 --> 00:18:52.872 And and we know there's a  
NOTE Confidence: 0.915545915  
00:18:52.872 --> 00:18:54.170 lot of variability right, in,  
NOTE Confidence: 0.915545915  
00:18:54.170 --> 00:18:56.200 in terms of what happens in counselling  
NOTE Confidence: 0.915545915  
00:18:56.200 --> 00:18:58.078 in different in therapeutic settings.  
NOTE Confidence: 0.915545915  
00:18:58.080 --> 00:19:01.464 And so this is very encouraging that this  
NOTE Confidence: 0.915545915  
00:19:01.464 --> 00:19:04.999 can really have this kind of robust effect.  
NOTE Confidence: 0.915545915  
00:19:05.000 --> 00:19:06.880 And then one more snapshot,  
NOTE Confidence: 0.915545915  
00:19:06.880 --> 00:19:08.365 There's lots more data to  
NOTE Confidence: 0.915545915  
00:19:08.365 --> 00:19:09.553 share beyond these studies,  
NOTE Confidence: 0.915545915  
00:19:09.560 --> 00:19:11.144 but one more snapshot just to  
NOTE Confidence: 0.915545915  
00:19:11.144 --> 00:19:12.840 show you a different way that a,  
NOTE Confidence: 0.915545915

00:19:12.840 --> 00:19:14.940 a clinical setting could embrace  
NOTE Confidence: 0.915545915

00:19:14.940 --> 00:19:16.200 a digital therapeutic.  
NOTE Confidence: 0.915545915

00:19:16.200 --> 00:19:17.542 And that is to say, OK,  
NOTE Confidence: 0.915545915

00:19:17.542 --> 00:19:18.634 we're not going to touch the  
NOTE Confidence: 0.915545915

00:19:18.634 --> 00:19:19.400 underlying model of care.  
NOTE Confidence: 0.915545915

00:19:19.400 --> 00:19:20.504 We're just going to add this  
NOTE Confidence: 0.915545915

00:19:20.504 --> 00:19:21.240 on as a supplement.  
NOTE Confidence: 0.915545915

00:19:21.240 --> 00:19:23.377 We're going to say over and above our  
NOTE Confidence: 0.915545915

00:19:23.377 --> 00:19:25.879 treatment as usual our care model.  
NOTE Confidence: 0.915545915

00:19:25.880 --> 00:19:28.463 What if we offered a digital intervention  
NOTE Confidence: 0.915545915

00:19:28.463 --> 00:19:31.134 as an adjunct to care and that's  
NOTE Confidence: 0.915545915

00:19:31.134 --> 00:19:32.999 what's reflected in this study.  
NOTE Confidence: 0.915545915

00:19:33.000 --> 00:19:33.742 So again,  
NOTE Confidence: 0.915545915

00:19:33.742 --> 00:19:35.597 this is another study with  
NOTE Confidence: 0.915545915

00:19:35.597 --> 00:19:37.939 adults with opioid use disorder  
NOTE Confidence: 0.915545915

00:19:37.939 --> 00:19:39.679 entering outpatient treatment.

NOTE Confidence: 0.915545915

00:19:39.680 --> 00:19:41.996 This is another study in a

NOTE Confidence: 0.915545915

00:19:41.996 --> 00:19:43.154 methadone treatment setting.

NOTE Confidence: 0.915545915

00:19:43.160 --> 00:19:45.435 And the participants either again

NOTE Confidence: 0.915545915

00:19:45.435 --> 00:19:47.710 receive standard methadone treatment or

NOTE Confidence: 0.802796796521739

00:19:47.781 --> 00:19:49.832 as an adjunct to that they were

NOTE Confidence: 0.802796796521739

00:19:49.832 --> 00:19:51.840 given when they joined the study,

NOTE Confidence: 0.802796796521739

00:19:51.840 --> 00:19:54.240 access to a mobile version

NOTE Confidence: 0.802796796521739

00:19:54.240 --> 00:19:56.160 of this digital intervention.

NOTE Confidence: 0.802796796521739

00:19:56.160 --> 00:19:58.032 And when you gave folks this

NOTE Confidence: 0.802796796521739

00:19:58.032 --> 00:20:00.202 mobile version on top of the

NOTE Confidence: 0.802796796521739

00:20:00.202 --> 00:20:01.477 underlying treatment model,

NOTE Confidence: 0.802796796521739

00:20:01.480 --> 00:20:03.466 we were able to keep those

NOTE Confidence: 0.802796796521739

00:20:03.466 --> 00:20:05.320 people in treatment much longer,

NOTE Confidence: 0.802796796521739

00:20:05.320 --> 00:20:07.168 much higher percent of those people

NOTE Confidence: 0.802796796521739

00:20:07.168 --> 00:20:08.765 retained in treatment compared to

NOTE Confidence: 0.802796796521739

00:20:08.765 --> 00:20:10.355 those who received standard treatment.

NOTE Confidence: 0.802796796521739

00:20:10.360 --> 00:20:12.400 So right now we're looking at

NOTE Confidence: 0.802796796521739

00:20:12.400 --> 00:20:14.236 what happens in the first three

NOTE Confidence: 0.802796796521739

00:20:14.236 --> 00:20:15.960 months of your treatment episode.

NOTE Confidence: 0.802796796521739

00:20:15.960 --> 00:20:18.172 And we found much higher percent of

NOTE Confidence: 0.802796796521739

00:20:18.172 --> 00:20:20.551 patients who got the app as part of

NOTE Confidence: 0.802796796521739

00:20:20.551 --> 00:20:22.325 care were retained in that window

NOTE Confidence: 0.802796796521739

00:20:22.325 --> 00:20:24.359 of time versus those who didn't.

NOTE Confidence: 0.802796796521739

00:20:24.360 --> 00:20:25.634 And you know, this is really important.

NOTE Confidence: 0.802796796521739

00:20:25.640 --> 00:20:27.999 We know that treatment retentions are really.

NOTE Confidence: 0.802796796521739

00:20:28.000 --> 00:20:29.680 Important predictor of all kinds

NOTE Confidence: 0.802796796521739

00:20:29.680 --> 00:20:31.360 of other clinical outcomes in

NOTE Confidence: 0.802796796521739

00:20:31.418 --> 00:20:32.720 substance use treatment.

NOTE Confidence: 0.802796796521739

00:20:32.720 --> 00:20:34.880 And if we can bump up and and you know,

NOTE Confidence: 0.802796796521739

00:20:34.880 --> 00:20:36.320 increase our retention,

NOTE Confidence: 0.802796796521739

00:20:36.320 --> 00:20:38.720 particularly in these early windows,



NOTE Confidence: 0.802796796521739  
00:20:38.720 --> 00:20:41.753 you know of when dropout can be quite high,  
NOTE Confidence: 0.802796796521739  
00:20:41.760 --> 00:20:42.960 you know this can be a  
NOTE Confidence: 0.802796796521739  
00:20:42.960 --> 00:20:43.560 really meaningful effect.  
NOTE Confidence: 0.802796796521739  
00:20:43.560 --> 00:20:45.402 And the same pattern I'm showing  
NOTE Confidence: 0.802796796521739  
00:20:45.402 --> 00:20:47.670 you here showed up in the urine  
NOTE Confidence: 0.802796796521739  
00:20:47.670 --> 00:20:49.620 toxicology data where if you offered  
NOTE Confidence: 0.802796796521739  
00:20:49.620 --> 00:20:51.997 this mobile tool as part of treatment,  
NOTE Confidence: 0.802796796521739  
00:20:52.000 --> 00:20:54.910 you had more documented abstinence  
NOTE Confidence: 0.802796796521739  
00:20:54.910 --> 00:20:57.944 from opioids than if you didn't.  
NOTE Confidence: 0.802796796521739  
00:20:57.944 --> 00:20:58.876 And again,  
NOTE Confidence: 0.802796796521739  
00:20:58.880 --> 00:21:00.640 I'm just giving you examples of data there.  
NOTE Confidence: 0.802796796521739  
00:21:00.640 --> 00:21:04.105 There's lots of really compelling  
NOTE Confidence: 0.802796796521739  
00:21:04.105 --> 00:21:06.040 literature on the on the utility,  
NOTE Confidence: 0.802796796521739  
00:21:06.040 --> 00:21:08.086 clinical utility of these types of  
NOTE Confidence: 0.802796796521739  
00:21:08.086 --> 00:21:09.821 tools for substance use disorder  
NOTE Confidence: 0.802796796521739

00:21:09.821 --> 00:21:12.005 but also for other types of mental  
NOTE Confidence: 0.802796796521739

00:21:12.005 --> 00:21:12.735 health conditions.  
NOTE Confidence: 0.802796796521739

00:21:12.735 --> 00:21:16.025 And I I just wanted to mention this is  
NOTE Confidence: 0.802796796521739

00:21:16.025 --> 00:21:18.356 something that if you are a clinician,  
NOTE Confidence: 0.802796796521739

00:21:18.360 --> 00:21:19.320 if you don't know about this,  
NOTE Confidence: 0.802796796521739

00:21:19.320 --> 00:21:21.078 you you should because it's undoubtedly  
NOTE Confidence: 0.802796796521739

00:21:21.078 --> 00:21:23.503 a big part of of what is going to be  
NOTE Confidence: 0.802796796521739

00:21:23.503 --> 00:21:25.519 a part of our future of healthcare.  
NOTE Confidence: 0.802796796521739

00:21:25.520 --> 00:21:27.098 And surely you know our our  
NOTE Confidence: 0.802796796521739

00:21:27.098 --> 00:21:28.680 residents and then the trainees,  
NOTE Confidence: 0.802796796521739

00:21:28.680 --> 00:21:29.888 medical students should should  
NOTE Confidence: 0.802796796521739

00:21:29.888 --> 00:21:31.398 surely be aware of this.  
NOTE Confidence: 0.802796796521739

00:21:31.400 --> 00:21:34.096 So it's the case now in this country  
NOTE Confidence: 0.802796796521739

00:21:34.096 --> 00:21:36.940 that software can be prescribed by  
NOTE Confidence: 0.802796796521739

00:21:36.940 --> 00:21:39.470 doctors and there's a there's a  
NOTE Confidence: 0.802796796521739

00:21:39.470 --> 00:21:41.500 category of medical devices that

NOTE Confidence: 0.802796796521739  
00:21:41.579 --> 00:21:44.117 the US Food and Drug Administration  
NOTE Confidence: 0.802796796521739  
00:21:44.120 --> 00:21:46.958 calls software as a medical device  
NOTE Confidence: 0.802796796521739  
00:21:46.960 --> 00:21:49.336 where you can go to the FDA with  
NOTE Confidence: 0.802796796521739  
00:21:49.336 --> 00:21:51.598 data from a clinical trial seeking  
NOTE Confidence: 0.802796796521739  
00:21:51.598 --> 00:21:53.980 a label saying this software is  
NOTE Confidence: 0.802796796521739  
00:21:54.054 --> 00:21:56.038 effective in the prevention,  
NOTE Confidence: 0.802796796521739  
00:21:56.040 --> 00:21:57.565 treatment or management of some  
NOTE Confidence: 0.802796796521739  
00:21:57.565 --> 00:21:58.480 disease or disorder.  
NOTE Confidence: 0.802796796521739  
00:21:58.480 --> 00:22:00.496 And you have to meet a lot of  
NOTE Confidence: 0.802796796521739  
00:22:00.496 --> 00:22:01.000 different requirements.  
NOTE Confidence: 0.802796796521739  
00:22:01.000 --> 00:22:03.191 But if you if you meet the  
NOTE Confidence: 0.802796796521739  
00:22:03.191 --> 00:22:04.950 requirements and and you get sort  
NOTE Confidence: 0.802796796521739  
00:22:04.950 --> 00:22:06.559 of authorization for that,  
NOTE Confidence: 0.802796796521739  
00:22:06.559 --> 00:22:07.918 for that claim,  
NOTE Confidence: 0.802796796521739  
00:22:07.920 --> 00:22:10.806 you become what's called a prescription  
NOTE Confidence: 0.802796796521739

00:22:10.806 --> 00:22:13.212 digital therapeutic and that software

NOTE Confidence: 0.802796796521739

00:22:13.212 --> 00:22:15.630 is an eligible to be prescribed

NOTE Confidence: 0.802796796521739

00:22:15.630 --> 00:22:17.839 by clinicians in this country.

NOTE Confidence: 0.802796796521739

00:22:17.840 --> 00:22:19.946 And the first time that happened

NOTE Confidence: 0.802796796521739

00:22:19.946 --> 00:22:23.665 was in 2017 and that happened to be

NOTE Confidence: 0.802796796521739

00:22:23.665 --> 00:22:25.835 a this computerized intervention

NOTE Confidence: 0.802796796521739

00:22:25.835 --> 00:22:29.354 I just described to you for this

NOTE Confidence: 0.802796796521739

00:22:29.354 --> 00:22:30.545 community reinforcement approach

NOTE Confidence: 0.802796796521739

00:22:30.545 --> 00:22:32.530 to behaviour therapy for substance

NOTE Confidence: 0.802796796521739

00:22:32.588 --> 00:22:33.320 use disorders.

NOTE Confidence: 0.802796796521739

00:22:33.320 --> 00:22:36.356 And then the second one which was

NOTE Confidence: 0.802796796521739

00:22:36.356 --> 00:22:39.002 FDA cleared in 2018 was a specific

NOTE Confidence: 0.802796796521739

00:22:39.002 --> 00:22:41.223 indication of that intervention for

NOTE Confidence: 0.802796796521739

00:22:41.223 --> 00:22:43.438 treatment of opioid use disorder.

NOTE Confidence: 0.802796796521739

00:22:43.440 --> 00:22:45.897 Now we have a growing array of

NOTE Confidence: 0.802796796521739

00:22:45.897 --> 00:22:46.950 digital therapeutics that

NOTE Confidence: 0.957481133571428  
00:22:47.015 --> 00:22:48.959 are available for prescription.  
NOTE Confidence: 0.957481133571428  
00:22:48.960 --> 00:22:51.039 Most of them are in the mental health space,  
NOTE Confidence: 0.957481133571428  
00:22:51.040 --> 00:22:54.832 not all and one includes a  
NOTE Confidence: 0.957481133571428  
00:22:54.832 --> 00:22:57.360 pediatric indication for ADHD.  
NOTE Confidence: 0.957481133571428  
00:22:57.360 --> 00:22:59.880 So again FDA is not going to look at your,  
NOTE Confidence: 0.957481133571428  
00:22:59.880 --> 00:23:02.568 your your software if it's if it's  
NOTE Confidence: 0.957481133571428  
00:23:02.568 --> 00:23:05.368 a general Wellness app or a health  
NOTE Confidence: 0.957481133571428  
00:23:05.368 --> 00:23:07.720 general health promotion type of tool.  
NOTE Confidence: 0.957481133571428  
00:23:07.720 --> 00:23:09.478 Those are excluded from regulatory oversight.  
NOTE Confidence: 0.957481133571428  
00:23:09.480 --> 00:23:11.000 But it really has to be you know,  
NOTE Confidence: 0.957481133571428  
00:23:11.000 --> 00:23:11.752 software driven,  
NOTE Confidence: 0.957481133571428  
00:23:11.752 --> 00:23:14.384 evidence based and seeking to make a  
NOTE Confidence: 0.957481133571428  
00:23:14.384 --> 00:23:16.356 claim of this is a potent intervention.  
NOTE Confidence: 0.957481133571428  
00:23:16.360 --> 00:23:19.120 Some people call these digital pills.  
NOTE Confidence: 0.957481133571428  
00:23:19.120 --> 00:23:22.120 So you know, there's been a lot of  
NOTE Confidence: 0.957481133571428

00:23:22.120 --> 00:23:24.800 excitement around this evolution in in  
NOTE Confidence: 0.957481133571428

00:23:24.800 --> 00:23:27.136 the regulatory space and there are other,  
NOTE Confidence: 0.957481133571428

00:23:27.136 --> 00:23:27.718 I'll speak later,  
NOTE Confidence: 0.957481133571428

00:23:27.720 --> 00:23:29.140 there are multiple other paths  
NOTE Confidence: 0.957481133571428

00:23:29.140 --> 00:23:30.276 to deployment as well.  
NOTE Confidence: 0.957481133571428

00:23:30.280 --> 00:23:32.044 But what we have seen, you know,  
NOTE Confidence: 0.957481133571428

00:23:32.044 --> 00:23:33.458 having worked in this space for a  
NOTE Confidence: 0.957481133571428

00:23:33.458 --> 00:23:34.754 long time and having clinicians come  
NOTE Confidence: 0.957481133571428

00:23:34.754 --> 00:23:36.380 to us and say I'm excited about this,  
NOTE Confidence: 0.957481133571428

00:23:36.380 --> 00:23:37.355 I'm excited about the data,  
NOTE Confidence: 0.957481133571428

00:23:37.360 --> 00:23:38.680 my patients are interested in this,  
NOTE Confidence: 0.957481133571428

00:23:38.680 --> 00:23:39.640 What should I offer?  
NOTE Confidence: 0.957481133571428

00:23:39.640 --> 00:23:41.520 If I go to the App Store,  
NOTE Confidence: 0.957481133571428

00:23:41.520 --> 00:23:43.032 there are huge numbers of mental  
NOTE Confidence: 0.957481133571428

00:23:43.032 --> 00:23:44.040 health apps out there.  
NOTE Confidence: 0.957481133571428

00:23:44.040 --> 00:23:44.960 How do I navigate that?

