WEBVTT

NOTE duration:"01:01:27.7650000"

NOTE language:en-us

NOTE Confidence: 0.81258315

00:00:00.000 --> 00:00:01.161 Posed for today.

NOTE Confidence: 0.81258315

00:00:01.161 --> 00:00:04.162 We have two talks, one from Doctor Boffa

NOTE Confidence: 0.81258315

00:00:04.162 --> 00:00:06.830 and then the second from doctor Chang.

NOTE Confidence: 0.81258315

00:00:06.830 --> 00:00:08.708 Doctor Boffa will go first.

NOTE Confidence: 0.81258315

00:00:08.708 --> 00:00:11.710 Let me make a brief introduction of Dan.

NOTE Confidence: 0.81258315

00:00:11.710 --> 00:00:13.882 Doctor Boffa is a professor of

NOTE Confidence: 0.81258315

00:00:13.882 --> 00:00:15.330 thoracic surgery and division

NOTE Confidence: 0.81258315

00:00:15.391 --> 00:00:16.959 chief of thoracic surgery.

NOTE Confidence: 0.81258315

00:00:16.960 --> 00:00:18.830 Newly appointed in recent months.

NOTE Confidence: 0.81258315

00:00:18.830 --> 00:00:20.302 Congratulations who received his

NOTE Confidence: 0.81258315

00:00:20.302 --> 00:00:22.142 medical degree from the University

NOTE Confidence: 0.81258315

00:00:22.142 --> 00:00:23.990 of Chicago's Pritzker School of

NOTE Confidence: 0.81258315

00:00:23.990 --> 00:00:25.418 Medicine and completed residency

NOTE Confidence: 0.81258315

00:00:25.418 --> 00:00:27.357 at New York Presbyterian Hospital

NOTE Confidence: 0.81258315

00:00:27.357 --> 00:00:29.302 Weill Cornell Medical Center and

NOTE Confidence: 0.81258315

00:00:29.302 --> 00:00:31.475 his fellowship at Cleveland Clinic.

NOTE Confidence: 0.81258315

00:00:31.475 --> 00:00:33.335 Dan specializes in oesophageal

NOTE Confidence: 0.81258315

00:00:33.335 --> 00:00:34.730 and lung cancer.

NOTE Confidence: 0.81258315

00:00:34.730 --> 00:00:36.502 Achalasia gastroesophageal reflux disease,

NOTE Confidence: 0.81258315

00:00:36.502 --> 00:00:37.388 Adel hernia,

NOTE Confidence: 0.81258315

00:00:37.390 --> 00:00:38.276 oesophageal diverticula

NOTE Confidence: 0.81258315

00:00:38.276 --> 00:00:40.048 am and hyper hydrosis.

NOTE Confidence: 0.81258315

00:00:40.050 --> 00:00:42.402 All things you don't want to have

NOTE Confidence: 0.81258315

00:00:42.402 --> 00:00:45.012 as a highly skilled looking doctor

NOTE Confidence: 0.81258315

00:00:45.012 --> 00:00:48.060 Barber performs the majority of his

NOTE Confidence: 0.81258315

00:00:48.060 --> 00:00:51.260 surgeries with minimally invasive procedures.

NOTE Confidence: 0.81258315

00:00:51.260 --> 00:00:52.468 Committed to increasing the

NOTE Confidence: 0.81258315

00:00:52.468 --> 00:00:53.978 survival rate of cancer patients,

NOTE Confidence: 0.81258315

00:00:53.980 --> 00:00:55.948 doctor Boffa has focused his clinical

NOTE Confidence: 0.81258315

00:00:55.948 --> 00:00:57.912 research on the prevention of tumor

NOTE Confidence: 0.81258315

00:00:57.912 --> 00:00:59.694 metastases and the early detection of

NOTE Confidence: 0.81258315

00:00:59.694 --> 00:01:01.529 lung cancer and on a personal note,

NOTE Confidence: 0.81258315

00:01:01.530 --> 00:01:03.609 I've just been thrilled to be working

NOTE Confidence: 0.81258315

00:01:03.609 --> 00:01:05.760 with Dan for almost a decade now.

