

WEBVTT

NOTE duration:"00:14:55"

NOTE recognizability:0.866

NOTE language:en-us

NOTE Confidence: 0.81624484625

00:00:19.440 --> 00:00:22.150 Welcome back to the Yale

NOTE Confidence: 0.81624484625

00:00:22.150 --> 00:00:23.776 Liver Diamond Jubilee.

NOTE Confidence: 0.81624484625

00:00:23.780 --> 00:00:25.560 This session is being recorded.

NOTE Confidence: 0.81624484625

00:00:25.560 --> 00:00:27.528 The Q&A for these sessions will

NOTE Confidence: 0.81624484625

00:00:27.528 --> 00:00:29.170 happen at 5:15. Thank you.

NOTE Confidence: 0.931188958888889

00:00:32.340 --> 00:00:34.328 So this is the final session of

NOTE Confidence: 0.931188958888889

00:00:34.328 --> 00:00:35.602 the afternoon. I'm rob Goodman.

NOTE Confidence: 0.931188958888889

00:00:35.602 --> 00:00:36.772 I'm chair of radiology at

NOTE Confidence: 0.931188958888889

00:00:36.772 --> 00:00:38.396 Yale and it's my pleasure to

NOTE Confidence: 0.931188958888889

00:00:38.396 --> 00:00:39.500 introduce our first speaker.

NOTE Confidence: 0.931188958888889

00:00:39.500 --> 00:00:40.628 My colleague Jeff Weinreb,

NOTE Confidence: 0.931188958888889

00:00:40.628 --> 00:00:42.320 who is a professor of radiology

NOTE Confidence: 0.931188958888889

00:00:42.373 --> 00:00:44.073 and biomedical imaging and national

NOTE Confidence: 0.931188958888889

00:00:44.073 --> 00:00:45.433 authority on liver imaging,
NOTE Confidence: 0.931188958888889

00:00:45.440 --> 00:00:47.930 and helped define the Lie RADS
NOTE Confidence: 0.931188958888889

00:00:47.930 --> 00:00:49.350 classification criteria, Jeff.
NOTE Confidence: 0.0396384

00:00:59.230 --> 00:00:59.760 Oh
NOTE Confidence: 0.84084615

00:01:02.100 --> 00:01:03.400 not opening.
NOTE Confidence: 0.83300555

00:01:05.890 --> 00:01:07.520 You can't see my screen Canyon.
NOTE Confidence: 0.645513316666667

00:01:09.370 --> 00:01:11.056 You see, you've not just slides.
NOTE Confidence: 0.645513316666667

00:01:11.060 --> 00:01:13.486 Not yet. I'm hitting.
NOTE Confidence: 0.645513316666667

00:01:13.486 --> 00:01:17.960 I'm hitting, let's see desktop share.
NOTE Confidence: 0.645513316666667

00:01:17.960 --> 00:01:19.480 Open system preferences is
NOTE Confidence: 0.645513316666667

00:01:19.480 --> 00:01:21.850 what I'm getting, what's that?
NOTE Confidence: 0.91715055

00:01:25.010 --> 00:01:26.580 We can pull them up for you, Jeff
NOTE Confidence: 0.799944809

00:01:26.890 --> 00:01:28.360 no well, the slides are different
NOTE Confidence: 0.799944809

00:01:28.360 --> 00:01:32.360 than what you have, unfortunately.
NOTE Confidence: 0.937841658333333

00:01:32.360 --> 00:01:34.316 Why is it not opening here?
NOTE Confidence: 0.435783503333333

00:01:42.520 --> 00:01:44.089 Thanks share screen,

NOTE Confidence: 0.7711113725

00:01:44.820 --> 00:01:46.770 share screen and then I'm getting

NOTE Confidence: 0.7711113725

00:01:46.770 --> 00:01:49.425 open allow zoom to share your screen

NOTE Confidence: 0.7711113725

00:01:49.425 --> 00:01:51.170 open system preferences is the.

NOTE Confidence: 0.8460669425

00:01:53.920 --> 00:01:55.068 And then nothing's happening.

NOTE Confidence: 0.9485612333333333

00:01:58.410 --> 00:02:02.368 Are you on? You're on a Mac or a PC.

NOTE Confidence: 0.9485612333333333

00:02:02.370 --> 00:02:04.490 I'm on a Mac on a Chrome.

NOTE Confidence: 0.8343083125

00:02:06.630 --> 00:02:07.378 And never had this

NOTE Confidence: 0.9472128566666667

00:02:07.390 --> 00:02:08.638 problem before. Well,

NOTE Confidence: 0.9472128566666667

00:02:08.638 --> 00:02:10.858 you know what I'll just wing it.