NOTE Confidence: 0.957481133571428  
00:23:44.960 --> 00:23:45.998 How do I know what's effective,  
NOTE Confidence: 0.957481133571428  
00:23:46.000 --> 00:23:46.586 what's not,  
NOTE Confidence: 0.957481133571428  
00:23:46.586 --> 00:23:47.758 what could be harmful.  
NOTE Confidence: 0.957481133571428  
00:23:47.760 --> 00:23:49.811 And so there are there are multiple  
NOTE Confidence: 0.957481133571428  
00:23:49.811 --> 00:23:51.080 ways to do that.  
NOTE Confidence: 0.957481133571428  
00:23:51.080 --> 00:23:53.342 But one benefit of this particular  
NOTE Confidence: 0.957481133571428  
00:23:53.342 --> 00:23:56.116 pathway is that you know if something  
NOTE Confidence: 0.957481133571428  
00:23:56.116 --> 00:23:58.106 has gotten this designation by  
NOTE Confidence: 0.957481133571428  
00:23:58.106 --> 00:24:00.437 FDA that it's really you know,  
NOTE Confidence: 0.957481133571428  
00:24:00.440 --> 00:24:02.715 been carefully vetted and really you know,  
NOTE Confidence: 0.957481133571428  
00:24:02.720 --> 00:24:04.904 had to meet all kinds of criteria  
NOTE Confidence: 0.957481133571428  
00:24:04.904 --> 00:24:07.038 to say indeed this is you know,  
NOTE Confidence: 0.957481133571428  
00:24:07.040 --> 00:24:08.360 safe and effective in preventing,  
NOTE Confidence: 0.957481133571428  
00:24:08.360 --> 00:24:10.196 treating or managing a health condition.  
NOTE Confidence: 0.957481133571428  
00:24:10.200 --> 00:24:12.464 So this is a growing, growing area,  
NOTE Confidence: 0.957481133571428

00:24:12.464 --> 00:24:14.000 rapidly growing area.  
NOTE Confidence: 0.957481133571428

00:24:14.000 --> 00:24:15.764 But I just want to tell you that you  
NOTE Confidence: 0.957481133571428

00:24:15.764 --> 00:24:17.514 know I I've highlighted some examples  
NOTE Confidence: 0.957481133571428

00:24:17.514 --> 00:24:19.405 of digital therapeutics in the realm  
NOTE Confidence: 0.957481133571428

00:24:19.405 --> 00:24:21.075 of substance use disorder treatment.  
NOTE Confidence: 0.957481133571428

00:24:21.080 --> 00:24:22.753 But we have all kinds of examples  
NOTE Confidence: 0.957481133571428

00:24:22.753 --> 00:24:24.209 now of robust clinical effects  
NOTE Confidence: 0.957481133571428

00:24:24.209 --> 00:24:25.919 for lots of health conditions,  
NOTE Confidence: 0.957481133571428

00:24:25.920 --> 00:24:27.036 heavily mental health.  
NOTE Confidence: 0.957481133571428

00:24:27.036 --> 00:24:30.488 So we've seen as you see here on the  
NOTE Confidence: 0.957481133571428

00:24:30.488 --> 00:24:32.413 side decreases in mental symptoms  
NOTE Confidence: 0.957481133571428

00:24:32.413 --> 00:24:35.264 in things like ADHD, anxiety,  
NOTE Confidence: 0.957481133571428

00:24:35.264 --> 00:24:36.814 depression, PTSDOCD, schizophrenia.  
NOTE Confidence: 0.957481133571428

00:24:36.814 --> 00:24:39.616 We've seen you can improve remission  
NOTE Confidence: 0.957481133571428

00:24:39.616 --> 00:24:42.715 rates in in some types of mental health.  
NOTE Confidence: 0.957481133571428

00:24:42.720 --> 00:24:46.280 We've done a number of studies with



NOTE Confidence: 0.957481133571428

00:24:46.280 --> 00:24:48.560 chronic pain patients and you know,

NOTE Confidence: 0.957481133571428

00:24:48.560 --> 00:24:50.768 giving people a digital tool to

NOTE Confidence: 0.957481133571428

00:24:50.768 --> 00:24:52.633 help them better manage chronic

NOTE Confidence: 0.957481133571428

00:24:52.633 --> 00:24:54.536 pain and to help prevent chronic

NOTE Confidence: 0.957481133571428

00:24:54.536 --> 00:24:56.076 pain from ruining their lives,

NOTE Confidence: 0.957481133571428

00:24:56.080 --> 00:24:57.379 ruining their relationships,

NOTE Confidence: 0.957481133571428

00:24:57.379 --> 00:24:59.544 preventing them from achieving goals

NOTE Confidence: 0.957481133571428

00:24:59.544 --> 00:25:02.260 and and giving them resources and to

NOTE Confidence: 0.957481133571428

00:25:02.260 --> 00:25:04.360 help them help them in these areas.

NOTE Confidence: 0.957481133571428

00:25:04.360 --> 00:25:06.340 And what we find is that you know we

NOTE Confidence: 0.957481133571428

00:25:06.340 --> 00:25:08.222 can not only improve pain management

NOTE Confidence: 0.957481133571428

00:25:08.222 --> 00:25:10.286 and sort of goal directed activity

NOTE Confidence: 0.957481133571428

00:25:10.286 --> 00:25:11.918 among chronic pain patients.

NOTE Confidence: 0.957481133571428

00:25:11.920 --> 00:25:13.320 So we've also seen that we can

NOTE Confidence: 0.957481133571428

00:25:13.320 --> 00:25:14.108 reduce Ed visits, right.

NOTE Confidence: 0.957481133571428

00:25:14.108 --> 00:25:15.424 So when you have something in your  
NOTE Confidence: 0.957481133571428

00:25:15.424 --> 00:25:16.800 pocket that in the moment can help you,  
NOTE Confidence: 0.957481133571428

00:25:16.800 --> 00:25:19.638 when maybe you're catastrophizing about pain,  
NOTE Confidence: 0.957481133571428

00:25:19.640 --> 00:25:21.356 perhaps that tool can help you  
NOTE Confidence: 0.957481133571428

00:25:21.356 --> 00:25:23.520 instead of you know needing to go to  
NOTE Confidence: 0.957481133571428

00:25:23.520 --> 00:25:25.480 the Ed as as the response to that.  
NOTE Confidence: 0.957481133571428

00:25:25.480 --> 00:25:28.144 And so you know surely there  
NOTE Confidence: 0.957481133571428

00:25:28.144 --> 00:25:29.920 this could reduce cost  
NOTE Confidence: 0.843493235294118

00:25:30.011 --> 00:25:32.447 of of healthcare utilization  
NOTE Confidence: 0.843493235294118

00:25:32.447 --> 00:25:34.274 including Ed visits.  
NOTE Confidence: 0.843493235294118

00:25:34.280 --> 00:25:36.110 And we've also seen some really  
NOTE Confidence: 0.843493235294118

00:25:36.110 --> 00:25:37.508 compelling data in reducing  
NOTE Confidence: 0.843493235294118

00:25:37.508 --> 00:25:39.478 healthcare costs for panic disorder,  
NOTE Confidence: 0.843493235294118

00:25:39.480 --> 00:25:40.284 substance use disorder  
NOTE Confidence: 0.843493235294118

00:25:40.284 --> 00:25:41.356 and opioid use disorder.  
NOTE Confidence: 0.843493235294118

00:25:41.360 --> 00:25:43.168 For example,

NOTE Confidence: 0.843493235294118  
00:25:43.168 --> 00:25:46.784 Mass Health Massachusetts Medicaid  
NOTE Confidence: 0.843493235294118  
00:25:46.784 --> 00:25:50.726 just recently published data with  
NOTE Confidence: 0.843493235294118  
00:25:50.726 --> 00:25:52.682 these tools that I just described  
NOTE Confidence: 0.843493235294118  
00:25:52.682 --> 00:25:54.096 for treating digital therapeutics  
NOTE Confidence: 0.843493235294118  
00:25:54.096 --> 00:25:55.600 for treating substance use  
NOTE Confidence: 0.843493235294118  
00:25:55.600 --> 00:25:57.820 disorder that they used with their  
NOTE Confidence: 0.843493235294118  
00:25:57.820 --> 00:25:59.512 first cohort of patients in the  
NOTE Confidence: 0.843493235294118  
00:25:59.512 --> 00:26:01.500 state who got access to those.  
NOTE Confidence: 0.843493235294118  
00:26:01.500 --> 00:26:04.160 And they showed that they dropped Ed  
NOTE Confidence: 0.843493235294118  
00:26:04.235 --> 00:26:06.536 utilization by 45% with when these  
NOTE Confidence: 0.843493235294118  
00:26:06.536 --> 00:26:09.012 tools were part of care models and  
NOTE Confidence: 0.843493235294118  
00:26:09.012 --> 00:26:11.247 they dropped hospitalizations by 64%.  
NOTE Confidence: 0.843493235294118  
00:26:11.247 --> 00:26:12.348 Very compelling data.  
NOTE Confidence: 0.843493235294118  
00:26:12.348 --> 00:26:14.840 I was very excited to see it.  
NOTE Confidence: 0.843493235294118  
00:26:14.840 --> 00:26:16.528 You know this is in the real world  
NOTE Confidence: 0.843493235294118

00:26:16.528 --> 00:26:18.080 where things are is in the wild what,  
NOTE Confidence: 0.843493235294118

00:26:18.080 --> 00:26:19.958 what kinds of clinical effects you  
NOTE Confidence: 0.843493235294118

00:26:19.958 --> 00:26:22.319 can see but also economic effects.  
NOTE Confidence: 0.843493235294118

00:26:22.320 --> 00:26:23.870 And we've seen also another  
NOTE Confidence: 0.843493235294118

00:26:23.870 --> 00:26:25.420 application of these types of  
NOTE Confidence: 0.843493235294118

00:26:25.478 --> 00:26:27.218 tools is in promoting medication  
NOTE Confidence: 0.843493235294118

00:26:27.218 --> 00:26:28.958 adherence and also adherence to  
NOTE Confidence: 0.843493235294118

00:26:29.018 --> 00:26:30.758 various types of medical regimen  
NOTE Confidence: 0.843493235294118

00:26:30.760 --> 00:26:33.520 and then also functional outcomes,  
NOTE Confidence: 0.843493235294118

00:26:33.520 --> 00:26:34.576 you know,  
NOTE Confidence: 0.843493235294118

00:26:34.576 --> 00:26:37.171 really helping people have meaningful lives.  
NOTE Confidence: 0.843493235294118

00:26:37.171 --> 00:26:39.526 So this is just a snapshot of  
NOTE Confidence: 0.843493235294118

00:26:39.526 --> 00:26:41.156 what's evolving in this space.  
NOTE Confidence: 0.843493235294118

00:26:41.160 --> 00:26:43.330 There's a lot of exciting work in  
NOTE Confidence: 0.843493235294118

00:26:43.330 --> 00:26:44.969 the prevention space and really  
NOTE Confidence: 0.843493235294118

00:26:44.969 --> 00:26:46.901 you know really robust effects in

NOTE Confidence: 0.843493235294118  
00:26:46.901 --> 00:26:48.364 in building up protective factors  
NOTE Confidence: 0.843493235294118  
00:26:48.364 --> 00:26:49.974 and reducing risk factors for  
NOTE Confidence: 0.843493235294118  
00:26:49.974 --> 00:26:51.560 lots of health conditions,  
NOTE Confidence: 0.843493235294118  
00:26:51.560 --> 00:26:52.626 mental health,  
NOTE Confidence: 0.843493235294118  
00:26:52.626 --> 00:26:56.140 substance use as well as chronic  
NOTE Confidence: 0.843493235294118  
00:26:56.140 --> 00:26:57.520 disease management.  
NOTE Confidence: 0.843493235294118  
00:26:57.520 --> 00:26:59.900 So I think it's a really interesting  
NOTE Confidence: 0.843493235294118  
00:26:59.900 --> 00:27:00.920 time of opportunity.  
NOTE Confidence: 0.843493235294118  
00:27:00.920 --> 00:27:02.768 I've been doing this for a long  
NOTE Confidence: 0.843493235294118  
00:27:02.768 --> 00:27:05.270 time and you know I have seen a  
NOTE Confidence: 0.843493235294118  
00:27:05.270 --> 00:27:06.920 whole confluence of factors recently  
NOTE Confidence: 0.843493235294118  
00:27:06.980 --> 00:27:08.960 that I'm pretty excited about that  
NOTE Confidence: 0.843493235294118  
00:27:08.960 --> 00:27:12.224 I think positions us as a field to  
NOTE Confidence: 0.843493235294118  
00:27:12.224 --> 00:27:14.536 really envision and help shape I  
NOTE Confidence: 0.843493235294118  
00:27:14.536 --> 00:27:16.540 think a very promising future for  
NOTE Confidence: 0.843493235294118

00:27:16.614 --> 00:27:19.560 for digital health and digital therapeutics.

NOTE Confidence: 0.843493235294118

00:27:19.560 --> 00:27:22.010 So we surely know we've seen growing

NOTE Confidence: 0.843493235294118

00:27:22.010 --> 00:27:24.294 demand for remote models of of

NOTE Confidence: 0.843493235294118

00:27:24.294 --> 00:27:26.239 care and and intervention delivery.

NOTE Confidence: 0.843493235294118

00:27:26.240 --> 00:27:28.685 We also unfortunately no across

NOTE Confidence: 0.843493235294118

00:27:28.685 --> 00:27:32.849 the globe we've seen a big surge in

NOTE Confidence: 0.843493235294118

00:27:32.849 --> 00:27:35.272 behavioral health needs in this country,

NOTE Confidence: 0.843493235294118

00:27:35.272 --> 00:27:37.120 in many other parts of the world,

NOTE Confidence: 0.843493235294118

00:27:37.120 --> 00:27:40.040 in youth, in adult populations.

NOTE Confidence: 0.843493235294118

00:27:40.040 --> 00:27:41.996 You know the statistics are really,

NOTE Confidence: 0.843493235294118

00:27:42.000 --> 00:27:44.244 really alarming and and and we

NOTE Confidence: 0.843493235294118

00:27:44.244 --> 00:27:47.007 also sadly know that a lot of

NOTE Confidence: 0.843493235294118

00:27:47.007 --> 00:27:48.987 people either won't access mental

NOTE Confidence: 0.843493235294118

00:27:48.987 --> 00:27:50.519 health care or can't.

NOTE Confidence: 0.843493235294118

00:27:50.520 --> 00:27:52.840 And that's not just true in you know,

NOTE Confidence: 0.843493235294118

00:27:52.840 --> 00:27:54.040 low and middle income countries.