NOTE Confidence: 0.81258315

00:01:05.760 --> 00:01:06.061 Here,

NOTE Confidence: 0.81258315

00:01:06.061 --> 00:01:07.867 as we've taken an already great

NOTE Confidence: 0.81258315

00:01:07.867 --> 00:01:09.682 top and made it even better,

NOTE Confidence: 0.81258315

00:01:09.682 --> 00:01:12.098 so Dan, so happy to have you today.

NOTE Confidence: 0.81258315

00:01:12.100 --> 00:01:12.700 The floor

NOTE Confidence: 0.8302357

00:01:12.700 --> 00:01:15.710 is yours alright. Thank you very much.

NOTE Confidence: 0.8302357

00:01:15.710 --> 00:01:17.640 So I have one disclosure.

NOTE Confidence: 0.8302357

00:01:17.640 --> 00:01:19.950 I have a couple of disclaimers.

NOTE Confidence: 0.8302357

00:01:19.950 --> 00:01:23.370 For the interest of time I'm going to present

NOTE Confidence: 0.8302357

00:01:23.370 --> 00:01:26.874 some data without much in the way of methods.

NOTE Confidence: 0.8302357

00:01:26.880 --> 00:01:29.532 I'm happy to go over anything

NOTE Confidence: 0.8302357

00:01:29.532 --> 00:01:32.955 afterwards and I'll even make a pretty

NOTE Confidence: 0.8302357

00:01:32.955 --> 00:01:35.565 egregious statement without any data.

NOTE Confidence: 0.8302357

00:01:35.570 --> 00:01:37.418 And I also have a disclaimer.

NOTE Confidence: 0.8302357

00:01:37.420 --> 00:01:40.228 This is a very emotional topic, and it's

NOTE Confidence: 0.8302357

00:01:40.228 --> 00:01:44.510 one that is fraught in quite a bit of.

NOTE Confidence: 0.8302357

00:01:44.510 --> 00:01:45.980 It makes people quite uncomfortable,

NOTE Confidence: 0.8302357

00:01:45.980 --> 00:01:50.030 and so I just want to give you that as

NOTE Confidence: 0.8302357

00:01:50.142 --> 00:01:53.101 a as a heads up. So surgical safety?

NOTE Confidence: 0.8302357

00:01:53.101 --> 00:01:55.186 Why is this even important?

NOTE Confidence: 0.8302357

00:01:55.190 --> 00:01:58.328 Why is this worth talking about?

NOTE Confidence: 0.8302357

00:01:58.330 --> 00:02:01.669 Um? So I'm going to give you what I

NOTE Confidence: 0.8302357

00:02:01.669 --> 00:02:04.859 think is a mind blowing perspective.

NOTE Confidence: 0.8302357

00:02:04.860 --> 00:02:06.985 So surgical deaths occur in

NOTE Confidence: 0.8302357

00:02:06.985 --> 00:02:10.026 patients who are likely to be cured

NOTE Confidence: 0.8302357

00:02:10.026 --> 00:02:12.510 because that's who we operate on.

NOTE Confidence: 0.8302357

00:02:12.510 --> 00:02:14.258 Had they not died,

NOTE Confidence: 0.8302357

00:02:14.258 --> 00:02:17.440 they would have lived a long time.

NOTE Confidence: 0.8302357

00:02:17.440 --> 00:02:18.739 Therefore, when you,

NOTE Confidence: 0.8302357

00:02:18.739 --> 00:02:20.904 when a surgical patient dies,

NOTE Confidence: 0.8302357

00:02:20.910 --> 00:02:23.302 they forfeit a considerable

NOTE Confidence: 0.8302357

00:02:23.302 --> 00:02:25.096 amount of survival.