NOTE Confidence: 0.9472128566666667

00:02:10.858 --> 00:02:12.068 Just bring up those slides,

NOTE Confidence: 0.9472128566666667

00:02:12.070 --> 00:02:14.403 but I'll it's going to be a mess

NOTE Confidence: 0.9472128566666667

00:02:14.403 --> 00:02:15.820 because they're not the ones that

NOTE Confidence: 0.939423425

00:02:15.830 --> 00:02:16.678 I wanted to use.

NOTE Confidence: 0.9091104316666667

00:02:18.120 --> 00:02:22.368 Alright thanks, OK sorry about that.

NOTE Confidence: 0.9091104316666667

00:02:22.370 --> 00:02:24.760 I'm gonna talk about.

NOTE Confidence: 0.9091104316666667

00:02:24.760 --> 00:02:26.521 Image based hepatology.
NOTE Confidence: 0.909110431666667

00:02:26.521 --> 00:02:30.024 I'm going to focus on only one
NOTE Confidence: 0.909110431666667

00:02:30.024 --> 00:02:31.998 thing because this is a very broad
NOTE Confidence: 0.909110431666667

00:02:31.998 --> 00:02:33.969 topic and I thought it'd be more
NOTE Confidence: 0.909110431666667

00:02:33.969 --> 00:02:35.860 useful to just focus on one thing.
NOTE Confidence: 0.909110431666667

00:02:35.860 --> 00:02:37.974 I'll also tell you that the slides
NOTE Confidence: 0.909110431666667

00:02:37.974 --> 00:02:40.980 I'm using are not the ones I.
NOTE Confidence: 0.909110431666667

00:02:40.980 --> 00:02:43.196 Prepared, so I'm going to be jumping around,
NOTE Confidence: 0.909110431666667

00:02:43.200 --> 00:02:46.413 skipping some slides and I'm going to
NOTE Confidence: 0.909110431666667

00:02:46.413 --> 00:02:49.960 focus mainly on using imaging CT and Mr.
NOTE Confidence: 0.909110431666667

00:02:49.960 --> 00:02:51.468 Four. It's not advancing.
NOTE Confidence: 0.909110431666667

00:02:51.468 --> 00:02:54.020 You want to advance it for me.
NOTE Confidence: 0.909110431666667

00:02:54.020 --> 00:02:56.616 Yeah, you have to. This is going to be tough.
NOTE Confidence: 0.909110431666667

00:02:56.620 --> 00:02:57.960 OK, I have no disclosures.
NOTE Confidence: 0.909110431666667

00:02:57.960 --> 00:02:59.420 I'm gonna focus on HCC.
NOTE Confidence: 0.909110431666667

00:02:59.420 --> 00:03:00.149 Go ahead next.

NOTE Confidence: 0.855655105333333
00:03:03.090 --> 00:03:05.286 So I think everybody who's participating
NOTE Confidence: 0.855655105333333
00:03:05.286 --> 00:03:07.417 in this conference knows that imaging
NOTE Confidence: 0.855655105333333
00:03:07.417 --> 00:03:09.545 plays a pivotal role in the diagnosis
NOTE Confidence: 0.855655105333333
00:03:09.545 --> 00:03:11.427 and staging and management of patients
NOTE Confidence: 0.855655105333333
00:03:11.427 --> 00:03:14.369 with or at risk for HCC and you've
NOTE Confidence: 0.855655105333333
00:03:14.369 --> 00:03:17.207 all in the past gotten reports.
NOTE Confidence: 0.855655105333333
00:03:17.210 --> 00:03:19.412 Those of you who are clinicians
NOTE Confidence: 0.855655105333333
00:03:19.412 --> 00:03:21.709 from radiologists that are just a
NOTE Confidence: 0.855655105333333
00:03:21.709 --> 00:03:23.546 mess and unintelligible in dealing
NOTE Confidence: 0.855655105333333
00:03:23.546 --> 00:03:24.938 with this difficult disease.
NOTE Confidence: 0.855655105333333
00:03:24.940 --> 00:03:28.083 So in 2008, Claude Sirlin from UCSD
NOTE Confidence: 0.855655105333333
00:03:28.083 --> 00:03:31.170 contacted me and a few other people,
NOTE Confidence: 0.855655105333333
00:03:31.170 --> 00:03:33.800 and we talked about standardizing.
NOTE Confidence: 0.855655105333333
00:03:33.800 --> 00:03:35.288 The acquisition, interpretation,
NOTE Confidence: 0.855655105333333
00:03:35.288 --> 00:03:37.768 and reporting of these reports,
NOTE Confidence: 0.855655105333333

00:03:37.770 --> 00:03:39.782 and this is the origin of Lyra's.
NOTE Confidence: 0.8556551053333333