NOTE Confidence: 0.843493235294118  
00:27:54.040 --> 00:27:55.160 That's true in rural America.  
NOTE Confidence: 0.843493235294118  
00:27:55.160 --> 00:27:57.218 That's true in in many communities  
NOTE Confidence: 0.843493235294118  
00:27:57.218 --> 00:27:59.320 as you all likely well know.  
NOTE Confidence: 0.843493235294118  
00:27:59.320 --> 00:28:01.510 And so there's this big population  
NOTE Confidence: 0.843493235294118  
00:28:01.510 --> 00:28:04.554 level need and and and you know how can  
NOTE Confidence: 0.843493235294118  
00:28:04.554 --> 00:28:07.239 we scale up capacity to to achieve that.  
NOTE Confidence: 0.843493235294118  
00:28:07.240 --> 00:28:08.832 And we at the same time have been  
NOTE Confidence: 0.843493235294118  
00:28:08.832 --> 00:28:10.239 seeing a pretty striking growth  
NOTE Confidence: 0.843493235294118  
00:28:10.239 --> 00:28:11.839 in the digital health industry.  
NOTE Confidence: 0.843493235294118  
00:28:11.840 --> 00:28:13.424 It it calmed down a bit in the  
NOTE Confidence: 0.843493235294118  
00:28:13.424 --> 00:28:14.716 last year and a half or so,  
NOTE Confidence: 0.843493235294118  
00:28:14.720 --> 00:28:18.532 but it is been growing at at at  
NOTE Confidence: 0.843493235294118  
00:28:18.532 --> 00:28:21.062 great just exponentially really in  
NOTE Confidence: 0.843493235294118  
00:28:21.062 --> 00:28:23.520 terms of start-ups in the space,  
NOTE Confidence: 0.843493235294118  
00:28:23.520 --> 00:28:26.280 in terms of venture investment in the space.  
NOTE Confidence: 0.843493235294118

00:28:26.280 --> 00:28:28.648 But also as you may know there are  
NOTE Confidence: 0.843493235294118

00:28:28.648 --> 00:28:30.794 a number of global pharmaceutical  
NOTE Confidence: 0.843493235294118

00:28:30.794 --> 00:28:33.269 companies that are heavily investing  
NOTE Confidence: 0.843493235294118

00:28:33.269 --> 00:28:35.860 in digital therapeutics and building  
NOTE Confidence: 0.843493235294118

00:28:35.860 --> 00:28:36.878 out digital  
NOTE Confidence: 0.927060297272727

00:28:36.880 --> 00:28:38.750 health formulas, Digital therapeutics in  
NOTE Confidence: 0.927060297272727

00:28:38.750 --> 00:28:41.043 their portfolio that sort of complement  
NOTE Confidence: 0.927060297272727

00:28:41.043 --> 00:28:43.251 extend what they traditionally do in  
NOTE Confidence: 0.927060297272727

00:28:43.251 --> 00:28:45.119 the medication space and sometimes  
NOTE Confidence: 0.927060297272727

00:28:45.120 --> 00:28:46.998 that these are these are digital  
NOTE Confidence: 0.927060297272727

00:28:46.998 --> 00:28:48.610 therapeutics that are intended to  
NOTE Confidence: 0.927060297272727

00:28:48.610 --> 00:28:50.458 have synergistic effects with some of  
NOTE Confidence: 0.927060297272727

00:28:50.458 --> 00:28:52.364 their medications and or promote you  
NOTE Confidence: 0.927060297272727

00:28:52.364 --> 00:28:53.914 know more adherence to medications.  
NOTE Confidence: 0.927060297272727

00:28:53.920 --> 00:28:56.044 But sometimes these are stand alone  
NOTE Confidence: 0.927060297272727

00:28:56.044 --> 00:28:58.902 tools for a health condition that can be



NOTE Confidence: 0.927060297272727

00:28:58.902 --> 00:29:01.105 agnostic to you know if they're with,

NOTE Confidence: 0.927060297272727

00:29:01.105 --> 00:29:02.755 if they're used with or without

NOTE Confidence: 0.927060297272727

00:29:02.755 --> 00:29:03.680 various medications.

NOTE Confidence: 0.927060297272727

00:29:03.680 --> 00:29:05.815 So there's a lot of interesting growth

NOTE Confidence: 0.927060297272727

00:29:05.815 --> 00:29:08.027 in the pharma space that you may be

NOTE Confidence: 0.927060297272727

00:29:08.027 --> 00:29:10.557 aware of and glad to talk more about that.

NOTE Confidence: 0.927060297272727

00:29:10.560 --> 00:29:11.196 And then additionally,

NOTE Confidence: 0.927060297272727

00:29:11.196 --> 00:29:12.680 there's A at the same time all

NOTE Confidence: 0.927060297272727

00:29:12.720 --> 00:29:13.560 of this is happening,

NOTE Confidence: 0.927060297272727

00:29:13.560 --> 00:29:16.154 we're seeing more paths to deployment, right.

NOTE Confidence: 0.927060297272727

00:29:16.154 --> 00:29:17.792 So I talked about one which is

NOTE Confidence: 0.927060297272727

00:29:17.792 --> 00:29:19.279 this FDA regulatory pathway.

NOTE Confidence: 0.927060297272727

00:29:19.280 --> 00:29:22.560 But we also know that in this country,

NOTE Confidence: 0.927060297272727

00:29:22.560 --> 00:29:24.355 you know there are employers

NOTE Confidence: 0.927060297272727

00:29:24.355 --> 00:29:26.634 that are building out their own

NOTE Confidence: 0.927060297272727

00:29:26.634 --> 00:29:28.278 offering to their employees.  
NOTE Confidence: 0.927060297272727

00:29:28.280 --> 00:29:29.824 There are pharmacy benefit  
NOTE Confidence: 0.927060297272727

00:29:29.824 --> 00:29:31.754 managers that are doing that.  
NOTE Confidence: 0.927060297272727

00:29:31.760 --> 00:29:33.720 There are groups like CVS,  
NOTE Confidence: 0.927060297272727

00:29:33.720 --> 00:29:35.116 Caremark and and others.  
NOTE Confidence: 0.927060297272727

00:29:35.116 --> 00:29:37.646 So there's a growing array and there's  
NOTE Confidence: 0.927060297272727

00:29:37.646 --> 00:29:40.776 even over the counter offerings now as  
NOTE Confidence: 0.927060297272727

00:29:40.776 --> 00:29:44.640 well as this prescription model I mentioned.  
NOTE Confidence: 0.927060297272727

00:29:44.640 --> 00:29:46.200 And then the final piece to  
NOTE Confidence: 0.927060297272727

00:29:46.200 --> 00:29:47.760 this of course is payment.  
NOTE Confidence: 0.927060297272727

00:29:47.760 --> 00:29:49.076 How does this get paid for it?  
NOTE Confidence: 0.927060297272727

00:29:49.080 --> 00:29:51.124 This is a huge issue and this  
NOTE Confidence: 0.927060297272727

00:29:51.124 --> 00:29:52.559 has been evolving as well.  
NOTE Confidence: 0.927060297272727

00:29:52.560 --> 00:29:54.732 I think that many people overestimated  
NOTE Confidence: 0.927060297272727

00:29:54.732 --> 00:29:56.671 the pace at wish reimbursement  
NOTE Confidence: 0.927060297272727

00:29:56.671 --> 00:29:58.756 would kick in for these.

NOTE Confidence: 0.927060297272727

00:29:58.760 --> 00:30:01.616 So even if you get approved by FDA

NOTE Confidence: 0.927060297272727

00:30:01.616 --> 00:30:04.239 and your prescribable software,

NOTE Confidence: 0.927060297272727

00:30:04.240 --> 00:30:05.356 it may not get paid for.

NOTE Confidence: 0.927060297272727

00:30:05.360 --> 00:30:07.160 So there are definitely some

NOTE Confidence: 0.927060297272727

00:30:07.160 --> 00:30:08.560 private payers paying for this.

NOTE Confidence: 0.927060297272727

00:30:08.560 --> 00:30:11.484 They're definitely some employers

NOTE Confidence: 0.927060297272727

00:30:11.484 --> 00:30:13.677 paying for this.

NOTE Confidence: 0.927060297272727

00:30:13.680 --> 00:30:16.160 There are a number of states that have

NOTE Confidence: 0.927060297272727

00:30:16.160 --> 00:30:17.884 Medicaid coverage like I mentioned

NOTE Confidence: 0.927060297272727

00:30:17.884 --> 00:30:19.912 Massachusetts as an example for this,

NOTE Confidence: 0.927060297272727

00:30:19.912 --> 00:30:22.440 but but it's it's just it's a minority

NOTE Confidence: 0.927060297272727

00:30:22.509 --> 00:30:24.921 of states that have Medicaid coverage

NOTE Confidence: 0.927060297272727

00:30:24.921 --> 00:30:27.018 and there's no national coverage

NOTE Confidence: 0.927060297272727

00:30:27.018 --> 00:30:29.556 framework by Medicare at this point.

NOTE Confidence: 0.927060297272727

00:30:29.560 --> 00:30:30.440 There is,

NOTE Confidence: 0.927060297272727

00:30:30.440 --> 00:30:30.880 though,  
NOTE Confidence: 0.927060297272727

00:30:30.880 --> 00:30:34.600 a lot of hope that a pending legislation  
NOTE Confidence: 0.927060297272727

00:30:34.600 --> 00:30:38.050 right now called the Access to  
NOTE Confidence: 0.927060297272727

00:30:38.050 --> 00:30:41.875 Prescription to Digital Therapeutics Act  
NOTE Confidence: 0.927060297272727

00:30:41.880 --> 00:30:44.715 that it may get past timelines unknown.  
NOTE Confidence: 0.927060297272727

00:30:44.720 --> 00:30:45.536 There was hope it was going  
NOTE Confidence: 0.927060297272727

00:30:45.536 --> 00:30:46.080 to happen last year,  
NOTE Confidence: 0.927060297272727

00:30:46.080 --> 00:30:47.830 but I know there's a lot of  
NOTE Confidence: 0.927060297272727

00:30:47.830 --> 00:30:49.160 advocacy efforts for this year.  
NOTE Confidence: 0.927060297272727

00:30:49.160 --> 00:30:50.720 And if that gets passed,  
NOTE Confidence: 0.927060297272727

00:30:50.720 --> 00:30:52.420 then we would have national  
NOTE Confidence: 0.927060297272727

00:30:52.420 --> 00:30:53.780 Medicare coverage of digital  
NOTE Confidence: 0.927060297272727

00:30:53.780 --> 00:30:54.960 therapeutics in this country.  
NOTE Confidence: 0.927060297272727

00:30:54.960 --> 00:30:57.690 And and some colleagues feel like  
NOTE Confidence: 0.927060297272727

00:30:57.690 --> 00:31:00.745 that would then expedite the pace at  
NOTE Confidence: 0.927060297272727

00:31:00.745 --> 00:31:03.433 which Medicaid would kick in as well.

NOTE Confidence: 0.927060297272727

00:31:03.440 --> 00:31:05.760 So there's a lot happening in this country.

NOTE Confidence: 0.927060297272727

00:31:05.760 --> 00:31:07.440 There's a lot happening in other countries.

NOTE Confidence: 0.927060297272727

00:31:07.440 --> 00:31:09.065 There's entire countries that have

NOTE Confidence: 0.927060297272727

00:31:09.065 --> 00:31:10.040 national coverage frameworks,

NOTE Confidence: 0.927060297272727

00:31:10.040 --> 00:31:12.480 like Germany and the UK.

NOTE Confidence: 0.927060297272727

00:31:12.480 --> 00:31:14.314 Asia has been exploding in this space,

NOTE Confidence: 0.927060297272727

00:31:14.320 --> 00:31:15.948 many countries in Asia.

NOTE Confidence: 0.927060297272727

00:31:15.948 --> 00:31:18.680 So it's a really interesting time and

NOTE Confidence: 0.927060297272727

00:31:18.680 --> 00:31:19.928 there's a lot still to sort of work

NOTE Confidence: 0.927060297272727

00:31:19.928 --> 00:31:21.436 out in terms of like what's out there,

NOTE Confidence: 0.927060297272727

00:31:21.440 --> 00:31:22.500 because there's there's unfortunately

NOTE Confidence: 0.927060297272727

00:31:22.500 --> 00:31:23.560 a lot of hype,

NOTE Confidence: 0.927060297272727

00:31:23.560 --> 00:31:25.078 but there's also a lot of

NOTE Confidence: 0.927060297272727

00:31:25.078 --> 00:31:25.837 really potent tools.

NOTE Confidence: 0.927060297272727

00:31:25.840 --> 00:31:26.764 And I'm very optimistic

NOTE Confidence: 0.927060297272727

00:31:26.764 --> 00:31:28.150 that we're going to get to  
NOTE Confidence: 0.938937444666667

00:31:28.205 --> 00:31:30.245 a landscape where we really have a much  
NOTE Confidence: 0.938937444666667

00:31:30.245 --> 00:31:31.726 more widespread access to these tools  
NOTE Confidence: 0.938937444666667

00:31:31.726 --> 00:31:35.400 that people can use in their daily lives.  
NOTE Confidence: 0.938937444666667

00:31:35.400 --> 00:31:37.381 So what I thought I would highlight  
NOTE Confidence: 0.938937444666667

00:31:37.381 --> 00:31:39.608 at this point is a a project that we  
NOTE Confidence: 0.938937444666667

00:31:39.608 --> 00:31:41.751 were able to do that shows you you  
NOTE Confidence: 0.938937444666667

00:31:41.751 --> 00:31:43.551 know so going beyond the clinical  
NOTE Confidence: 0.938937444666667

00:31:43.560 --> 00:31:45.240 trials that I highlighted to you,  
NOTE Confidence: 0.938937444666667

00:31:45.240 --> 00:31:46.476 you know those are promising effects.  
NOTE Confidence: 0.938937444666667

00:31:46.480 --> 00:31:48.952 But what if you really wanted to scale  
NOTE Confidence: 0.938937444666667

00:31:48.952 --> 00:31:52.030 up the use of digital tools and really  
NOTE Confidence: 0.938937444666667

00:31:52.030 --> 00:31:54.213 think about new healthcare delivery  
NOTE Confidence: 0.938937444666667

00:31:54.213 --> 00:31:56.396 models that centrally leverage digital  
NOTE Confidence: 0.938937444666667

00:31:56.396 --> 00:31:58.622 health tools as part of the care  
NOTE Confidence: 0.938937444666667

00:31:58.622 --> 00:32:00.675 model and what would the impact be.

NOTE Confidence: 0.938937444666667

00:32:00.680 --> 00:32:02.462 So I I'm going to tell you about an

NOTE Confidence: 0.938937444666667

00:32:02.462 --> 00:32:03.983 example of the study we've done in

NOTE Confidence: 0.938937444666667

00:32:03.983 --> 00:32:05.600 this space and this was a project

NOTE Confidence: 0.938937444666667

00:32:05.600 --> 00:32:07.040 funded by the US National Institute

NOTE Confidence: 0.938937444666667

00:32:07.040 --> 00:32:11.348 of Mental Health and it was a project

NOTE Confidence: 0.938937444666667

00:32:11.348 --> 00:32:14.020 we did in Latin America and we

NOTE Confidence: 0.938937444666667

00:32:14.020 --> 00:32:16.960 started in the country of Columbia.

NOTE Confidence: 0.938937444666667

00:32:16.960 --> 00:32:18.040 Columbia, as you may know,

NOTE Confidence: 0.938937444666667

00:32:18.040 --> 00:32:21.260 is a part of the world that has a very

NOTE Confidence: 0.938937444666667

00:32:21.260 --> 00:32:25.032 high mental health burden and very limited

NOTE Confidence: 0.938937444666667

00:32:25.032 --> 00:32:27.600 workforce capacity to tackle that burden.