NOTE Confidence: 0.8302357

00:02:25.100 --> 00:02:28.636 So if you look at survivorship that's lossed

NOTE Confidence: 0.8302357

00:02:28.636 --> 00:02:32.227 each year from cancer surgery mortality's,

NOTE Confidence: 0.8302357

00:02:32.230 --> 00:02:34.158 it's a big number,

NOTE Confidence: 0.8302357

00:02:34.158 --> 00:02:37.050 even though there's only thousand patients

NOTE Confidence: 0.8302357

00:02:37.130 --> 00:02:40.370 that have died from surgical mortality's,

NOTE Confidence: 0.8302357

00:02:40.370 --> 00:02:42.402 they would have lived

NOTE Confidence: 0.8302357

00:02:42.402 --> 00:02:43.926 many years collectively,

NOTE Confidence: 0.8302357

00:02:43.930 --> 00:02:44.672 in fact.

NOTE Confidence: 0.8302357

00:02:44.672 --> 00:02:45.414 It is,

NOTE Confidence: 0.8302357

00:02:45.414 --> 00:02:48.170 it is very similar to what you

NOTE Confidence: 0.8302357

00:02:48.170 --> 00:02:51.201 would see if you took all stage

NOTE Confidence: 0.8302357

00:02:51.201 --> 00:02:53.636 four patients and stop giving

NOTE Confidence: 0.8302357

00:02:53.636 --> 00:02:56.582 chemotherapy to three out of four.

NOTE Confidence: 0.8302357

00:02:56.590 --> 00:02:58.670 An I can go into detail about how

NOTE Confidence: 0.8302357

00:02:58.670 --> 00:03:00.650 we came up with these numbers,

NOTE Confidence: 0.8302357

00:03:00.650 --> 00:03:02.390 but it's a huge amount of

NOTE Confidence: 0.8302357

00:03:02.390 --> 00:03:03.260 survivorship that's lawston,

NOTE Confidence: 0.8302357

00:03:03.260 --> 00:03:06.347 so this is just giving some perspective.

NOTE Confidence: 0.8302357

00:03:06.350 --> 00:03:08.894 So cancer surgery outcomes are quite

NOTE Confidence: 0.8302357

00:03:08.894 --> 00:03:11.607 variable and they vary based on

NOTE Confidence: 0.8302357

00:03:11.607 --> 00:03:13.967 factors related to patients surgeons.

NOTE Confidence: 0.8302357

00:03:13.970 --> 00:03:16.538 But they also very relating to

NOTE Confidence: 0.8302357

00:03:16.538 --> 00:03:19.340 variables that relate to the hospital.

NOTE Confidence: 0.8302357

00:03:19.340 --> 00:03:22.392 So this is a classic study birkmaier

NOTE Confidence: 0.8302357

00:03:22.392 --> 00:03:25.470 put out almost 20 years ago where

NOTE Confidence: 0.8302357

00:03:25.470 --> 00:03:28.563 he showed that as you increase the

NOTE Confidence: 0.8302357

00:03:28.563 --> 00:03:30.988 surgical volume at a hospital,

NOTE Confidence: 0.8302357

00:03:30.990 --> 00:03:32.328 the mortality decreases.

NOTE Confidence: 0.8775645

00:03:34.410 --> 00:03:36.250 The numbers at the extremes

NOTE Confidence: 0.8775645

00:03:36.250 --> 00:03:37.354 are quite different.

NOTE Confidence: 0.8775645

00:03:37.360 --> 00:03:39.946 The going from a 20% chance of

NOTE Confidence: 0.8775645

00:03:39.946 --> 00:03:42.154 dying from your surgery to 8%

NOTE Confidence: 0.8775645

00:03:42.160 --> 00:03:44.368 and this is 30 day mortality.

NOTE Confidence: 0.8775645

00:03:44.370 --> 00:03:46.220 90 day mortality is generally

NOTE Confidence: 0.8775645

00:03:46.220 --> 00:03:47.330 twice these numbers,

NOTE Confidence: 0.8775645

00:03:47.330 --> 00:03:49.906 so it's a huge amount of variability.

NOTE Confidence: 0.8775645

00:03:49.910 --> 00:03:52.787 So the question is how does a

NOTE Confidence: 0.8775645

00:03:52.787 --> 00:03:55.359 patient pick the best hospital?