00:03:39.782 --> 00:03:40.988 Next slide, please.
NOTE Confidence: 0.82642896005

00:03:44.220 --> 00:03:46.070 So Lyrans has been developed
NOTE Confidence: 0.82642896005

00:03:46.070 --> 00:03:47.920 and refined over many years.
NOTE Confidence: 0.82642896005

00:03:47.920 --> 00:03:49.332 Have been many contributors,
NOTE Confidence: 0.82642896005

00:03:49.332 --> 00:03:50.038 including Mario,
NOTE Confidence: 0.82642896005

00:03:50.040 --> 00:03:53.188 Strassen, Bosco and next.
NOTE Confidence: 0.92284779375

00:03:55.560 --> 00:03:57.770 The most recent version is
NOTE Confidence: 0.92284779375

00:03:57.770 --> 00:04:00.126 version 2018 and this isn't very
NOTE Confidence: 0.92284779375

00:04:00.126 --> 00:04:02.178 important because up to this point,
NOTE Confidence: 0.92284779375

00:04:02.180 --> 00:04:06.372 myriads and the ASLD had somewhat
NOTE Confidence: 0.92284779375

00:04:06.372 --> 00:04:08.660 divergent criteria for diagnosing
NOTE Confidence: 0.92284779375

00:04:08.660 --> 00:04:11.520 HCC on imaging and through
NOTE Confidence: 0.92284779375

00:04:11.607 --> 00:04:14.759 collaboration from both organizations.
NOTE Confidence: 0.92284779375

00:04:14.760 --> 00:04:17.046 The ACR and ASLD they came
NOTE Confidence: 0.92284779375

00:04:17.046 --> 00:04:19.440 up with a unified guidance,

NOTE Confidence: 0.92284779375

00:04:19.440 --> 00:04:21.416 and this is what we're using today next.

NOTE Confidence: 0.927385416666667

00:04:23.530 --> 00:04:25.215 And this has been translated

NOTE Confidence: 0.927385416666667

00:04:25.215 --> 00:04:26.563 into many languages now,

NOTE Confidence: 0.927385416666667

00:04:26.570 --> 00:04:29.050 so it's being used widely around the world.

NOTE Confidence: 0.927385416666667

00:04:29.050 --> 00:04:30.670 With a few exceptions. In Europe,

NOTE Confidence: 0.927385416666667

00:04:30.670 --> 00:04:33.510 they've developed their own guidelines,

NOTE Confidence: 0.927385416666667

00:04:33.510 --> 00:04:35.838 which are performance wise,

NOTE Confidence: 0.927385416666667

00:04:35.838 --> 00:04:38.166 apparently equivalent to LYRANS,

NOTE Confidence: 0.927385416666667

00:04:38.170 --> 00:04:40.642 but it probably be useful if

NOTE Confidence: 0.927385416666667

00:04:40.642 --> 00:04:42.300 everybody used the same ones.

NOTE Confidence: 0.927385416666667

00:04:42.300 --> 00:04:43.850 We're not there yet next.

NOTE Confidence: 0.904274974285714

00:04:46.820 --> 00:04:50.775 Well, this is the basic algorithm for lyrae's

NOTE Confidence: 0.904274974285714

00:04:50.775 --> 00:04:53.750 for diagnosing and management debate.

NOTE Confidence: 0.904274974285714

00:04:53.750 --> 00:04:56.486 CC and it starts with ultrasound and if

NOTE Confidence: 0.904274974285714

00:04:56.486 --> 00:04:58.754 there's a finding on ultrasound then

NOTE Confidence: 0.904274974285714

00:04:58.754 --> 00:05:01.859 the patients would go on to a contrast,
NOTE Confidence: 0.904274974285714

00:05:01.860 --> 00:05:04.412 enhance them are or see T and based
NOTE Confidence: 0.904274974285714

00:05:04.412 --> 00:05:07.444 on what the findings are and in
NOTE Confidence: 0.904274974285714

00:05:07.444 --> 00:05:09.292 lyrids have called observations,
NOTE Confidence: 0.904274974285714

00:05:09.300 --> 00:05:12.045 they're categorized from one to
NOTE Confidence: 0.904274974285714

00:05:12.045 --> 00:05:15.348 five based on the probability that
NOTE Confidence: 0.904274974285714

00:05:15.348 --> 00:05:17.220 it represents an HCC.
NOTE Confidence: 0.904274974285714

00:05:17.220 --> 00:05:20.286 Is also a category for non
NOTE Confidence: 0.904274974285714

00:05:20.286 --> 00:05:21.830 HCC malignancies. Next
NOTE Confidence: 0.838590731