NOTE Confidence: 0.938937444666667

00:32:27.600 --> 00:32:28.560 So you know,

NOTE Confidence: 0.938937444666667

00:32:28.560 --> 00:32:32.124 Columbia had generations of armed conflict

NOTE Confidence: 0.938937444666667

00:32:32.124 --> 00:32:35.798 and and if you know all the data show that,

NOTE Confidence: 0.938937444666667

00:32:35.800 --> 00:32:38.565 you know every community has been touched

NOTE Confidence: 0.938937444666667

00:32:38.565 --> 00:32:40.560 by this very high rates of depression,  
NOTE Confidence: 0.938937444666667

00:32:40.560 --> 00:32:42.876 very high rates of alcohol use,  
NOTE Confidence: 0.938937444666667

00:32:42.880 --> 00:32:44.770 soft and accompanied by domestic violence  
NOTE Confidence: 0.938937444666667

00:32:44.770 --> 00:32:47.119 and so very high mental health need.  
NOTE Confidence: 0.938937444666667

00:32:47.120 --> 00:32:48.368 But if you look at the  
NOTE Confidence: 0.938937444666667

00:32:48.368 --> 00:32:48.992 mental health workforce,  
NOTE Confidence: 0.938937444666667

00:32:49.000 --> 00:32:50.148 you have, you know,  
NOTE Confidence: 0.938937444666667

00:32:50.148 --> 00:32:51.870 a handful of psychiatrists in Bogota  
NOTE Confidence: 0.938937444666667

00:32:51.928 --> 00:32:53.880 or in some of the more urban settings.  
NOTE Confidence: 0.938937444666667

00:32:53.880 --> 00:32:55.560 But if you go into rural farming communities,  
NOTE Confidence: 0.938937444666667

00:32:55.560 --> 00:32:58.610 you have we you have no,  
NOTE Confidence: 0.938937444666667

00:32:58.610 --> 00:33:00.920 no access to sort of outpatient psychiatry.  
NOTE Confidence: 0.938937444666667

00:33:00.920 --> 00:33:03.260 There's really only inpatient psychiatric  
NOTE Confidence: 0.938937444666667

00:33:03.260 --> 00:33:05.600 hospitals sprinkled throughout the country.  
NOTE Confidence: 0.938937444666667

00:33:05.600 --> 00:33:07.364 So this is just an example of a part  
NOTE Confidence: 0.938937444666667

00:33:07.364 --> 00:33:09.180 of the world and there are many



NOTE Confidence: 0.938937444666667  
00:33:09.180 --> 00:33:10.797 other examples we could think of  
NOTE Confidence: 0.938937444666667  
00:33:10.797 --> 00:33:12.596 where you know you have this problem,  
NOTE Confidence: 0.938937444666667  
00:33:12.600 --> 00:33:12.835 right,  
NOTE Confidence: 0.938937444666667  
00:33:12.835 --> 00:33:14.715 you have this big need and you have  
NOTE Confidence: 0.938937444666667  
00:33:14.715 --> 00:33:16.276 limited capacity to meet the needs.  
NOTE Confidence: 0.938937444666667  
00:33:16.280 --> 00:33:18.116 So what what do you do?  
NOTE Confidence: 0.938937444666667  
00:33:18.120 --> 00:33:22.949 So what this project did is to leverage  
NOTE Confidence: 0.938937444666667  
00:33:22.949 --> 00:33:25.879 an integrated suite of digital health  
NOTE Confidence: 0.938937444666667  
00:33:25.879 --> 00:33:29.204 tools to seek to scale across the  
NOTE Confidence: 0.938937444666667  
00:33:29.204 --> 00:33:31.750 country screening and treatment for  
NOTE Confidence: 0.938937444666667  
00:33:31.750 --> 00:33:34.571 mental health conditions in a way  
NOTE Confidence: 0.938937444666667  
00:33:34.571 --> 00:33:36.833 that could help meet this need.  
NOTE Confidence: 0.938937444666667  
00:33:36.840 --> 00:33:38.856 So it was basically a digitally  
NOTE Confidence: 0.938937444666667  
00:33:38.856 --> 00:33:41.365 enhanced model of care that we did  
NOTE Confidence: 0.938937444666667  
00:33:41.365 --> 00:33:43.200 in partnership with Primary Care  
NOTE Confidence: 0.938937444666667

00:33:43.200 --> 00:33:44.560 Systems across Columbia.  
NOTE Confidence: 0.938937444666667

00:33:44.560 --> 00:33:46.541 And so Primary care in the country  
NOTE Confidence: 0.938937444666667

00:33:46.541 --> 00:33:48.572 of Columbia had never talked about  
NOTE Confidence: 0.938937444666667

00:33:48.572 --> 00:33:49.320 mental health.  
NOTE Confidence: 0.938937444666667

00:33:49.320 --> 00:33:51.462 It wasn't part of any routine  
NOTE Confidence: 0.938937444666667

00:33:51.462 --> 00:33:53.667 screening or included in care at  
NOTE Confidence: 0.938937444666667

00:33:53.667 --> 00:33:55.079 all before this project.  
NOTE Confidence: 0.938937444666667

00:33:55.080 --> 00:33:56.220 We know that's not true in  
NOTE Confidence: 0.938937444666667

00:33:56.220 --> 00:33:57.280 other parts of the world,  
NOTE Confidence: 0.938937444666667

00:33:57.280 --> 00:33:59.835 but it happened to be true there.  
NOTE Confidence: 0.938937444666667

00:33:59.840 --> 00:34:00.546 But this,  
NOTE Confidence: 0.938937444666667

00:34:00.546 --> 00:34:03.370 the benefit is that primary care was much  
NOTE Confidence: 0.938937444666667

00:34:03.442 --> 00:34:06.554 more accessible in many parts of the country,  
NOTE Confidence: 0.938937444666667

00:34:06.560 --> 00:34:07.613 unlike psychiatric care.  
NOTE Confidence: 0.938937444666667

00:34:07.613 --> 00:34:10.070 So there was surely some training of  
NOTE Confidence: 0.938937444666667

00:34:10.134 --> 00:34:12.439 primary care providers in understanding,

NOTE Confidence: 0.938937444666667  
00:34:12.440 --> 00:34:13.295 you know what,  
NOTE Confidence: 0.938937444666667  
00:34:13.295 --> 00:34:14.435 what is mental health?  
NOTE Confidence: 0.938937444666667  
00:34:14.440 --> 00:34:16.095 Why is mental health important  
NOTE Confidence: 0.938937444666667  
00:34:16.095 --> 00:34:17.750 in the whole as you  
NOTE Confidence: 0.87731970125  
00:34:17.816 --> 00:34:19.636 think about whole care models  
NOTE Confidence: 0.87731970125  
00:34:19.636 --> 00:34:21.596 for the patients you serve.  
NOTE Confidence: 0.87731970125  
00:34:21.596 --> 00:34:23.591 So it's definitely some clinician  
NOTE Confidence: 0.87731970125  
00:34:23.591 --> 00:34:25.981 training and and support to primary  
NOTE Confidence: 0.87731970125  
00:34:25.981 --> 00:34:27.911 care providers around embracing this.  
NOTE Confidence: 0.87731970125  
00:34:27.920 --> 00:34:30.422 But then basically we we integrated  
NOTE Confidence: 0.87731970125  
00:34:30.422 --> 00:34:32.959 into primary care across the country  
NOTE Confidence: 0.87731970125  
00:34:32.959 --> 00:34:35.353 and integrated suite of tools that  
NOTE Confidence: 0.87731970125  
00:34:35.360 --> 00:34:37.932 first included taking clinically  
NOTE Confidence: 0.87731970125  
00:34:37.932 --> 00:34:41.147 validated digital screeners for mental  
NOTE Confidence: 0.87731970125  
00:34:41.147 --> 00:34:43.895 health and alcohol use was also part  
NOTE Confidence: 0.87731970125

00:34:43.895 --> 00:34:46.180 of this and deliver that entirely in  
NOTE Confidence: 0.87731970125

00:34:46.180 --> 00:34:48.010 a digital assessment way that then  
NOTE Confidence: 0.87731970125

00:34:48.070 --> 00:34:50.026 directly fed into a digital clinical  
NOTE Confidence: 0.87731970125

00:34:50.026 --> 00:34:51.708 decision support tool that providers  
NOTE Confidence: 0.87731970125

00:34:51.708 --> 00:34:53.634 could use when interacting with the  
NOTE Confidence: 0.87731970125

00:34:53.634 --> 00:34:56.900 patient in front of them and to help  
NOTE Confidence: 0.87731970125

00:34:56.900 --> 00:35:00.090 with a diagnosis and then care models.  
NOTE Confidence: 0.87731970125

00:35:00.090 --> 00:35:02.880 And then also every single patient  
NOTE Confidence: 0.87731970125

00:35:02.880 --> 00:35:05.927 who met criteria for one of the  
NOTE Confidence: 0.87731970125

00:35:05.927 --> 00:35:07.272 conditions that we're screening for  
NOTE Confidence: 0.87731970125

00:35:07.272 --> 00:35:09.239 was also given a digital therapeutic.  
NOTE Confidence: 0.87731970125

00:35:09.240 --> 00:35:10.880 So that was on top of what happened  
NOTE Confidence: 0.87731970125

00:35:10.880 --> 00:35:11.560 in primary care.  
NOTE Confidence: 0.87731970125

00:35:11.560 --> 00:35:13.807 They had this tool that they could  
NOTE Confidence: 0.87731970125

00:35:13.807 --> 00:35:16.573 use every day in their daily lives to  
NOTE Confidence: 0.87731970125

00:35:16.573 --> 00:35:18.996 support to provide a mental health care.

NOTE Confidence: 0.87731970125

00:35:19.000 --> 00:35:21.496 And so these are some photos of some

NOTE Confidence: 0.87731970125

00:35:21.496 --> 00:35:24.860 of the tools we used for screening for

NOTE Confidence: 0.87731970125

00:35:24.860 --> 00:35:27.586 the clinical decision support that the

NOTE Confidence: 0.87731970125

00:35:27.586 --> 00:35:30.202 providers used and for the digital

NOTE Confidence: 0.87731970125

00:35:30.202 --> 00:35:32.499 therapeutic that the patients use.

NOTE Confidence: 0.87731970125

00:35:32.499 --> 00:35:35.044 This is a digital therapeutic that we

NOTE Confidence: 0.87731970125

00:35:35.044 --> 00:35:37.138 developed based on a couple of decades

NOTE Confidence: 0.87731970125

00:35:37.138 --> 00:35:38.908 of different NIH funded projects

NOTE Confidence: 0.87731970125

00:35:38.908 --> 00:35:40.594 with different populations where we

NOTE Confidence: 0.87731970125

00:35:40.594 --> 00:35:42.338 took you know sort of core sort of

NOTE Confidence: 0.87731970125

00:35:42.338 --> 00:35:43.975 science of behavior change in the

NOTE Confidence: 0.87731970125

00:35:43.975 --> 00:35:45.390 core active ingredients in helping

NOTE Confidence: 0.87731970125

00:35:45.446 --> 00:35:47.076 people initiate and maintain health

NOTE Confidence: 0.87731970125

00:35:47.076 --> 00:35:48.706 behavior changes and and embedded

NOTE Confidence: 0.87731970125

00:35:48.759 --> 00:35:50.319 it in a transdiagnostic platform.

NOTE Confidence: 0.87731970125

00:35:50.320 --> 00:35:52.280 So we could flexibly provide  
NOTE Confidence: 0.87731970125

00:35:52.280 --> 00:35:54.550 therapeutic tools to people depending  
NOTE Confidence: 0.87731970125

00:35:54.550 --> 00:35:57.287 on whatever combination of needs and  
NOTE Confidence: 0.87731970125

00:35:57.287 --> 00:35:59.675 preferences they have in mental health.  
NOTE Confidence: 0.87731970125

00:35:59.680 --> 00:36:03.280 And we have lots and lots of data from this.  
NOTE Confidence: 0.87731970125

00:36:03.280 --> 00:36:04.360 It was a big project.  
NOTE Confidence: 0.87731970125

00:36:04.360 --> 00:36:06.155 We have wonderful partners across  
NOTE Confidence: 0.87731970125

00:36:06.155 --> 00:36:08.704 the whole country work on this not  
NOTE Confidence: 0.87731970125

00:36:08.704 --> 00:36:10.429 just research partners but you  
NOTE Confidence: 0.87731970125

00:36:10.429 --> 00:36:12.800 know really Ministry of Health and  
NOTE Confidence: 0.87731970125

00:36:12.800 --> 00:36:14.900 industry payers and patient advocacy  
NOTE Confidence: 0.87731970125

00:36:14.900 --> 00:36:16.539 groups and healthcare leadership  
NOTE Confidence: 0.87731970125

00:36:16.539 --> 00:36:19.213 really working on this in order to  
NOTE Confidence: 0.87731970125

00:36:19.284 --> 00:36:21.601 be that was really critical in order  
NOTE Confidence: 0.87731970125

00:36:21.601 --> 00:36:23.470 to really scale this in the way we  
NOTE Confidence: 0.87731970125

00:36:23.470 --> 00:36:24.720 were able to across the country.

NOTE Confidence: 0.87731970125  
00:36:24.720 --> 00:36:25.725 So in one,  
NOTE Confidence: 0.87731970125  
00:36:25.725 --> 00:36:28.070 this is a snapshot of a couple  
NOTE Confidence: 0.87731970125  
00:36:28.152 --> 00:36:30.437 of years right before COVID.  
NOTE Confidence: 0.87731970125  
00:36:30.440 --> 00:36:31.938 We saw in that couple years we  
NOTE Confidence: 0.87731970125  
00:36:31.938 --> 00:36:32.760 went from screening no,  
NOTE Confidence: 0.87731970125  
00:36:32.760 --> 00:36:35.315 No 10 patients for mental health and  
NOTE Confidence: 0.87731970125  
00:36:35.315 --> 00:36:38.519 primary care to screening over 22,000 people.  
NOTE Confidence: 0.87731970125  
00:36:38.520 --> 00:36:41.216 And then of that we had 22% and  
NOTE Confidence: 0.87731970125  
00:36:41.216 --> 00:36:43.416 positive screens and then 8% diagnosis  
NOTE Confidence: 0.87731970125  
00:36:43.416 --> 00:36:45.556 of depression or unhealthy alcohol  
NOTE Confidence: 0.87731970125  
00:36:45.556 --> 00:36:47.280 use in this case.  
NOTE Confidence: 0.87731970125  
00:36:47.280 --> 00:36:49.656 And so you know this is the those  
NOTE Confidence: 0.87731970125  
00:36:49.656 --> 00:36:51.112 8% would have gone undetected.  
NOTE Confidence: 0.87731970125  
00:36:51.112 --> 00:36:52.840 You know in the traditional models,  
NOTE Confidence: 0.87731970125  
00:36:52.840 --> 00:36:54.240 these very simple slide here,  
NOTE Confidence: 0.87731970125

00:36:54.240 --> 00:36:56.016 but I just want to give you this was  
NOTE Confidence: 0.87731970125

00:36:56.016 --> 00:36:57.356 mostly an implementation science study,  
NOTE Confidence: 0.87731970125

00:36:57.360 --> 00:36:59.568 but we we were able to track patient  
NOTE Confidence: 0.87731970125

00:36:59.568 --> 00:37:01.880 outcomes for one year every single patient.  
NOTE Confidence: 0.87731970125

00:37:01.880 --> 00:37:04.656 We had a whole team tracking patients  
NOTE Confidence: 0.87731970125

00:37:04.656 --> 00:37:08.571 for a year and to to to document sort of  
NOTE Confidence: 0.87731970125

00:37:08.571 --> 00:37:10.278 their experience clinically for a year.  
NOTE Confidence: 0.87731970125

00:37:10.280 --> 00:37:12.275 So these are just some examples of  
NOTE Confidence: 0.87731970125

00:37:12.275 --> 00:37:14.601 lots of data that we have including  
NOTE Confidence: 0.87731970125

00:37:14.601 --> 00:37:16.713 you know showing a market reduction  
NOTE Confidence: 0.908389173461539

00:37:16.774 --> 00:37:19.078 in depression symptoms over that year.  
NOTE Confidence: 0.908389173461539

00:37:19.080 --> 00:37:21.488 And that was true even if you had  
NOTE Confidence: 0.908389173461539

00:37:21.488 --> 00:37:23.639 pretty severe depression at baseline.  
NOTE Confidence: 0.908389173461539

00:37:23.640 --> 00:37:24.744 We saw even those,  
NOTE Confidence: 0.908389173461539

00:37:24.744 --> 00:37:26.400 you know with high versus moderate  
NOTE Confidence: 0.908389173461539