NOTE Confidence: 0.8775645

00:03:55.360 --> 00:03:58.720 Well, one way is to use mainstream media,

NOTE Confidence: 0.8775645

00:03:58.720 --> 00:04:01.776 an US news and World Report is probably

NOTE Confidence: 0.8775645

00:04:01.776 --> 00:04:05.018 the most common that people talk about,

NOTE Confidence: 0.8775645

00:04:05.020 --> 00:04:07.120 and that patients engaged when

NOTE Confidence: 0.8775645

00:04:07.120 --> 00:04:08.800 they're making these decisions.

NOTE Confidence: 0.8775645

00:04:08.800 --> 00:04:11.775 And there's some data that actually it

NOTE Confidence: 0.8775645

00:04:11.775 --> 00:04:15.520 is a pretty reliable way to find a safe,

NOTE Confidence: 0.8775645

00:04:15.520 --> 00:04:16.780 high quality hospital.

NOTE Confidence: 0.9104266

00:04:18.970 --> 00:04:23.074 The IT does create a unique situation though.

NOTE Confidence: 0.9104266

00:04:23.080 --> 00:04:26.664 The hospital name is associated with the

NOTE Confidence: 0.9104266

00:04:26.664 --> 00:04:29.760 hospital's reputation for quality and safety.

NOTE Confidence: 0.9104266

00:04:29.760 --> 00:04:32.840 That becomes their brand.

NOTE Confidence: 0.9104266

00:04:32.840 --> 00:04:35.927 Top ranked hospitals have a strong brand.

NOTE Confidence: 0.9104266

00:04:35.930 --> 00:04:38.636 These top ranked hospitals have been

NOTE Confidence: 0.9104266

00:04:38.636 --> 00:04:40.440 increasingly forming affiliations with

NOTE Confidence: 0.9104266

00:04:40.500 --> 00:04:42.630 hospitals and communities and during

NOTE Confidence: 0.9104266

00:04:42.630 --> 00:04:45.190 those affiliations they share that brand.

NOTE Confidence: 0.9104266

00:04:45.190 --> 00:04:46.954 So here's an example.

NOTE Confidence: 0.9104266

00:04:46.954 --> 00:04:48.718 Here's Hellman's Pella Clinic.

NOTE Confidence: 0.9104266

00:04:48.720 --> 00:04:50.480 I made this up.

NOTE Confidence: 0.9104266

00:04:50.480 --> 00:04:52.502 It's famous, it's trusted,

NOTE Confidence: 0.9104266

00:04:52.502 --> 00:04:55.928 it's respected in its top ranked.

NOTE Confidence: 0.9104266

00:04:55.930 --> 00:04:57.114 It, there's Middlebury Hospital,

NOTE Confidence: 0.9104266

00:04:57.114 --> 00:04:59.450 which is a hospital in the community.

NOTE Confidence: 0.9104266

00:04:59.450 --> 00:05:02.840 I made this up as well.

NOTE Confidence: 0.9104266

00:05:02.840 --> 00:05:05.100 And they form an affiliation,

NOTE Confidence: 0.9104266

00:05:05.100 --> 00:05:07.800 and then Asterix is the affiliation.

NOTE Confidence: 0.9104266

00:05:07.800 --> 00:05:09.344 Could be part ownership.

NOTE Confidence: 0.9104266

00:05:09.344 --> 00:05:13.210 It can be just a monetary based relationship,

NOTE Confidence: 0.9104266

00:05:13.210 --> 00:05:15.465 but there's a whole range

NOTE Confidence: 0.9104266

00:05:15.465 --> 00:05:16.818 of affiliation means,

NOTE Confidence: 0.9104266

00:05:16.820 --> 00:05:18.556 but during that affiliation,

NOTE Confidence: 0.9104266

00:05:18.556 --> 00:05:21.780 the Middlebury adopts the brand of Hellman,

NOTE Confidence: 0.9104266

00:05:21.780 --> 00:05:24.486 Pella Clinic, and the question is,

NOTE Confidence: 0.9104266

00:05:24.490 --> 00:05:26.426 what does that mean?

NOTE Confidence: 0.9104266

00:05:26.426 --> 00:05:29.330 So the first question is what

NOTE Confidence: 0.9104266

00:05:29.436 --> 00:05:32.538 would he patients think of that?