00:05:25.430 --> 00:05:27.500 next again, I'm going to
NOTE Confidence: 0.838590731

00:05:27.500 --> 00:05:29.570 have to skip over slides.
NOTE Confidence: 0.838590731

00:05:29.570 --> 00:05:31.070 Just jump ahead, keep going.
NOTE Confidence: 0.838590731

00:05:31.070 --> 00:05:32.198 You're gonna have to jump ahead
NOTE Confidence: 0.838590731

00:05:32.198 --> 00:05:35.598 a lot here, and I apologize I.
NOTE Confidence: 0.838590731

00:05:35.600 --> 00:05:36.895 I'm not sure why this doesn't work.
NOTE Confidence: 0.838590731

00:05:36.900 --> 00:05:40.220 Keep going, keep going.

NOTE Confidence: 0.838590731
00:05:40.220 --> 00:05:42.060 Keep going.
NOTE Confidence: 0.838590731
00:05:42.060 --> 00:05:43.218 You don't have time for these,
NOTE Confidence: 0.838590731
00:05:43.220 --> 00:05:43.950 keep going.
NOTE Confidence: 0.955919
00:05:46.360 --> 00:05:51.170 Keep going. Keep going.
NOTE Confidence: 0.955919
00:05:51.170 --> 00:05:53.159 OK, stop there.
NOTE Confidence: 0.955919
00:05:53.159 --> 00:05:57.070 Oops, go back. OK, so.
NOTE Confidence: 0.955919
00:05:57.070 --> 00:05:58.306 Actually go to the next slide.
NOTE Confidence: 0.955919
00:05:58.310 --> 00:05:59.135 Sorry about that.
NOTE Confidence: 0.955919
00:05:59.135 --> 00:06:00.510 Go to the next slide.
NOTE Confidence: 0.955919
00:06:00.510 --> 00:06:02.466 So I'm going to rather than
NOTE Confidence: 0.955919
00:06:02.466 --> 00:06:03.770 trying to cover everything,
NOTE Confidence: 0.955919
00:06:03.770 --> 00:06:06.206 I'm going to just point out
NOTE Confidence: 0.955919
00:06:06.206 --> 00:06:08.944 A5 areas where I think image
NOTE Confidence: 0.955919
00:06:08.944 --> 00:06:11.160 being based hepatology is
NOTE Confidence: 0.955919
00:06:11.160 --> 00:06:13.376 going decently HCC next.
NOTE Confidence: 0.858205291428571

00:06:16.420 --> 00:06:18.460 So the first you already
NOTE Confidence: 0.858205291428571

00:06:18.460 --> 00:06:21.509 heard about up till now.
NOTE Confidence: 0.858205291428571

00:06:21.510 --> 00:06:26.646 Lie Rads and ASLD guidelines are the same,
NOTE Confidence: 0.858205291428571

00:06:26.650 --> 00:06:29.800 but OP TN uses somewhat different guidelines
NOTE Confidence: 0.858205291428571

00:06:29.800 --> 00:06:32.490 and this results in some problems.
NOTE Confidence: 0.858205291428571

00:06:32.490 --> 00:06:34.688 So as you heard from David Mulligan,
NOTE Confidence: 0.858205291428571

00:06:34.690 --> 00:06:36.826 there's now an effort to harmonize
NOTE Confidence: 0.858205291428571

00:06:36.826 --> 00:06:39.522 OPT N with liraz and that'll be
NOTE Confidence: 0.858205291428571

00:06:39.522 --> 00:06:41.527 very useful going forward next.
NOTE Confidence: 0.838729708

00:06:45.090 --> 00:06:48.240 Next, let's talk about surveillance.
NOTE Confidence: 0.838729708

00:06:48.240 --> 00:06:50.958 Currently, HCC surveillance and at risk
NOTE Confidence: 0.838729708

00:06:50.958 --> 00:06:53.642 populations is done with ultrasound semi
NOTE Confidence: 0.838729708

00:06:53.642 --> 00:06:56.421 annually and part of the reason for
NOTE Confidence: 0.838729708

00:06:56.421 --> 00:06:59.295 this is that you know ultrasound works,
NOTE Confidence: 0.838729708

00:06:59.300 --> 00:07:02.126 but it's also very widely available
NOTE Confidence: 0.838729708

00:07:02.126 --> 00:07:03.539 and relatively inexpensive.

NOTE Confidence: 0.838729708

00:07:03.540 --> 00:07:06.988 But we all know that ultrasound is limited

NOTE Confidence: 0.838729708

00:07:06.988 --> 00:07:09.440 sensitivity for earlier small HCC's,

NOTE Confidence: 0.838729708

00:07:09.440 --> 00:07:12.140 especially in patients with advanced

NOTE Confidence: 0.838729708

00:07:12.140 --> 00:07:14.750 cirrhosis and conditions such as a.