00:37:26.460 --> 00:37:28.338 versus mild depression at baseline were



NOTE Confidence: 0.908389173461539  
00:37:28.338 --> 00:37:30.402 able to benefit from this therapeutic  
NOTE Confidence: 0.908389173461539  
00:37:30.402 --> 00:37:33.008 approach and reduce depression symptoms.  
NOTE Confidence: 0.908389173461539  
00:37:33.008 --> 00:37:36.088 Same similar pattern I should  
NOTE Confidence: 0.908389173461539  
00:37:36.088 --> 00:37:38.313 say with problematic alcohol use  
NOTE Confidence: 0.908389173461539  
00:37:38.313 --> 00:37:40.299 over that course for the sample  
NOTE Confidence: 0.908389173461539  
00:37:40.299 --> 00:37:42.237 that had high levels of drinking.  
NOTE Confidence: 0.908389173461539  
00:37:42.240 --> 00:37:45.088 And then even for those who had really  
NOTE Confidence: 0.908389173461539  
00:37:45.088 --> 00:37:47.945 high levels of alcohol use versus moderate  
NOTE Confidence: 0.908389173461539  
00:37:47.945 --> 00:37:50.880 to maybe some lower risk drinking,  
NOTE Confidence: 0.908389173461539  
00:37:50.880 --> 00:37:52.824 again we saw some value for  
NOTE Confidence: 0.908389173461539  
00:37:52.824 --> 00:37:54.640 for all of those folks.  
NOTE Confidence: 0.908389173461539  
00:37:54.640 --> 00:37:56.384 We have a lot of data on how  
NOTE Confidence: 0.908389173461539  
00:37:56.384 --> 00:37:58.100 did this impact the functioning  
NOTE Confidence: 0.908389173461539  
00:37:58.100 --> 00:37:59.720 of the healthcare system,  
NOTE Confidence: 0.908389173461539  
00:37:59.720 --> 00:38:01.355 the clinical workflow,  
NOTE Confidence: 0.908389173461539

00:38:01.355 --> 00:38:04.404 how people spend their time and  
NOTE Confidence: 0.908389173461539

00:38:04.404 --> 00:38:06.348 these are just some examples of  
NOTE Confidence: 0.908389173461539

00:38:06.348 --> 00:38:08.359 some data from those analysis.  
NOTE Confidence: 0.908389173461539

00:38:08.360 --> 00:38:11.520 So we looked at you know from  
NOTE Confidence: 0.908389173461539

00:38:11.520 --> 00:38:12.480 administrator point of view,  
NOTE Confidence: 0.908389173461539

00:38:12.480 --> 00:38:13.560 from provider point of view,  
NOTE Confidence: 0.908389173461539

00:38:13.560 --> 00:38:15.191 you know what do you think about  
NOTE Confidence: 0.908389173461539

00:38:15.191 --> 00:38:16.559 adopting this in your setting,  
NOTE Confidence: 0.908389173461539

00:38:16.560 --> 00:38:18.960 is it is this accessible to do so,  
NOTE Confidence: 0.908389173461539

00:38:18.960 --> 00:38:20.238 is it appropriate for the context,  
NOTE Confidence: 0.908389173461539

00:38:20.240 --> 00:38:21.484 is it feasible etcetera.  
NOTE Confidence: 0.908389173461539

00:38:21.484 --> 00:38:23.724 So what we found is in this two  
NOTE Confidence: 0.908389173461539

00:38:23.724 --> 00:38:25.320 year window I'm showing here even at  
NOTE Confidence: 0.908389173461539

00:38:25.376 --> 00:38:27.007 baseline and this was after that we  
NOTE Confidence: 0.908389173461539

00:38:27.007 --> 00:38:28.996 had trained a lot of the primary care  
NOTE Confidence: 0.908389173461539

00:38:28.996 --> 00:38:30.812 folks about what we're about to launch.

NOTE Confidence: 0.908389173461539  
00:38:30.812 --> 00:38:32.814 We had pretty high rates of buy  
NOTE Confidence: 0.908389173461539  
00:38:32.814 --> 00:38:35.220 in and you know on on many of  
NOTE Confidence: 0.908389173461539  
00:38:35.220 --> 00:38:36.913 these dimensions at baseline which  
NOTE Confidence: 0.908389173461539  
00:38:36.913 --> 00:38:39.163 persisted post launch and for two  
NOTE Confidence: 0.908389173461539  
00:38:39.163 --> 00:38:41.450 years post launch for for most of  
NOTE Confidence: 0.908389173461539  
00:38:41.450 --> 00:38:42.984 the data that we've got here there's  
NOTE Confidence: 0.908389173461539  
00:38:42.984 --> 00:38:44.520 some new ones to talk about here.  
NOTE Confidence: 0.908389173461539  
00:38:44.520 --> 00:38:47.005 But in the interest of time generally  
NOTE Confidence: 0.908389173461539  
00:38:47.005 --> 00:38:49.400 we we found that people felt like  
NOTE Confidence: 0.908389173461539  
00:38:49.400 --> 00:38:52.341 it was a value we as part of  
NOTE Confidence: 0.908389173461539  
00:38:52.341 --> 00:38:55.023 the data collection did a pretty  
NOTE Confidence: 0.908389173461539  
00:38:55.023 --> 00:38:56.501 detailed costing assessment.  
NOTE Confidence: 0.908389173461539  
00:38:56.501 --> 00:38:59.570 So you all may know this time driven activity  
NOTE Confidence: 0.908389173461539  
00:38:59.630 --> 00:39:01.933 based costing metric that first came out  
NOTE Confidence: 0.908389173461539  
00:39:01.933 --> 00:39:04.280 of Harvard and it gives you this very,  
NOTE Confidence: 0.908389173461539

00:39:04.280 --> 00:39:04.545 it's,  
NOTE Confidence: 0.908389173461539  
00:39:04.545 --> 00:39:06.400 it's a very lengthy process to do,  
NOTE Confidence: 0.908389173461539  
00:39:06.400 --> 00:39:08.164 but it's very valuable where you  
NOTE Confidence: 0.908389173461539  
00:39:08.164 --> 00:39:10.164 map the cost of every process  
NOTE Confidence: 0.908389173461539  
00:39:10.164 --> 00:39:11.676 in a clinical workflow.  
NOTE Confidence: 0.908389173461539  
00:39:11.680 --> 00:39:14.152 And then you can see when you introduce  
NOTE Confidence: 0.908389173461539  
00:39:14.152 --> 00:39:16.119 some innovation in a clinical workflow,  
NOTE Confidence: 0.908389173461539  
00:39:16.120 --> 00:39:17.040 how does it impact costs,  
NOTE Confidence: 0.908389173461539  
00:39:17.040 --> 00:39:18.120 what's cost difference.  
NOTE Confidence: 0.908389173461539  
00:39:18.120 --> 00:39:21.048 So the bottom line of this very long  
NOTE Confidence: 0.908389173461539  
00:39:21.048 --> 00:39:23.028 process was that after we implemented  
NOTE Confidence: 0.908389173461539  
00:39:23.028 --> 00:39:25.240 this model in primary care in the  
NOTE Confidence: 0.908389173461539  
00:39:25.301 --> 00:39:27.758 country to screen and treat mental health,  
NOTE Confidence: 0.908389173461539  
00:39:27.760 --> 00:39:32.560 the cost per patient per year was \$1.89 U.S.  
NOTE Confidence: 0.908389173461539  
00:39:32.560 --> 00:39:36.400 dollars higher than the what the prior model,  
NOTE Confidence: 0.908389173461539  
00:39:36.400 --> 00:39:38.675 sort of the baseline model before we

NOTE Confidence: 0.908389173461539

00:39:38.680 --> 00:39:40.078 before we introduce this new model.

NOTE Confidence: 0.908389173461539

00:39:40.080 --> 00:39:42.278 So there's a lot of excitement about

NOTE Confidence: 0.908389173461539

00:39:42.278 --> 00:39:44.076 that because of the value that

NOTE Confidence: 0.908389173461539

00:39:44.076 --> 00:39:46.144 they saw in doing so and and sort

NOTE Confidence: 0.908389173461539

00:39:46.144 --> 00:39:47.632 of the limited cost per patient.

NOTE Confidence: 0.908389173461539

00:39:47.640 --> 00:39:51.480 And so you know there's there's a

NOTE Confidence: 0.908389173461539

00:39:51.480 --> 00:39:53.790 lot of optimism that that that they

NOTE Confidence: 0.908389173461539

00:39:53.790 --> 00:39:56.280 could continue to grow capacity in

NOTE Confidence: 0.908389173461539

00:39:56.280 --> 00:39:58.829 the region with this type of tool

NOTE Confidence: 0.908389173461539

00:39:58.829 --> 00:40:00.600 and and also grow it to embrace

NOTE Confidence: 0.908389173461539

00:40:00.600 --> 00:40:02.250 other areas of health and including

NOTE Confidence: 0.908389173461539

00:40:02.250 --> 00:40:04.158 other types of mental health but

NOTE Confidence: 0.908389173461539

00:40:04.158 --> 00:40:04.794 other preventative

NOTE Confidence: 0.864207922666667

00:40:04.852 --> 00:40:06.762 health promoting interventions and and

NOTE Confidence: 0.864207922666667

00:40:06.762 --> 00:40:08.672 other chronic disease management tools.

NOTE Confidence: 0.864207922666667

00:40:08.680 --> 00:40:10.647 And again this was the country of  
NOTE Confidence: 0.864207922666667

00:40:10.647 --> 00:40:12.601 Colombia and now we've expanding our  
NOTE Confidence: 0.864207922666667

00:40:12.601 --> 00:40:14.638 partnership to Chile and Peru, but.  
NOTE Confidence: 0.864207922666667

00:40:14.638 --> 00:40:16.862 The nice thing is that this is an  
NOTE Confidence: 0.864207922666667

00:40:16.862 --> 00:40:18.626 exemplar of a part of the world  
NOTE Confidence: 0.864207922666667

00:40:18.626 --> 00:40:20.638 where you know we could show value,  
NOTE Confidence: 0.864207922666667

00:40:20.640 --> 00:40:22.509 maybe we could do so in rural  
NOTE Confidence: 0.864207922666667

00:40:22.509 --> 00:40:23.960 America or other countries.  
NOTE Confidence: 0.864207922666667

00:40:23.960 --> 00:40:27.328 And you know it's been exciting to see the  
NOTE Confidence: 0.864207922666667

00:40:27.328 --> 00:40:30.280 interest in in the region in scaling this up.  
NOTE Confidence: 0.864207922666667

00:40:30.280 --> 00:40:31.756 Now you know this the funding,  
NOTE Confidence: 0.864207922666667

00:40:31.760 --> 00:40:34.336 the research funding has ended and now  
NOTE Confidence: 0.864207922666667

00:40:34.336 --> 00:40:36.755 they are are offering it clinically  
NOTE Confidence: 0.864207922666667

00:40:36.755 --> 00:40:40.062 and seeking to expand it even more so.  
NOTE Confidence: 0.864207922666667

00:40:40.062 --> 00:40:43.438 So I'm happy to share papers on that,  
NOTE Confidence: 0.864207922666667

00:40:43.440 --> 00:40:45.128 but I'm going to shift gears just a

NOTE Confidence: 0.864207922666667  
00:40:45.128 --> 00:40:46.768 little bit in our remaining time and  
NOTE Confidence: 0.864207922666667  
00:40:46.768 --> 00:40:48.750 I'm watching the clock to make sure we  
NOTE Confidence: 0.864207922666667  
00:40:48.750 --> 00:40:50.280 have enough time here for discussion.  
NOTE Confidence: 0.864207922666667  
00:40:50.280 --> 00:40:53.556 But I want to talk a little bit now  
NOTE Confidence: 0.864207922666667  
00:40:53.556 --> 00:40:56.576 about digital health assessment, right.  
NOTE Confidence: 0.864207922666667  
00:40:56.576 --> 00:40:58.758 So I talked a lot about therapeutics,  
NOTE Confidence: 0.864207922666667  
00:40:58.760 --> 00:41:01.604 but we can learn a lot about people through  
NOTE Confidence: 0.864207922666667  
00:41:01.604 --> 00:41:04.277 digital data capture about their daily lives,  
NOTE Confidence: 0.864207922666667  
00:41:04.280 --> 00:41:05.628 about their, you know,  
NOTE Confidence: 0.864207922666667  
00:41:05.628 --> 00:41:07.650 really granular data even day-to-day about  
NOTE Confidence: 0.864207922666667  
00:41:07.707 --> 00:41:09.674 people's needs in in their real world,  
NOTE Confidence: 0.864207922666667  
00:41:09.680 --> 00:41:12.880 right in their daily lives and and and  
NOTE Confidence: 0.864207922666667  
00:41:12.880 --> 00:41:15.776 provide a lot of insights into people's  
NOTE Confidence: 0.864207922666667  
00:41:15.776 --> 00:41:17.120 clinical status and trajectories.  
NOTE Confidence: 0.864207922666667  
00:41:17.120 --> 00:41:18.176 But then that data,  
NOTE Confidence: 0.864207922666667

00:41:18.176 --> 00:41:19.496 particularly we can build at  
NOTE Confidence: 0.864207922666667

00:41:19.496 --> 00:41:20.679 the individual level,  
NOTE Confidence: 0.864207922666667

00:41:20.680 --> 00:41:22.320 predictive models that help us  
NOTE Confidence: 0.864207922666667

00:41:22.320 --> 00:41:23.960 understand when someone might benefit,  
NOTE Confidence: 0.864207922666667

00:41:23.960 --> 00:41:25.080 benefit from an intervention,  
NOTE Confidence: 0.864207922666667

00:41:25.080 --> 00:41:26.920 can help us then push sort of  
NOTE Confidence: 0.864207922666667

00:41:26.920 --> 00:41:28.910 digital therapeutics to people when  
NOTE Confidence: 0.864207922666667

00:41:28.910 --> 00:41:31.280 they might most benefit from them.  
NOTE Confidence: 0.864207922666667

00:41:31.280 --> 00:41:31.754 You know,  
NOTE Confidence: 0.864207922666667

00:41:31.754 --> 00:41:33.176 when someone's at risk of relapse  
NOTE Confidence: 0.864207922666667

00:41:33.176 --> 00:41:34.748 or panic attack or psychotic episode  
NOTE Confidence: 0.864207922666667

00:41:34.748 --> 00:41:35.796 or whatever it is,  
NOTE Confidence: 0.864207922666667

00:41:35.800 --> 00:41:39.152 could we in that moment give them some  
NOTE Confidence: 0.864207922666667

00:41:39.152 --> 00:41:40.960 meaningful therapeutic intervention.  
NOTE Confidence: 0.864207922666667

00:41:40.960 --> 00:41:42.948 So there's a lot of exciting work  
NOTE Confidence: 0.864207922666667

00:41:42.948 --> 00:41:43.800 in the space.



NOTE Confidence: 0.864207922666667  
00:41:43.800 --> 00:41:46.600 Most of it is in mental health,  
NOTE Confidence: 0.864207922666667  
00:41:46.600 --> 00:41:48.280 although that's evolving.  
NOTE Confidence: 0.864207922666667  
00:41:48.280 --> 00:41:52.200 But people are looking at digital biomarkers,  
NOTE Confidence: 0.864207922666667  
00:41:52.200 --> 00:41:57.240 things you can capture in vivo again about,  
NOTE Confidence: 0.864207922666667  
00:41:57.240 --> 00:41:58.520 you know,  
NOTE Confidence: 0.864207922666667  
00:41:58.520 --> 00:42:00.545 sort of in people's environment  
NOTE Confidence: 0.864207922666667  
00:42:00.545 --> 00:42:01.760 and neurodevelopmental context.  
NOTE Confidence: 0.864207922666667  
00:42:01.760 --> 00:42:04.696 That can be done through the very  
NOTE Confidence: 0.864207922666667  
00:42:04.696 --> 00:42:07.384 rich array of sensors you've got  
NOTE Confidence: 0.864207922666667  
00:42:07.384 --> 00:42:10.320 on smartphones and or wearables  
NOTE Confidence: 0.864207922666667  
00:42:10.320 --> 00:42:11.680 like smartwatches.  
NOTE Confidence: 0.864207922666667  
00:42:11.680 --> 00:42:14.140 People are even making smart jewelry  
NOTE Confidence: 0.864207922666667  
00:42:14.140 --> 00:42:17.276 and all kinds of different all kinds  
NOTE Confidence: 0.864207922666667  
00:42:17.276 --> 00:42:19.782 of different ways to capture this rich  
NOTE Confidence: 0.864207922666667  
00:42:19.782 --> 00:42:21.638 information in People's Daily lives.  
NOTE Confidence: 0.864207922666667

00:42:21.640 --> 00:42:24.970 And and some people call this  
NOTE Confidence: 0.864207922666667

00:42:24.970 --> 00:42:26.080 digital phenotyping.  
NOTE Confidence: 0.864207922666667

00:42:26.080 --> 00:42:28.306 And that's just really this very  
NOTE Confidence: 0.864207922666667

00:42:28.306 --> 00:42:29.790 detailed granular quantification of  
NOTE Confidence: 0.864207922666667

00:42:29.846 --> 00:42:32.060 these individual level data in the  
NOTE Confidence: 0.864207922666667

00:42:32.060 --> 00:42:34.280 real world collected through digital devices.  
NOTE Confidence: 0.864207922666667

00:42:34.280 --> 00:42:36.434 And it could be either passively  
NOTE Confidence: 0.864207922666667

00:42:36.434 --> 00:42:38.246 collected through sensing like I  
NOTE Confidence: 0.864207922666667

00:42:38.246 --> 00:42:40.460 mentioned or you can prompt people  
NOTE Confidence: 0.864207922666667

00:42:40.460 --> 00:42:42.360 to answer brief queries about,  
NOTE Confidence: 0.864207922666667

00:42:42.360 --> 00:42:43.878 you know, their pain, their craving,  
NOTE Confidence: 0.864207922666667

00:42:43.880 --> 00:42:45.998 their their mood state, their sleep,  
NOTE Confidence: 0.864207922666667

00:42:46.000 --> 00:42:48.688 whatever the question is.  
NOTE Confidence: 0.864207922666667

00:42:48.688 --> 00:42:51.358 And and you can do that through  
NOTE Confidence: 0.864207922666667

00:42:51.360 --> 00:42:54.010 on digital platforms using these  
NOTE Confidence: 0.864207922666667

00:42:54.010 --> 00:42:55.600 ecological momentary assessments.