NOTE Confidence: 0.9104266

00:05:32.540 --> 00:05:34.600 Well, we conducted a survey.

NOTE Confidence: 0.9104266

00:05:34.600 --> 00:05:36.660 This is a public survey,

NOTE Confidence: 0.9104266

00:05:36.660 --> 00:05:38.320 so it's not patients.

NOTE Confidence: 0.9104266

00:05:38.320 --> 00:05:41.190 It's the general population we use GfK,

NOTE Confidence: 0.9104266

00:05:41.190 --> 00:05:43.250 which allows you to conduct

NOTE Confidence: 0.9104266

00:05:43.250 --> 00:05:44.486 nationally representative surveys.

NOTE Confidence: 0.8868449

00:05:46.560 --> 00:05:48.864 And we had a study that

NOTE Confidence: 0.8868449

00:05:48.864 --> 00:05:50.400 looked at 1000 patients.

NOTE Confidence: 0.8868449

00:05:50.400 --> 00:05:52.704 We had a response rate of

NOTE Confidence: 0.8868449

00:05:52.704 --> 00:05:54.874 just under 60% and we asked.

NOTE Confidence: 0.8868449

00:05:54.874 --> 00:05:57.240 We asked people what do you think

NOTE Confidence: 0.8868449

00:05:57.316 --> 00:05:59.734 the likelihood of dying from surgery

NOTE Confidence: 0.8868449

00:05:59.734 --> 00:06:02.212 when you consider a top ranked

NOTE Confidence: 0.8868449

00:06:02.212 --> 00:06:04.588 hospital or a hospital in the

NOTE Confidence: 0.8868449

00:06:04.588 --> 00:06:06.872 community that is affiliated with a

NOTE Confidence: 0.8868449

00:06:06.872 --> 00:06:09.110 top ranked hospital and we describe

NOTE Confidence: 0.8868449

00:06:09.184 --> 00:06:11.518 this as a complex cancer operation.

NOTE Confidence: 0.8868449

00:06:11.520 --> 00:06:16.100 So of the thousand patients. Um?

NOTE Confidence: 0.8868449

00:06:16.100 --> 00:06:18.669 Just over 1/4 felt that you were

NOTE Confidence: 0.8868449

00:06:18.669 --> 00:06:21.630 more likely to die at an affiliate

NOTE Confidence: 0.8868449

00:06:21.630 --> 00:06:23.845 versus the top ranked hospital.

NOTE Confidence: 0.8868449

00:06:23.850 --> 00:06:25.806 4% felt you actually more likely

NOTE Confidence: 0.8868449

00:06:25.806 --> 00:06:28.669 to die at the top dranked hospital.

NOTE Confidence: 0.8868449

00:06:28.670 --> 00:06:31.230 But 69% felt that it was the same

NOTE Confidence: 0.8868449

00:06:31.230 --> 00:06:33.785 that the safety was the same at

NOTE Confidence: 0.8868449

00:06:33.785 --> 00:06:36.157 a top ranked hospital and the

NOTE Confidence: 0.8868449

00:06:36.157 --> 00:06:38.447 affiliate that shares its brand.

NOTE Confidence: 0.877886

00:06:41.340 --> 00:06:43.797 The so once this affiliation has formed,

NOTE Confidence: 0.877886

00:06:43.800 --> 00:06:45.823 once you add the name of the

NOTE Confidence: 0.877886

00:06:45.823 --> 00:06:48.010 hospital to the hospital community,

NOTE Confidence: 0.877886

00:06:48.010 --> 00:06:51.169 69% of people think the safety is the same.

NOTE Confidence: 0.877886

00:06:51.170 --> 00:06:52.825 That's very different to when

NOTE Confidence: 0.877886

00:06:52.825 --> 00:06:54.920 they don't have the brand to

NOTE Confidence: 0.877886

00:06:54.920 --> 00:06:56.780 hospitals that are not affiliated.

NOTE Confidence: 0.877886

00:06:56.780 --> 00:06:59.588 85% of people preferred and be cared for.

NOTE Confidence: 0.877886

00:06:59.590 --> 00:07:01.178 The top ranked hospital.