NOTE Confidence: 0.838729708

00:07:14.750 --> 00:07:16.328 Obesity and steatosis,

NOTE Confidence: 0.838729708

00:07:16.328 --> 00:07:19.659 in other words, in Americans next.

NOTE Confidence: 0.762045532

00:07:22.400 --> 00:07:25.053 So there's very good data showing that

NOTE Confidence: 0.762045532

00:07:25.053 --> 00:07:28.170 CT and MRI have significantly higher

NOTE Confidence: 0.762045532

00:07:28.170 --> 00:07:30.556 sensitivity for HCC then ultrasound,

NOTE Confidence: 0.762045532

00:07:30.556 --> 00:07:32.788 but we do have these concerns

NOTE Confidence: 0.762045532

00:07:32.788 --> 00:07:35.029 about cost and availability next.

NOTE Confidence: 0.88695037

00:07:37.150 --> 00:07:41.020 So one of the future directions

NOTE Confidence: 0.88695037

00:07:41.020 --> 00:07:45.205 for imaging of HCC is to narrow the

NOTE Confidence: 0.88695037

00:07:45.205 --> 00:07:48.213 cost and availability gaps using

NOTE Confidence: 0.88695037

00:07:48.213 --> 00:07:51.688 abbreviated MRI techniques or protocols,

NOTE Confidence: 0.88695037

00:07:51.690 --> 00:07:53.105 and these have been developed
NOTE Confidence: 0.88695037

00:07:53.105 --> 00:07:54.520 over the last few years.
NOTE Confidence: 0.88695037

00:07:54.520 --> 00:07:57.350 They're still undergoing some testing,
NOTE Confidence: 0.88695037

00:07:57.350 --> 00:07:58.575 but there's a fair amount
NOTE Confidence: 0.88695037

00:07:58.575 --> 00:08:00.130 of data out there on this,
NOTE Confidence: 0.88695037

00:08:00.130 --> 00:08:02.994 and the idea here is that instead of
NOTE Confidence: 0.88695037

00:08:02.994 --> 00:08:06.770 the exam taking about 1/2 hour or so.
NOTE Confidence: 0.88695037

00:08:06.770 --> 00:08:09.350 Or longer that the patient gets
NOTE Confidence: 0.88695037

00:08:09.350 --> 00:08:11.509 injected with a hepatobiliary agent
NOTE Confidence: 0.88695037

00:08:11.509 --> 00:08:14.029 outside the MRI room and then at
NOTE Confidence: 0.88695037

00:08:14.029 --> 00:08:16.035 your leisure you put the patient
NOTE Confidence: 0.88695037

00:08:16.035 --> 00:08:18.357 in the scanner and do a limited
NOTE Confidence: 0.88695037

00:08:18.357 --> 00:08:20.842 number of imaging pulse sequences
NOTE Confidence: 0.88695037

00:08:20.842 --> 00:08:24.132 so that the total scan time is
NOTE Confidence: 0.88695037

00:08:24.132 --> 00:08:26.960 down to about 5 minutes rather than
NOTE Confidence: 0.88695037

00:08:27.053 --> 00:08:28.702 what we are currently using.

NOTE Confidence: 0.88695037

00:08:28.702 --> 00:08:31.200 And not only could this in theory,

NOTE Confidence: 0.88695037

00:08:31.200 --> 00:08:35.232 at least in a in a health system

NOTE Confidence: 0.88695037

00:08:35.232 --> 00:08:36.960 where you're rewarded for.

NOTE Confidence: 0.88695037

00:08:36.960 --> 00:08:39.120 Or or where you can actually

NOTE Confidence: 0.88695037

00:08:39.120 --> 00:08:41.209 cut the reimburse payment,

NOTE Confidence: 0.88695037

00:08:41.210 --> 00:08:43.630 which we don't have now.

NOTE Confidence: 0.88695037

00:08:43.630 --> 00:08:45.142 A less expensive exam,

NOTE Confidence: 0.88695037

00:08:45.142 --> 00:08:46.654 but equally as important

NOTE Confidence: 0.88695037

00:08:46.654 --> 00:08:48.430 by doing shorter exams,

NOTE Confidence: 0.88695037

00:08:48.430 --> 00:08:50.126 we increase the accessibility

NOTE Confidence: 0.88695037

00:08:50.126 --> 00:08:52.246 of the availability of MRI.

NOTE Confidence: 0.88695037

00:08:52.250 --> 00:08:56.648 Now this will probably work in

NOTE Confidence: 0.88695037

00:08:56.650 --> 00:08:59.014 places like the United States and

NOTE Confidence: 0.88695037

00:08:59.014 --> 00:09:01.568 parts of Europe and Asia where

NOTE Confidence: 0.88695037

00:09:01.568 --> 00:09:04.250 there's an abundance of MRI scanners.