NOTE Confidence: 0.864207922666667  
00:42:55.600 --> 00:42:57.704 And so the idea is that maybe we  
NOTE Confidence: 0.864207922666667  
00:42:57.704 --> 00:42:59.611 can understand for a given person  
NOTE Confidence: 0.864207922666667  
00:42:59.611 --> 00:43:01.261 what confluence of factors might  
NOTE Confidence: 0.864207922666667  
00:43:01.261 --> 00:43:03.280 predict clinically meaningful events.  
NOTE Confidence: 0.864207922666667  
00:43:03.280 --> 00:43:06.115 And then this sort of some people  
NOTE Confidence: 0.864207922666667  
00:43:06.115 --> 00:43:08.364 call it just in time adaptive  
NOTE Confidence: 0.864207922666667  
00:43:08.364 --> 00:43:09.984 interventions or just in time  
NOTE Confidence: 0.864207922666667  
00:43:09.984 --> 00:43:11.280 delivery of a therapeutic.  
NOTE Confidence: 0.917867341  
00:43:11.280 --> 00:43:12.220 There's a lot of exciting  
NOTE Confidence: 0.917867341  
00:43:12.220 --> 00:43:13.160 work happening in this space.  
NOTE Confidence: 0.917867341  
00:43:13.160 --> 00:43:14.642 I'm going to give you a little  
NOTE Confidence: 0.917867341  
00:43:14.642 --> 00:43:16.334 snapshot of first of all what's  
NOTE Confidence: 0.917867341  
00:43:16.334 --> 00:43:17.767 happening in substance use disorder  
NOTE Confidence: 0.917867341  
00:43:17.767 --> 00:43:19.375 space and then more broadly mental  
NOTE Confidence: 0.917867341  
00:43:19.375 --> 00:43:21.120 health and then tell you a bit about  
NOTE Confidence: 0.917867341

00:43:21.120 --> 00:43:22.317 some work we're doing in this space.  
NOTE Confidence: 0.917867341

00:43:22.320 --> 00:43:25.239 So some of the really early work  
NOTE Confidence: 0.917867341

00:43:25.239 --> 00:43:27.533 in looking at these digital  
NOTE Confidence: 0.917867341

00:43:27.533 --> 00:43:29.998 biomarkers in substance use were  
NOTE Confidence: 0.917867341

00:43:30.000 --> 00:43:31.920 heavily with smoking populations.  
NOTE Confidence: 0.917867341

00:43:31.920 --> 00:43:33.080 So, so Shiffman,  
NOTE Confidence: 0.917867341

00:43:33.080 --> 00:43:35.800 you may you may know his work well  
NOTE Confidence: 0.917867341

00:43:35.800 --> 00:43:38.496 we did some early work in this where  
NOTE Confidence: 0.917867341

00:43:38.496 --> 00:43:40.416 where you're tracking people's mood  
NOTE Confidence: 0.917867341

00:43:40.416 --> 00:43:42.980 in a pretty detailed way and they  
NOTE Confidence: 0.917867341

00:43:42.980 --> 00:43:44.520 had a whole line of research here.  
NOTE Confidence: 0.917867341

00:43:44.520 --> 00:43:46.374 It's just one example showing that  
NOTE Confidence: 0.917867341

00:43:46.374 --> 00:43:48.253 lapses to smoking among smokers trying  
NOTE Confidence: 0.917867341

00:43:48.253 --> 00:43:50.076 to quit were associated with increases  
NOTE Confidence: 0.917867341

00:43:50.076 --> 00:43:52.254 in negative mood for many days and  
NOTE Confidence: 0.917867341

00:43:52.254 --> 00:43:54.116 not just hours before a smoking lapse.

NOTE Confidence: 0.917867341

00:43:54.120 --> 00:43:55.680 So it was this sort of,

NOTE Confidence: 0.917867341

00:43:55.680 --> 00:43:56.760 you know, sort of this,

NOTE Confidence: 0.917867341

00:43:56.760 --> 00:43:58.860 a more prolonged negative mood that

NOTE Confidence: 0.917867341

00:43:58.860 --> 00:44:01.039 seemed to be associated with lapses.

NOTE Confidence: 0.917867341

00:44:01.040 --> 00:44:02.800 Kenzie Preston who I

NOTE Confidence: 0.917867341

00:44:02.800 --> 00:44:04.120 understand recently retired,

NOTE Confidence: 0.917867341

00:44:04.120 --> 00:44:06.800 but there's still a lot of fantastic work

NOTE Confidence: 0.917867341

00:44:06.800 --> 00:44:10.070 coming out of her former lab at the Nida

NOTE Confidence: 0.917867341

00:44:10.070 --> 00:44:12.279 Intramural Research Center in this area.

NOTE Confidence: 0.917867341

00:44:12.279 --> 00:44:14.890 So one of those studies showed that

NOTE Confidence: 0.917867341

00:44:14.974 --> 00:44:17.719 craving predicted imminent drug use,

NOTE Confidence: 0.917867341

00:44:17.720 --> 00:44:19.928 but self reported stress was much

NOTE Confidence: 0.917867341

00:44:19.928 --> 00:44:21.400 less predictive than craving.

NOTE Confidence: 0.917867341

00:44:21.400 --> 00:44:22.159 So, you know,

NOTE Confidence: 0.917867341

00:44:22.159 --> 00:44:23.677 they have this whole literature around,

NOTE Confidence: 0.917867341

00:44:23.680 --> 00:44:24.320 you know,  
NOTE Confidence: 0.917867341

00:44:24.320 --> 00:44:26.560 do these types of data help us  
NOTE Confidence: 0.917867341

00:44:26.560 --> 00:44:28.198 understand more nuance between,  
NOTE Confidence: 0.917867341

00:44:28.200 --> 00:44:29.052 you know,  
NOTE Confidence: 0.917867341

00:44:29.052 --> 00:44:31.608 between different triggers for drug use  
NOTE Confidence: 0.917867341

00:44:31.608 --> 00:44:34.077 including things like stress and craving.  
NOTE Confidence: 0.917867341

00:44:34.080 --> 00:44:37.038 And they also the same lab,  
NOTE Confidence: 0.917867341

00:44:37.040 --> 00:44:40.000 David Epstein's part of that group show that,  
NOTE Confidence: 0.917867341

00:44:40.000 --> 00:44:40.600 you know,  
NOTE Confidence: 0.917867341

00:44:40.600 --> 00:44:41.200 drug triggers,  
NOTE Confidence: 0.917867341

00:44:41.200 --> 00:44:43.489 things that for a given person like  
NOTE Confidence: 0.917867341

00:44:43.489 --> 00:44:45.800 exposure to drug cues or mood changes  
NOTE Confidence: 0.917867341

00:44:45.800 --> 00:44:47.914 increase for hours before cocaine use events.  
NOTE Confidence: 0.917867341

00:44:47.920 --> 00:44:49.414 But we we saw very different  
NOTE Confidence: 0.917867341

00:44:49.414 --> 00:44:50.800 pattern with heroin use events.  
NOTE Confidence: 0.917867341

00:44:50.800 --> 00:44:51.472 So they're also,

NOTE Confidence: 0.917867341  
00:44:51.472 --> 00:44:51.920 you know,  
NOTE Confidence: 0.917867341  
00:44:51.920 --> 00:44:53.615 building out a literature suggesting  
NOTE Confidence: 0.917867341  
00:44:53.615 --> 00:44:55.969 that this type of data might give  
NOTE Confidence: 0.917867341  
00:44:55.969 --> 00:44:57.573 us new insights into different  
NOTE Confidence: 0.917867341  
00:44:57.573 --> 00:45:00.051 sort of risk profiles or different  
NOTE Confidence: 0.917867341  
00:45:00.051 --> 00:45:02.173 sort of triggers for different  
NOTE Confidence: 0.917867341  
00:45:02.173 --> 00:45:04.824 types of substance use in the  
NOTE Confidence: 0.917867341  
00:45:04.824 --> 00:45:06.360 personalized intervention space.  
NOTE Confidence: 0.917867341  
00:45:06.360 --> 00:45:08.560 Here's some early studies, again,  
NOTE Confidence: 0.917867341  
00:45:08.560 --> 00:45:10.260 including again with smoking.  
NOTE Confidence: 0.917867341  
00:45:10.260 --> 00:45:13.240 So if you track people smoking risk,  
NOTE Confidence: 0.917867341  
00:45:13.240 --> 00:45:15.208 this is what was done in  
NOTE Confidence: 0.917867341  
00:45:15.208 --> 00:45:16.192 this particular study.  
NOTE Confidence: 0.917867341  
00:45:16.200 --> 00:45:18.396 You know their risk for smoking.  
NOTE Confidence: 0.917867341  
00:45:18.400 --> 00:45:20.388 And then and then you trigger a  
NOTE Confidence: 0.917867341

00:45:20.388 --> 00:45:21.680 tailored message responsive to that,  
NOTE Confidence: 0.917867341

00:45:21.680 --> 00:45:22.259 like, you know,  
NOTE Confidence: 0.917867341

00:45:22.259 --> 00:45:23.840 when someone seems like they are at risk,  
NOTE Confidence: 0.917867341

00:45:23.840 --> 00:45:25.880 advise them to a piece of nicotine gum.  
NOTE Confidence: 0.917867341

00:45:25.880 --> 00:45:27.896 Those types of tailored messages were  
NOTE Confidence: 0.917867341

00:45:27.896 --> 00:45:30.118 more engaging and effective than usual care.  
NOTE Confidence: 0.917867341

00:45:30.120 --> 00:45:31.755 Similar study where you give  
NOTE Confidence: 0.917867341

00:45:31.755 --> 00:45:33.063 adaptively tailored advice for  
NOTE Confidence: 0.917867341

00:45:33.063 --> 00:45:34.199 managing withdrawal symptoms  
NOTE Confidence: 0.917867341

00:45:34.199 --> 00:45:36.079 when people are going through  
NOTE Confidence: 0.917867341

00:45:36.079 --> 00:45:37.565 nicotine withdrawal symptoms and  
NOTE Confidence: 0.917867341

00:45:37.565 --> 00:45:38.797 and medication side effects.  
NOTE Confidence: 0.917867341

00:45:38.800 --> 00:45:40.762 We found that that very responsive  
NOTE Confidence: 0.917867341

00:45:40.762 --> 00:45:43.143 in the moment advice was used more  
NOTE Confidence: 0.917867341

00:45:43.143 --> 00:45:45.171 often and was more acceptable among  
NOTE Confidence: 0.917867341

00:45:45.171 --> 00:45:47.480 smokers seeking to quit than usual care.



NOTE Confidence: 0.917867341

00:45:47.480 --> 00:45:50.342 And then we had a grant from the NIH

NOTE Confidence: 0.917867341

00:45:50.342 --> 00:45:52.839 Science of Behavior Change Initiative

NOTE Confidence: 0.917867341

00:45:52.840 --> 00:45:55.108 out of the Office of the Director's

NOTE Confidence: 0.917867341

00:45:55.108 --> 00:45:57.200 Office and it was on self regulation.

NOTE Confidence: 0.917867341

00:45:57.200 --> 00:45:59.960 And one piece of that included

NOTE Confidence: 0.948296443076923

00:45:59.960 --> 00:46:02.160 developing A momentary self regulation

NOTE Confidence: 0.948296443076923

00:46:02.160 --> 00:46:05.678 scale where we can in the moment assess

NOTE Confidence: 0.948296443076923

00:46:05.680 --> 00:46:07.880 different aspects of self regulatory

NOTE Confidence: 0.948296443076923

00:46:07.880 --> 00:46:09.640 capacity like emotion regulation.

NOTE Confidence: 0.948296443076923

00:46:09.640 --> 00:46:13.678 And we found in this study that

NOTE Confidence: 0.948296443076923

00:46:13.678 --> 00:46:15.090 digital interventions can impact

NOTE Confidence: 0.948296443076923

00:46:15.153 --> 00:46:16.948 momentary self regulation that then

NOTE Confidence: 0.948296443076923

00:46:16.948 --> 00:46:19.275 can in turn impact health behavior

NOTE Confidence: 0.948296443076923

00:46:19.275 --> 00:46:21.159 across various populations like

NOTE Confidence: 0.948296443076923

00:46:21.160 --> 00:46:22.720 people with binge eating disorder,

NOTE Confidence: 0.948296443076923

00:46:22.720 --> 00:46:24.856 like heavy smokers.  
NOTE Confidence: 0.948296443076923

00:46:24.856 --> 00:46:27.460 So very these are just again a  
NOTE Confidence: 0.948296443076923

00:46:27.460 --> 00:46:28.640 snapshot of of what's evolving.  
NOTE Confidence: 0.948296443076923

00:46:28.640 --> 00:46:29.756 There's a lot of exciting work  
NOTE Confidence: 0.948296443076923

00:46:29.756 --> 00:46:30.680 happening in this space now,  
NOTE Confidence: 0.948296443076923

00:46:30.680 --> 00:46:33.020 including I I I know some folks at Yale  
NOTE Confidence: 0.948296443076923

00:46:33.020 --> 00:46:35.519 are doing some great work in this space.  
NOTE Confidence: 0.948296443076923

00:46:35.520 --> 00:46:38.516 We recently finished a study funded  
NOTE Confidence: 0.948296443076923

00:46:38.516 --> 00:46:41.848 by Nida run on NIDA's clinical trials  
NOTE Confidence: 0.948296443076923

00:46:41.848 --> 00:46:44.004 network platform that we're part of.  
NOTE Confidence: 0.948296443076923

00:46:44.004 --> 00:46:45.509 It was in partnership with  
NOTE Confidence: 0.948296443076923

00:46:45.509 --> 00:46:47.262 Kaiser Permanente and IBM.  
NOTE Confidence: 0.948296443076923

00:46:47.262 --> 00:46:49.728 And this study was really trying  
NOTE Confidence: 0.948296443076923

00:46:49.728 --> 00:46:51.981 to understand the utility of  
NOTE Confidence: 0.948296443076923

00:46:51.981 --> 00:46:54.675 digital data capture with people in  
NOTE Confidence: 0.948296443076923

00:46:54.675 --> 00:46:56.999 treatment for opioid use disorder.