NOTE Confidence: 0.88695037

00:09:04.250 --> 00:09:05.906 Probably not going to be that
NOTE Confidence: 0.88695037

00:09:05.906 --> 00:09:07.768 useful in those parts of the world.
NOTE Confidence: 0.88695037

00:09:07.770 --> 00:09:11.514 But you don't have a lot of MRI scanners,
NOTE Confidence: 0.88695037

00:09:11.520 --> 00:09:13.557 and probably what we're going to end
NOTE Confidence: 0.88695037

00:09:13.557 --> 00:09:16.535 up with is some kind of a refined algorithm,
NOTE Confidence: 0.88695037

00:09:16.540 --> 00:09:18.390 hopefully based on data that
NOTE Confidence: 0.88695037

00:09:18.390 --> 00:09:20.240 will get in the future.
NOTE Confidence: 0.88695037

00:09:20.240 --> 00:09:22.272 That indicates which patients
NOTE Confidence: 0.88695037

00:09:22.272 --> 00:09:24.304 should undergo surveillance with
NOTE Confidence: 0.88695037

00:09:24.304 --> 00:09:26.084 ultrasound and which patients
NOTE Confidence: 0.88695037

00:09:26.084 --> 00:09:28.499 should go directly to MRI or CT.
NOTE Confidence: 0.88695037

00:09:28.500 --> 00:09:30.684 Informally, that's already happening,
NOTE Confidence: 0.88695037

00:09:30.684 --> 00:09:33.414 but it's not written into
NOTE Confidence: 0.88695037

00:09:33.414 --> 00:09:35.650 really any guidelines next.
NOTE Confidence: 0.855951261428571

00:09:38.990 --> 00:09:42.126 And as far as the costs go,
NOTE Confidence: 0.855951261428571

00:09:42.130 --> 00:09:45.378 the the reimbursement for MRI has been

NOTE Confidence: 0.855951261428571

00:09:45.378 --> 00:09:48.050 steadily going down over the years.

NOTE Confidence: 0.855951261428571

00:09:48.050 --> 00:09:50.777 It's actually not a whole lot more than a

NOTE Confidence: 0.855951261428571

00:09:50.777 --> 00:09:53.775 CT scan or even ultrasound at this point,

NOTE Confidence: 0.855951261428571

00:09:53.780 --> 00:09:55.368 at least from Medicare.

NOTE Confidence: 0.855951261428571

00:09:55.368 --> 00:09:58.356 And there are now some early studies

NOTE Confidence: 0.855951261428571

00:09:58.356 --> 00:10:00.966 showing that by various measures,

NOTE Confidence: 0.855951261428571

00:10:00.970 --> 00:10:03.690 including quality adjusted life years,

NOTE Confidence: 0.855951261428571

00:10:03.690 --> 00:10:06.399 that MRI can be cost effective for

NOTE Confidence: 0.855951261428571

00:10:06.399 --> 00:10:09.208 surveillance in the high and intermediate.

NOTE Confidence: 0.855951261428571

00:10:09.210 --> 00:10:10.615 This patience but more work

NOTE Confidence: 0.855951261428571

00:10:10.615 --> 00:10:12.380 needs to be done on this,

NOTE Confidence: 0.855951261428571

00:10:12.380 --> 00:10:14.298 but I think we're headed in this

NOTE Confidence: 0.855951261428571

00:10:14.298 --> 00:10:15.999 direction in some instances next.

NOTE Confidence: 0.860484362307692

00:10:19.300 --> 00:10:21.617 Another thing has to do with assessing

NOTE Confidence: 0.860484362307692

00:10:21.617 --> 00:10:24.088 the biology and behavior and prognosis.

NOTE Confidence: 0.860484362307692

00:10:24.090 --> 00:10:26.310 So you've already heard that
NOTE Confidence: 0.860484362307692

00:10:26.310 --> 00:10:28.790 HC's are heterogeneous neoplasm,
NOTE Confidence: 0.860484362307692

00:10:28.790 --> 00:10:32.927 they have different molecular profiles and it
NOTE Confidence: 0.860484362307692

00:10:32.927 --> 00:10:38.380 would be nice to use imaging biomarkers to.
NOTE Confidence: 0.860484362307692

00:10:38.380 --> 00:10:40.272 Determine to differentiate between
NOTE Confidence: 0.860484362307692

00:10:40.272 --> 00:10:43.110 different types of HDCP and that
NOTE Confidence: 0.860484362307692