NOTE Confidence: 0.948296443076923  
00:46:57.000 --> 00:46:59.262 So we asked outpatients in buprenorphine  
NOTE Confidence: 0.948296443076923  
00:46:59.262 --> 00:47:01.125 treatment for opioid use disorder  
NOTE Confidence: 0.948296443076923  
00:47:01.125 --> 00:47:03.155 if they want to join the study.  
NOTE Confidence: 0.948296443076923  
00:47:03.160 --> 00:47:05.200 And if they did,  
NOTE Confidence: 0.948296443076923  
00:47:05.200 --> 00:47:08.520 we asked them to not only answer questions,  
NOTE Confidence: 0.948296443076923  
00:47:08.520 --> 00:47:09.996 we asked them through these prompts,  
NOTE Confidence: 0.948296443076923  
00:47:10.000 --> 00:47:12.436 these Emas on on a mobile device.  
NOTE Confidence: 0.948296443076923  
00:47:12.440 --> 00:47:15.160 We asked them if we could passively get  
NOTE Confidence: 0.948296443076923  
00:47:15.160 --> 00:47:17.080 data from smartwatches and smartphones.  
NOTE Confidence: 0.948296443076923  
00:47:17.080 --> 00:47:18.799 And we asked them if you have social media,  
NOTE Confidence: 0.948296443076923  
00:47:18.800 --> 00:47:21.680 can we can we take your social media  
NOTE Confidence: 0.948296443076923  
00:47:21.680 --> 00:47:24.160 data and can we look at that data?  
NOTE Confidence: 0.948296443076923  
00:47:24.160 --> 00:47:26.800 And the idea here was to understand,  
NOTE Confidence: 0.948296443076923  
00:47:26.800 --> 00:47:29.778 are some of these data meaningful  
NOTE Confidence: 0.948296443076923  
00:47:29.778 --> 00:47:32.704 in People's Daily lives to help us  
NOTE Confidence: 0.948296443076923

00:47:32.704 --> 00:47:35.110 understand when people might relapse or  
NOTE Confidence: 0.948296443076923

00:47:35.110 --> 00:47:37.120 maybe not take their medication today,  
NOTE Confidence: 0.948296443076923

00:47:37.120 --> 00:47:37.912 for example, right.  
NOTE Confidence: 0.948296443076923

00:47:37.912 --> 00:47:40.163 We know a lot about you know we  
NOTE Confidence: 0.948296443076923

00:47:40.163 --> 00:47:41.868 know medication treatment is a  
NOTE Confidence: 0.948296443076923

00:47:41.868 --> 00:47:43.625 very effective and literally life  
NOTE Confidence: 0.948296443076923

00:47:43.625 --> 00:47:45.275 saving for opioid use disorder.  
NOTE Confidence: 0.948296443076923

00:47:45.280 --> 00:47:47.506 And we also know that we  
NOTE Confidence: 0.948296443076923

00:47:47.506 --> 00:47:49.038 have you know relapses,  
NOTE Confidence: 0.948296443076923

00:47:49.038 --> 00:47:50.196 we have dropout,  
NOTE Confidence: 0.948296443076923

00:47:50.200 --> 00:47:52.228 we have non medication adherence and  
NOTE Confidence: 0.948296443076923

00:47:52.228 --> 00:47:54.534 we have clinical insights into some of  
NOTE Confidence: 0.948296443076923

00:47:54.534 --> 00:47:56.316 the factors that contribute to that.  
NOTE Confidence: 0.948296443076923

00:47:56.320 --> 00:47:58.104 But the idea here is if we get  
NOTE Confidence: 0.948296443076923

00:47:58.104 --> 00:47:59.344 this day-to-day data that's  
NOTE Confidence: 0.948296443076923

00:47:59.344 --> 00:48:01.034 outside of a clinical setting,

NOTE Confidence: 0.948296443076923  
00:48:01.040 --> 00:48:02.958 could we get any new insights into  
NOTE Confidence: 0.948296443076923  
00:48:02.958 --> 00:48:04.797 what when someone might be at risk  
NOTE Confidence: 0.948296443076923  
00:48:04.797 --> 00:48:06.820 of these things and where are there,  
NOTE Confidence: 0.948296443076923  
00:48:06.820 --> 00:48:08.120 where is there redundancy  
NOTE Confidence: 0.948296443076923  
00:48:08.120 --> 00:48:09.886 in the data capture, right.  
NOTE Confidence: 0.948296443076923  
00:48:09.886 --> 00:48:11.854 So maybe you know it's just a snapshot  
NOTE Confidence: 0.948296443076923  
00:48:11.854 --> 00:48:13.847 of these data that are really the the  
NOTE Confidence: 0.948296443076923  
00:48:13.847 --> 00:48:16.274 main sort of data to extract that are  
NOTE Confidence: 0.948296443076923  
00:48:16.274 --> 00:48:17.919 meaningful for predicting these things.  
NOTE Confidence: 0.948296443076923  
00:48:17.920 --> 00:48:20.160 That's the big picture of the the  
NOTE Confidence: 0.948296443076923  
00:48:20.160 --> 00:48:23.480 study we we in the passing sense,  
NOTE Confidence: 0.948296443076923  
00:48:23.480 --> 00:48:24.208 passive sensing.  
NOTE Confidence: 0.948296443076923  
00:48:24.208 --> 00:48:27.120 You get all kinds of rich information from  
NOTE Confidence: 0.948296443076923  
00:48:27.120 --> 00:48:28.877 literally not asking people to do anything.  
NOTE Confidence: 0.948296443076923  
00:48:28.880 --> 00:48:30.480 It's just passively collected  
NOTE Confidence: 0.948296443076923

00:48:30.480 --> 00:48:32.080 in an unobtrusive way.  
NOTE Confidence: 0.948296443076923

00:48:32.080 --> 00:48:34.103 You can get features that give you  
NOTE Confidence: 0.948296443076923

00:48:34.103 --> 00:48:35.839 insights into people's activity levels,  
NOTE Confidence: 0.948296443076923

00:48:35.840 --> 00:48:37.597 into their sleep and quality of sleep,  
NOTE Confidence: 0.948296443076923

00:48:37.600 --> 00:48:38.920 into their sociability,  
NOTE Confidence: 0.948296443076923

00:48:38.920 --> 00:48:40.680 into their light exposure.  
NOTE Confidence: 0.948296443076923

00:48:40.680 --> 00:48:43.844 Lots of different kinds of data you can get.  
NOTE Confidence: 0.948296443076923

00:48:43.844 --> 00:48:45.784 And then we asked them these brief queries  
NOTE Confidence: 0.948296443076923

00:48:45.784 --> 00:48:47.760 as you see on the right here about,  
NOTE Confidence: 0.948296443076923

00:48:47.760 --> 00:48:49.400 you know, their sleep stress,  
NOTE Confidence: 0.948296443076923

00:48:49.400 --> 00:48:51.536 their pain, craving,  
NOTE Confidence: 0.948296443076923

00:48:51.536 --> 00:48:52.960 withdrawal symptoms,  
NOTE Confidence: 0.948296443076923

00:48:52.960 --> 00:48:53.840 etcetera.  
NOTE Confidence: 0.948296443076923

00:48:53.840 --> 00:48:56.692 And so these are really brief  
NOTE Confidence: 0.948296443076923

00:48:56.692 --> 00:48:58.330 questions we prompt them to do  
NOTE Confidence: 0.773830045

00:48:58.381 --> 00:48:59.357 on a mobile device.

NOTE Confidence: 0.773830045  
00:48:59.360 --> 00:49:01.280 And then if they had social  
NOTE Confidence: 0.773830045  
00:49:01.280 --> 00:49:02.560 media data from Twitter,  
NOTE Confidence: 0.773830045  
00:49:02.560 --> 00:49:03.358 Facebook or Instagram,  
NOTE Confidence: 0.773830045  
00:49:03.358 --> 00:49:04.954 we could look at those data.  
NOTE Confidence: 0.773830045  
00:49:04.960 --> 00:49:06.836 And so we could look at postings,  
NOTE Confidence: 0.773830045  
00:49:06.840 --> 00:49:08.880 we could look at sentiment analysis,  
NOTE Confidence: 0.773830045  
00:49:08.880 --> 00:49:10.350 we could look at topology of  
NOTE Confidence: 0.773830045  
00:49:10.350 --> 00:49:11.720 social networks, the ideas.  
NOTE Confidence: 0.773830045  
00:49:11.720 --> 00:49:14.360 Are any of these data really  
NOTE Confidence: 0.773830045  
00:49:14.360 --> 00:49:16.707 strong predictors of things like  
NOTE Confidence: 0.773830045  
00:49:16.707 --> 00:49:18.559 when someone might relapse?  
NOTE Confidence: 0.773830045  
00:49:18.560 --> 00:49:21.948 So this first day was heavily A  
NOTE Confidence: 0.773830045  
00:49:21.948 --> 00:49:24.192 feasibility study and we found  
NOTE Confidence: 0.773830045  
00:49:24.192 --> 00:49:25.776 that participants in outpatient  
NOTE Confidence: 0.773830045  
00:49:25.776 --> 00:49:27.783 treatment for opioid use disorder  
NOTE Confidence: 0.773830045

00:49:27.783 --> 00:49:29.959 carried the phone on 94% of days.  
NOTE Confidence: 0.773830045

00:49:29.959 --> 00:49:31.477 We've been very encouraged by that,  
NOTE Confidence: 0.773830045

00:49:31.480 --> 00:49:33.958 wore the watch 74% of days.  
NOTE Confidence: 0.773830045

00:49:33.960 --> 00:49:36.840 We had a average response rate to our  
NOTE Confidence: 0.773830045

00:49:36.840 --> 00:49:38.955 questions of 70% and we were actually  
NOTE Confidence: 0.773830045

00:49:38.955 --> 00:49:40.600 quite surprised about this last one.  
NOTE Confidence: 0.773830045

00:49:40.600 --> 00:49:42.725 We thought it'd be lower but 88% agreed  
NOTE Confidence: 0.773830045

00:49:42.725 --> 00:49:45.828 to share their social media data and  
NOTE Confidence: 0.773830045

00:49:45.828 --> 00:49:47.332 then we have a lot of data including  
NOTE Confidence: 0.773830045

00:49:47.332 --> 00:49:48.955 a lot of evolving data from this.  
NOTE Confidence: 0.773830045

00:49:48.960 --> 00:49:50.418 But I'm just going to give  
NOTE Confidence: 0.773830045

00:49:50.418 --> 00:49:51.996 you a little flavor of some  
NOTE Confidence: 0.773830045

00:49:51.996 --> 00:49:53.356 of the things we're finding.  
NOTE Confidence: 0.773830045

00:49:53.360 --> 00:49:55.999 This slide is from our EMA data.  
NOTE Confidence: 0.773830045

00:49:56.000 --> 00:49:58.086 So this is again the these questions  
NOTE Confidence: 0.773830045

00:49:58.086 --> 00:50:00.560 that we asked people to answer and



NOTE Confidence: 0.931579635714286  
00:50:02.880 --> 00:50:06.372 11 predictor that seemed among the  
NOTE Confidence: 0.931579635714286  
00:50:06.372 --> 00:50:08.284 strongest in predicting next day  
NOTE Confidence: 0.931579635714286  
00:50:08.284 --> 00:50:10.270 opioid use is this momentary self  
NOTE Confidence: 0.931579635714286  
00:50:10.329 --> 00:50:11.924 regulation metric that I mentioned  
NOTE Confidence: 0.931579635714286  
00:50:11.924 --> 00:50:14.576 to you that we this the scale that  
NOTE Confidence: 0.931579635714286  
00:50:14.576 --> 00:50:16.236 we developed and validated and  
NOTE Confidence: 0.931579635714286  
00:50:16.240 --> 00:50:20.010 particularly when you track momentary  
NOTE Confidence: 0.931579635714286  
00:50:20.010 --> 00:50:23.765 risk taking about 24 hours prior seems  
NOTE Confidence: 0.931579635714286  
00:50:23.765 --> 00:50:27.868 to be a pretty strong predictor of  
NOTE Confidence: 0.931579635714286  
00:50:27.868 --> 00:50:31.000 next day non prescribed opioid use.  
NOTE Confidence: 0.931579635714286  
00:50:31.000 --> 00:50:32.960 That's just one example.  
NOTE Confidence: 0.931579635714286  
00:50:32.960 --> 00:50:35.066 Here's another from some of our  
NOTE Confidence: 0.931579635714286  
00:50:35.066 --> 00:50:36.570 passive sensing data and this is  
NOTE Confidence: 0.931579635714286  
00:50:36.570 --> 00:50:37.320 just looking at two channels.  
NOTE Confidence: 0.931579635714286  
00:50:37.320 --> 00:50:39.192 This is looking at heart rate  
NOTE Confidence: 0.931579635714286

00:50:39.192 --> 00:50:40.800 data from wearables and smart  
NOTE Confidence: 0.931579635714286

00:50:40.800 --> 00:50:41.904 smartphone conversation detection.  
NOTE Confidence: 0.931579635714286

00:50:41.904 --> 00:50:44.112 So not what people are saying,  
NOTE Confidence: 0.931579635714286

00:50:44.120 --> 00:50:45.394 not the content of what they're saying,  
NOTE Confidence: 0.931579635714286

00:50:45.400 --> 00:50:49.296 but detecting instances of communication.  
NOTE Confidence: 0.931579635714286

00:50:49.296 --> 00:50:53.100 And again we're seeing some promising  
NOTE Confidence: 0.931579635714286

00:50:53.187 --> 00:50:56.277 utility of these passive data channels  
NOTE Confidence: 0.931579635714286

00:50:56.277 --> 00:50:59.360 in predicting next day opioid use.  
NOTE Confidence: 0.931579635714286

00:50:59.360 --> 00:51:01.733 We also have seen similar pattern in  
NOTE Confidence: 0.931579635714286

00:51:01.733 --> 00:51:03.919 predicting stress and predicting craving.  
NOTE Confidence: 0.931579635714286

00:51:03.920 --> 00:51:05.068 Lots of ongoing analysis,  
NOTE Confidence: 0.931579635714286

00:51:05.068 --> 00:51:07.599 but this is just to give you a flavor.  
NOTE Confidence: 0.931579635714286

00:51:07.600 --> 00:51:08.758 So why did Nida fund this?  
NOTE Confidence: 0.931579635714286

00:51:08.760 --> 00:51:11.560 So Nida was interested in thinking about  
NOTE Confidence: 0.931579635714286

00:51:11.560 --> 00:51:13.037 you know, you know in clinical trials,  
NOTE Confidence: 0.931579635714286

00:51:13.040 --> 00:51:14.912 let's say we have these great

NOTE Confidence: 0.931579635714286  
00:51:14.912 --> 00:51:15.848 clinically validated assessments  
NOTE Confidence: 0.931579635714286  
00:51:15.848 --> 00:51:17.682 we do in an episodic way during  
NOTE Confidence: 0.931579635714286  
00:51:17.682 --> 00:51:19.000 the course of clinical trial.  
NOTE Confidence: 0.931579635714286  
00:51:19.000 --> 00:51:20.603 Maybe we're looking at you know the  
NOTE Confidence: 0.931579635714286  
00:51:20.603 --> 00:51:22.027 effects of a novel pharmacotherapy  
NOTE Confidence: 0.931579635714286  
00:51:22.027 --> 00:51:23.395 or or something else.  
NOTE Confidence: 0.931579635714286  
00:51:23.400 --> 00:51:25.073 Could this type of data be meaningful  
NOTE Confidence: 0.931579635714286  
00:51:25.073 --> 00:51:27.173 to add an outcomes measurement and what  
NOTE Confidence: 0.931579635714286  
00:51:27.173 --> 00:51:29.541 type of data from digitally derived data  
NOTE Confidence: 0.931579635714286  
00:51:29.541 --> 00:51:31.497 capture could be meaningful as part  
NOTE Confidence: 0.931579635714286  
00:51:31.497 --> 00:51:33.308 of outcomes measurement in clinical trials.  
NOTE Confidence: 0.931579635714286  
00:51:33.308 --> 00:51:35.240 So that's a big part of it,  
NOTE Confidence: 0.931579635714286  
00:51:35.240 --> 00:51:36.652 that's a big question.  
NOTE Confidence: 0.931579635714286  
00:51:36.652 --> 00:51:37.890 But then, you know,  
NOTE Confidence: 0.931579635714286  
00:51:37.890 --> 00:51:39.480 surely there's a lot of excitement  
NOTE Confidence: 0.931579635714286

00:51:39.480 --> 00:51:41.344 around if indeed we can get these  
NOTE Confidence: 0.931579635714286

00:51:41.344 --> 00:51:42.788 models good enough to understand,  
NOTE Confidence: 0.931579635714286

00:51:42.788 --> 00:51:44.458 you know, when someone might  
NOTE Confidence: 0.931579635714286

00:51:44.458 --> 00:51:46.637 be at risk and we can really,  
NOTE Confidence: 0.931579635714286

00:51:46.640 --> 00:51:47.444 you know,  
NOTE Confidence: 0.931579635714286

00:51:47.444 --> 00:51:48.248 trial the,  
NOTE Confidence: 0.931579635714286

00:51:48.248 --> 00:51:51.648 the utility of these very responsive in the  
NOTE Confidence: 0.931579635714286