00:10:43.187 --> 00:10:46.078 would help us know have a better
NOTE Confidence: 0.860484362307692

00:10:46.078 --> 00:10:48.770 idea about prognosis and management.
NOTE Confidence: 0.860484362307692

00:10:48.770 --> 00:10:50.730 Ideas next.
NOTE Confidence: 0.860484362307692

00:10:50.730 --> 00:10:52.340 And it turns out there actually are.
NOTE Confidence: 0.860484362307692

00:10:52.340 --> 00:10:53.444 You can go to the next one too,
NOTE Confidence: 0.860484362307692

00:10:53.450 --> 00:10:55.223 but we don't have time to go into this.
NOTE Confidence: 0.860484362307692

00:10:55.230 --> 00:10:58.065 That there actually is some early research
NOTE Confidence: 0.860484362307692

00:10:58.065 --> 00:11:00.723 showing that with MRI the research in
NOTE Confidence: 0.860484362307692

00:11:00.723 --> 00:11:03.246 features that do indicate to us what
NOTE Confidence: 0.860484362307692

00:11:03.246 --> 00:11:06.894 the aggression of the HCC is and what

NOTE Confidence: 0.860484362307692
00:11:06.894 --> 00:11:10.829 the prognosis is for that type of HCC.
NOTE Confidence: 0.860484362307692
00:11:10.830 --> 00:11:12.540 This is a developing field,
NOTE Confidence: 0.860484362307692
00:11:12.540 --> 00:11:14.436 but it's making a lot of progress next.
NOTE Confidence: 0.764366814285714
00:11:17.170 --> 00:11:19.586 Lyra so of course imaging has a role
NOTE Confidence: 0.764366814285714
00:11:19.586 --> 00:11:21.643 in treatment response and we all know
NOTE Confidence: 0.764366814285714
00:11:21.643 --> 00:11:24.302 that CT and MRI play a central role
NOTE Confidence: 0.764366814285714
00:11:24.302 --> 00:11:26.307 in assessing treatment response next.
NOTE Confidence: 0.8419610975
00:11:28.760 --> 00:11:32.864 So there is now a lyres treatment response.
NOTE Confidence: 0.855583683636364
00:11:35.050 --> 00:11:37.582 Algorithm and these are the categories
NOTE Confidence: 0.855583683636364
00:11:37.582 --> 00:11:40.401 that you see and we were a little
NOTE Confidence: 0.855583683636364
00:11:40.401 --> 00:11:42.183 late in adapting this at Yale,
NOTE Confidence: 0.855583683636364
00:11:42.190 --> 00:11:43.846 but we've been using it now
NOTE Confidence: 0.855583683636364
00:11:43.846 --> 00:11:45.624 since January and it seems to
NOTE Confidence: 0.855583683636364
00:11:45.624 --> 00:11:47.144 be working fairly well next.
NOTE Confidence: 0.884598410909091
00:11:49.270 --> 00:11:52.014 But of course there's a lot of
NOTE Confidence: 0.884598410909091

00:11:52.014 --> 00:11:53.560 different therapies for HCC,
NOTE Confidence: 0.884598410909091

00:11:53.560 --> 00:11:55.961 and even as you already heard from
NOTE Confidence: 0.884598410909091

00:11:55.961 --> 00:11:58.790 a Dave Medoff that there's a lot
NOTE Confidence: 0.884598410909091

00:11:58.790 --> 00:12:01.111 of local regional therapies next,
NOTE Confidence: 0.884598410909091

00:12:01.111 --> 00:12:04.717 and what we're learning is that.
NOTE Confidence: 0.884598410909091

00:12:04.720 --> 00:12:07.630 Assessment of treatment response for each
NOTE Confidence: 0.884598410909091

00:12:07.630 --> 00:12:10.940 one of these therapies may be different.
NOTE Confidence: 0.884598410909091

00:12:10.940 --> 00:12:13.480 They may have different criteria.
NOTE Confidence: 0.884598410909091

00:12:13.480 --> 00:12:17.602 Next so for and and you can
NOTE Confidence: 0.884598410909091

00:12:17.602 --> 00:12:20.029 go to the next one also.
NOTE Confidence: 0.884598410909091

00:12:20.030 --> 00:12:23.702 And so this is a paper that just came
NOTE Confidence: 0.884598410909091

00:12:23.702 --> 00:12:27.097 out which is talking about using.
NOTE Confidence: 0.884598410909091

00:12:27.100 --> 00:12:29.235 Lira has criteria for stereotactic
NOTE Confidence: 0.884598410909091

00:12:29.235 --> 00:12:30.943 body radiation therapy assessment
NOTE Confidence: 0.884598410909091

00:12:30.943 --> 00:12:33.076 and it turns out that the criteria
NOTE Confidence: 0.884598410909091

00:12:33.076 --> 00:12:35.388 are going to be different than what

NOTE Confidence: 0.884598410909091

00:12:35.388 --> 00:12:37.318 we're using for other therapies.