00:51:51.648 --> 00:51:54.396 moment interventions to help prevent relapse,  
NOTE Confidence: 0.931579635714286

00:51:54.400 --> 00:51:55.136 for example.  
NOTE Confidence: 0.931579635714286

00:51:55.136 --> 00:51:58.080 So I think this is an exciting space,  
NOTE Confidence: 0.931579635714286

00:51:58.080 --> 00:51:58.544 you know,  
NOTE Confidence: 0.931579635714286

00:51:58.544 --> 00:51:59.704 from the discovery science space  
NOTE Confidence: 0.931579635714286

00:51:59.704 --> 00:52:01.135 and looking at digital biomarkers  
NOTE Confidence: 0.931579635714286

00:52:01.135 --> 00:52:02.519 to really translational science,  
NOTE Confidence: 0.931579635714286

00:52:02.520 --> 00:52:05.010 I think in terms of informing  
NOTE Confidence: 0.931579635714286

00:52:05.010 --> 00:52:05.840 intervention models,

NOTE Confidence: 0.931579635714286  
00:52:05.840 --> 00:52:07.400 the the literature is compelling,  
NOTE Confidence: 0.931579635714286  
00:52:07.400 --> 00:52:08.758 but there's a lot of proof of  
NOTE Confidence: 0.931579635714286  
00:52:08.758 --> 00:52:10.003 concept out there for folks who  
NOTE Confidence: 0.931579635714286  
00:52:10.003 --> 00:52:11.033 are working in this space.  
NOTE Confidence: 0.931579635714286  
00:52:11.040 --> 00:52:11.880 But it's growing.  
NOTE Confidence: 0.931579635714286  
00:52:11.880 --> 00:52:12.720 But I think,  
NOTE Confidence: 0.931579635714286  
00:52:12.720 --> 00:52:13.324 you know,  
NOTE Confidence: 0.931579635714286  
00:52:13.324 --> 00:52:15.136 there's a lot of opportunity for  
NOTE Confidence: 0.931579635714286  
00:52:15.136 --> 00:52:17.033 more rigor in this work right now  
NOTE Confidence: 0.931579635714286  
00:52:17.033 --> 00:52:18.204 and more validation of measures.  
NOTE Confidence: 0.931579635714286  
00:52:18.204 --> 00:52:19.590 Lots of people look at different  
NOTE Confidence: 0.931579635714286  
00:52:19.634 --> 00:52:20.814 features that you extract from  
NOTE Confidence: 0.931579635714286  
00:52:20.814 --> 00:52:21.758 sensing and other things.  
NOTE Confidence: 0.931579635714286  
00:52:21.760 --> 00:52:23.560 We don't have a lot of replicability yet,  
NOTE Confidence: 0.931579635714286  
00:52:23.560 --> 00:52:24.865 reproducibility of results  
NOTE Confidence: 0.931579635714286

00:52:24.865 --> 00:52:27.475 or control studies as of yet.  
NOTE Confidence: 0.931579635714286

00:52:27.480 --> 00:52:29.478 We have some and it's growing  
NOTE Confidence: 0.931579635714286

00:52:29.478 --> 00:52:30.477 particularly mental health.  
NOTE Confidence: 0.931579635714286

00:52:30.480 --> 00:52:33.259 But it's a it's an interesting and  
NOTE Confidence: 0.931579635714286

00:52:33.259 --> 00:52:35.480 exciting space and I think that  
NOTE Confidence: 0.931579635714286

00:52:35.480 --> 00:52:37.256 it's promising for mental health,  
NOTE Confidence: 0.931579635714286

00:52:37.256 --> 00:52:39.076 but also really just thinking  
NOTE Confidence: 0.931579635714286

00:52:39.076 --> 00:52:41.206 about behavior broadly and it's in  
NOTE Confidence: 0.931579635714286

00:52:41.206 --> 00:52:42.911 in sort of transcending disease  
NOTE Confidence: 0.931579635714286

00:52:42.973 --> 00:52:44.763 specific types of behaviors to  
NOTE Confidence: 0.931579635714286

00:52:44.763 --> 00:52:46.553 really understanding in new ways  
NOTE Confidence: 0.931579635714286

00:52:46.560 --> 00:52:48.440 the complexity and interrelatedness  
NOTE Confidence: 0.931579635714286

00:52:48.440 --> 00:52:50.320 of different clinical conditions.  
NOTE Confidence: 0.931579635714286

00:52:50.320 --> 00:52:51.992 And so in the last couple of minutes  
NOTE Confidence: 0.931579635714286

00:52:51.992 --> 00:52:53.320 before we jump to discussion,  
NOTE Confidence: 0.931579635714286

00:52:53.320 --> 00:52:55.858 I just wanted to mention again

NOTE Confidence: 0.931579635714286  
00:52:55.858 --> 00:52:57.550 our center and this  
NOTE Confidence: 0.804405236923077  
00:52:57.638 --> 00:53:00.124 is a Nida funded center and we,  
NOTE Confidence: 0.804405236923077  
00:53:00.124 --> 00:53:02.710 we are really devoted to bringing  
NOTE Confidence: 0.804405236923077  
00:53:02.793 --> 00:53:04.933 science to the space, right.  
NOTE Confidence: 0.804405236923077  
00:53:04.933 --> 00:53:07.398 Bringing science to the development,  
NOTE Confidence: 0.804405236923077  
00:53:07.400 --> 00:53:09.336 evaluation and implementation of  
NOTE Confidence: 0.804405236923077  
00:53:09.336 --> 00:53:12.240 digital health tools from prevention to  
NOTE Confidence: 0.804405236923077  
00:53:12.314 --> 00:53:14.640 treatment for heavily for substance use.  
NOTE Confidence: 0.804405236923077  
00:53:14.640 --> 00:53:16.280 And mental health is a critical mass of  
NOTE Confidence: 0.804405236923077  
00:53:16.280 --> 00:53:18.074 our group in terms of the work that we do.  
NOTE Confidence: 0.804405236923077  
00:53:18.080 --> 00:53:20.582 But and we do work you know ranging from  
NOTE Confidence: 0.804405236923077  
00:53:20.582 --> 00:53:22.757 precision prevention of cancer to you know,  
NOTE Confidence: 0.804405236923077  
00:53:22.760 --> 00:53:24.280 chronic disease management and diabetes  
NOTE Confidence: 0.804405236923077  
00:53:24.280 --> 00:53:26.480 and and and lots of other areas.  
NOTE Confidence: 0.804405236923077  
00:53:26.480 --> 00:53:28.532 So lots of you know, rigorous science.  
NOTE Confidence: 0.804405236923077

00:53:28.532 --> 00:53:29.756 We're housed at Dartmouth,  
NOTE Confidence: 0.804405236923077

00:53:29.760 --> 00:53:31.488 but we work with partners across  
NOTE Confidence: 0.804405236923077

00:53:31.488 --> 00:53:32.640 the country and internationally.  
NOTE Confidence: 0.804405236923077

00:53:32.640 --> 00:53:34.109 But it's not just about the science, right.  
NOTE Confidence: 0.804405236923077

00:53:34.109 --> 00:53:35.941 It's great to be able to do the  
NOTE Confidence: 0.804405236923077

00:53:35.941 --> 00:53:37.329 rigorous science and publish on  
NOTE Confidence: 0.804405236923077

00:53:37.329 --> 00:53:38.991 and share it with your colleagues.  
NOTE Confidence: 0.804405236923077

00:53:39.000 --> 00:53:40.704 But our our goal is really to have  
NOTE Confidence: 0.804405236923077

00:53:40.704 --> 00:53:42.408 impact and how do we bring the  
NOTE Confidence: 0.804405236923077

00:53:42.408 --> 00:53:43.638 science to People's Daily lives?  
NOTE Confidence: 0.804405236923077

00:53:43.640 --> 00:53:46.916 How do we scale things so that the most  
NOTE Confidence: 0.804405236923077

00:53:46.920 --> 00:53:48.768 how effective and engaging tools are  
NOTE Confidence: 0.804405236923077

00:53:48.768 --> 00:53:51.348 what people can access and we have a  
NOTE Confidence: 0.804405236923077

00:53:51.348 --> 00:53:53.370 lot of resources if you're interested  
NOTE Confidence: 0.804405236923077

00:53:53.442 --> 00:53:55.556 in this work or doing this work.  
NOTE Confidence: 0.804405236923077

00:53:55.560 --> 00:53:57.590 Some of the current things we're up



NOTE Confidence: 0.804405236923077

00:53:57.590 --> 00:53:59.520 to particularly in our recent center

NOTE Confidence: 0.804405236923077

00:53:59.520 --> 00:54:02.898 grant renewal is a focus on some of our

NOTE Confidence: 0.804405236923077

00:54:02.898 --> 00:54:04.158 transdiagnostic digital therapeutics,

NOTE Confidence: 0.804405236923077

00:54:04.160 --> 00:54:06.770 some of the adaptive digital therapeutics

NOTE Confidence: 0.804405236923077

00:54:06.770 --> 00:54:09.525 I mentioned some of our faculty are

NOTE Confidence: 0.804405236923077

00:54:09.525 --> 00:54:11.616 are are doing some really pioneering

NOTE Confidence: 0.804405236923077

00:54:11.616 --> 00:54:13.620 work in the realm of artificial

NOTE Confidence: 0.804405236923077

00:54:13.677 --> 00:54:15.957 intelligence as applied to mental health.

NOTE Confidence: 0.804405236923077

00:54:15.960 --> 00:54:18.808 We've we've launched several

NOTE Confidence: 0.804405236923077

00:54:18.808 --> 00:54:21.137 partnerships with training programs

NOTE Confidence: 0.804405236923077

00:54:21.137 --> 00:54:22.754 for underrepresented minority

NOTE Confidence: 0.804405236923077

00:54:22.754 --> 00:54:25.876 scholars who are working with us in

NOTE Confidence: 0.804405236923077

00:54:25.876 --> 00:54:28.252 digital in training for for becoming

NOTE Confidence: 0.804405236923077

00:54:28.252 --> 00:54:29.440 digital health scholars.

NOTE Confidence: 0.804405236923077

00:54:29.440 --> 00:54:32.320 And then as I mentioned at the beginning,

NOTE Confidence: 0.804405236923077

00:54:32.320 --> 00:54:35.400 you know we are really working on  
NOTE Confidence: 0.804405236923077

00:54:35.400 --> 00:54:37.028 strategic partnerships with with  
NOTE Confidence: 0.804405236923077

00:54:37.028 --> 00:54:39.646 lots of different partners in in the  
NOTE Confidence: 0.804405236923077

00:54:39.646 --> 00:54:41.998 regulatory space and policy and industry  
NOTE Confidence: 0.804405236923077

00:54:42.000 --> 00:54:44.688 investors and and and not just about  
NOTE Confidence: 0.804405236923077

00:54:44.688 --> 00:54:47.119 bringing the science to that community,  
NOTE Confidence: 0.804405236923077

00:54:47.120 --> 00:54:50.194 but really understanding what's happening  
NOTE Confidence: 0.804405236923077

00:54:50.194 --> 00:54:52.581 in those in that area and what kinds of  
NOTE Confidence: 0.804405236923077

00:54:52.581 --> 00:54:54.228 questions and data people want, right.  
NOTE Confidence: 0.804405236923077

00:54:54.228 --> 00:54:55.836 So when payers decide to pay  
NOTE Confidence: 0.804405236923077

00:54:55.836 --> 00:54:57.360 for a digital health tool,  
NOTE Confidence: 0.804405236923077

00:54:57.360 --> 00:54:58.480 what do they care about?  
NOTE Confidence: 0.804405236923077

00:54:58.480 --> 00:55:00.478 You know when the FDA is looking at data,  
NOTE Confidence: 0.804405236923077

00:55:00.480 --> 00:55:01.964 what do they care about so that  
NOTE Confidence: 0.804405236923077

00:55:01.964 --> 00:55:03.275 you know our research community  
NOTE Confidence: 0.804405236923077

00:55:03.275 --> 00:55:04.840 can also be capturing meaningful

NOTE Confidence: 0.804405236923077  
00:55:04.840 --> 00:55:06.898 data that are meaningful to a lot  
NOTE Confidence: 0.804405236923077  
00:55:06.898 --> 00:55:08.233 of stakeholders in this space.  
NOTE Confidence: 0.804405236923077  
00:55:08.240 --> 00:55:10.240 So to that end we've done several things.  
NOTE Confidence: 0.804405236923077  
00:55:10.240 --> 00:55:12.172 We've launched in the annual Digital Health  
NOTE Confidence: 0.804405236923077  
00:55:12.172 --> 00:55:14.174 Summit with a whole array of partners  
NOTE Confidence: 0.804405236923077  
00:55:14.174 --> 00:55:16.199 with that goal for shared dialogue to it,  
NOTE Confidence: 0.804405236923077  
00:55:16.200 --> 00:55:19.028 with a goal of together increasing pace  
NOTE Confidence: 0.804405236923077  
00:55:19.028 --> 00:55:22.568 of access to the most effective tools.  
NOTE Confidence: 0.804405236923077  
00:55:22.568 --> 00:55:25.114 We launched a Dartmouth Innovation  
NOTE Confidence: 0.804405236923077  
00:55:25.114 --> 00:55:27.099 Accelerator in digital Health in  
NOTE Confidence: 0.804405236923077  
00:55:27.099 --> 00:55:29.248 partnership with our Magnuson Center  
NOTE Confidence: 0.804405236923077  
00:55:29.248 --> 00:55:31.040 for Entrepreneurship at Dartmouth.  
NOTE Confidence: 0.804405236923077  
00:55:31.040 --> 00:55:31.368 Again,  
NOTE Confidence: 0.804405236923077  
00:55:31.368 --> 00:55:33.336 it's about getting things out there  
NOTE Confidence: 0.804405236923077  
00:55:33.336 --> 00:55:35.558 that work and having a path in  
NOTE Confidence: 0.804405236923077

00:55:35.558 --> 00:55:36.940 the right partners and knowledge  
NOTE Confidence: 0.804405236923077

00:55:36.940 --> 00:55:38.440 and expertise to bring to that.  
NOTE Confidence: 0.804405236923077

00:55:38.440 --> 00:55:40.720 So this is a big priority of ours.  
NOTE Confidence: 0.804405236923077

00:55:40.720 --> 00:55:42.840 And again, happy to chat about it more,  
NOTE Confidence: 0.804405236923077

00:55:42.840 --> 00:55:45.650 but I want to pause here so we can have  
NOTE Confidence: 0.948573059166666

00:55:45.726 --> 00:55:46.880 some discussion.  
NOTE Confidence: 0.948573059166666

00:55:46.880 --> 00:55:48.584 I included my e-mail,  
NOTE Confidence: 0.948573059166666

00:55:48.584 --> 00:55:50.714 our website for our center.  
NOTE Confidence: 0.948573059166666

00:55:50.720 --> 00:55:52.200 We have a pretty lively,  
NOTE Confidence: 0.948573059166666

00:55:52.200 --> 00:55:52.860 particularly Twitter life.  
NOTE Confidence: 0.948573059166666

00:55:52.860 --> 00:55:54.400 If you all are interested in this,  
NOTE Confidence: 0.948573059166666

00:55:54.400 --> 00:55:55.798 please follow us.  
NOTE Confidence: 0.948573059166666

00:55:55.798 --> 00:56:00.037 And then I had to mention we have some  
NOTE Confidence: 0.948573059166666

00:56:00.037 --> 00:56:02.432 assistant professor level faculty positions  
NOTE Confidence: 0.948573059166666

00:56:02.432 --> 00:56:04.918 available in our center right now,  
NOTE Confidence: 0.948573059166666

00:56:04.920 --> 00:56:06.744 so if anyone has any interest

NOTE Confidence: 0.948573059166666

00:56:06.744 --> 00:56:08.320 in learning more about that,

NOTE Confidence: 0.948573059166666

00:56:08.320 --> 00:56:09.718 please feel free to reach out.

NOTE Confidence: 0.948573059166666

00:56:09.720 --> 00:56:10.992 So anyway, thank you for the

NOTE Confidence: 0.948573059166666

00:56:10.992 --> 00:56:11.840 opportunity to share this.

NOTE Confidence: 0.948573059166666

00:56:11.840 --> 00:56:13.275 I'm going to stop sharing my screen.