NOTE Confidence: 0.884598410909091

00:12:37.320 --> 00:12:39.162 Now we were really struggling right

NOTE Confidence: 0.884598410909091

00:12:39.162 --> 00:12:41.540 now is with things like transarterial,

NOTE Confidence: 0.884598410909091

00:12:41.540 --> 00:12:42.888 Y-90, radioembolization.

NOTE Confidence: 0.884598410909091

00:12:42.888 --> 00:12:46.258 Lyres just doesn't work there,

NOTE Confidence: 0.884598410909091

00:12:46.260 --> 00:12:48.240 so we're probably in the future

NOTE Confidence: 0.884598410909091

00:12:48.240 --> 00:12:50.855 going to have different criteria for

NOTE Confidence: 0.884598410909091

00:12:50.855 --> 00:12:54.388 assessment of response to each of these

NOTE Confidence: 0.884598410909091

00:12:54.388 --> 00:12:55.973 different types of treatments next.

NOTE Confidence: 0.841404303076923

00:12:59.490 --> 00:13:02.290 And finally, and this is a theme that

NOTE Confidence: 0.841404303076923

00:13:02.290 --> 00:13:06.710 you've already heard during this symposium.

NOTE Confidence: 0.841404303076923

00:13:06.710 --> 00:13:09.140 This is gonna be get to be very complicated

NOTE Confidence: 0.841404303076923

00:13:09.140 --> 00:13:11.318 and most of us have limited neurons.

NOTE Confidence: 0.841404303076923

00:13:11.320 --> 00:13:13.640 It's going to be very hard to put

NOTE Confidence: 0.841404303076923

00:13:13.640 --> 00:13:16.089 this all together without the help of

NOTE Confidence: 0.841404303076923

00:13:16.089 --> 00:13:18.718 a deep learning and and and the AI.
NOTE Confidence: 0.841404303076923

00:13:18.720 --> 00:13:21.015 And so I think this is going to play
NOTE Confidence: 0.841404303076923

00:13:21.015 --> 00:13:23.698 a really big role going on into the
NOTE Confidence: 0.841404303076923

00:13:23.698 --> 00:13:26.080 future and you'll hear more about this
NOTE Confidence: 0.841404303076923

00:13:26.080 --> 00:13:28.296 from one of the following speakers.
NOTE Confidence: 0.841404303076923

00:13:28.296 --> 00:13:29.580 Julia Shapiro next.
NOTE Confidence: 0.835754518

00:13:31.770 --> 00:13:34.250 So in summary, imaging based
NOTE Confidence: 0.835754518

00:13:34.250 --> 00:13:36.730 hepatology has a great future.
NOTE Confidence: 0.835754518

00:13:36.730 --> 00:13:38.992 I didn't talk about any of
NOTE Confidence: 0.835754518

00:13:38.992 --> 00:13:40.123 the technological advances.
NOTE Confidence: 0.835754518

00:13:40.130 --> 00:13:41.762 I didn't talk about the advances
NOTE Confidence: 0.835754518

00:13:41.762 --> 00:13:42.850 we're seeing in ultrasound,
NOTE Confidence: 0.835754518

00:13:42.850 --> 00:13:45.370 nuclear medicine, contrast agents,
NOTE Confidence: 0.835754518

00:13:45.370 --> 00:13:47.161 photon counting, ECT.
NOTE Confidence: 0.835754518

00:13:47.161 --> 00:13:49.816 Faster and more motion free
NOTE Confidence: 0.835754518

00:13:49.816 --> 00:13:52.759 MRI and improved assessment of

NOTE Confidence: 0.835754518

00:13:52.759 --> 00:13:54.949 metabolic diseases metastases.

NOTE Confidence: 0.835754518

00:13:54.950 --> 00:13:56.822 Colangelo carcinoma all of

NOTE Confidence: 0.835754518

00:13:56.822 --> 00:13:59.162 these things are happening and

NOTE Confidence: 0.835754518

00:13:59.162 --> 00:14:01.820 so just keep paying attention.

NOTE Confidence: 0.835754518

00:14:01.820 --> 00:14:02.610 Thanks.

NOTE Confidence: 0.45477656

00:14:13.030 --> 00:14:14.254 After one share the screen,

NOTE Confidence: 0.45477656

00:14:14.254 --> 00:14:15.820 can you one share the screen for me?

NOTE Confidence: 0.7003233

00:14:19.470 --> 00:14:20.630 It's not sharing anymore.