NOTE Confidence: 0.877886

00:07:01.178 --> 00:07:03.163 When you actually talk about

NOTE Confidence: 0.877886

00:07:03.163 --> 00:07:05.168 the effectiveness of care,

NOTE Confidence: 0.877886

00:07:05.170 --> 00:07:08.034 how often patients would be cured of cancer,

NOTE Confidence: 0.877886

00:07:08.040 --> 00:07:10.896 half the respondents thought that the safety

NOTE Confidence: 0.877886

00:07:10.896 --> 00:07:13.426 and the effectiveness of care is the same.

NOTE Confidence: 0.877886

00:07:13.430 --> 00:07:16.825 At top ranked hospitals and the community

NOTE Confidence: 0.877886

00:07:16.825 --> 00:07:19.601 hospitals or hospitals in the community

NOTE Confidence: 0.877886

00:07:19.601 --> 00:07:22.079 that share the top ranked brand.

NOTE Confidence: 0.877886

00:07:22.080 --> 00:07:24.704 And we wanted to know is this true?

NOTE Confidence: 0.877886

00:07:24.710 --> 00:07:26.858 So we started with a study

NOTE Confidence: 0.877886

00:07:26.858 --> 00:07:27.932 in Medicare patients,

NOTE Confidence: 0.877886

00:07:27.940 --> 00:07:30.577 so these are people over the age of 65

NOTE Confidence: 0.877886

00:07:30.577 --> 00:07:33.083 and we looked in the Medicare database

NOTE Confidence: 0.877886

00:07:33.083 --> 00:07:35.820 and we looked at top ranked hospitals

NOTE Confidence: 0.877886

00:07:35.820 --> 00:07:38.704 and those were hospitals that had been

NOTE Confidence: 0.877886

00:07:38.710 --> 00:07:41.574 ranked at least once between 2012 and 16,

NOTE Confidence: 0.877886

00:07:41.580 --> 00:07:44.035 and because some hospitals come

NOTE Confidence: 0.877886

00:07:44.035 --> 00:07:47.700 in and out of the top ranked.

NOTE Confidence: 0.877886

00:07:47.700 --> 00:07:50.486 Cohort you end up with 59 hospitals,

NOTE Confidence: 0.877886

00:07:50.490 --> 00:07:52.890 so we started with 59 hospitals.

NOTE Confidence: 0.877886

00:07:52.890 --> 00:07:54.925 We used the American Hospital

NOTE Confidence: 0.877886

00:07:54.925 --> 00:07:57.397 Association survey to look to see

NOTE Confidence: 0.877886

00:07:57.397 --> 00:07:59.551 if they had an affiliation recorded

NOTE Confidence: 0.877886

00:07:59.551 --> 00:08:01.670 and that was 640 hospitals.

NOTE Confidence: 0.877886

00:08:01.670 --> 00:08:03.987 But then we did an Internet search

NOTE Confidence: 0.877886

00:08:03.987 --> 00:08:06.479 and looked for hospitals that were

NOTE Confidence: 0.877886

00:08:06.479 --> 00:08:08.849 actually hospitals in the community,

NOTE Confidence: 0.877886

00:08:08.850 --> 00:08:10.760 the affiliates that were advertising

NOTE Confidence: 0.877886

00:08:10.760 --> 00:08:13.240 that affiliation in their brand presence,

NOTE Confidence: 0.877886

00:08:13.240 --> 00:08:15.418 something that the public and patients

NOTE Confidence: 0.877886

00:08:15.418 --> 00:08:18.019 would see just for our nomenclature,

NOTE Confidence: 0.877886

00:08:18.020 --> 00:08:20.925 we call the top ranked hospitals parents.

NOTE Confidence: 0.877886

00:08:20.930 --> 00:08:22.402 And the affiliates children?

NOTE Confidence: 0.877886

00:08:22.402 --> 00:08:23.506 It's it's just.

NOTE Confidence: 0.877886

00:08:23.510 --> 00:08:26.100 It makes it easier to talk about.

NOTE Confidence: 0.877886

00:08:26.100 --> 00:08:28.314 We don't imply maturity or seniority

NOTE Confidence: 0.877886

00:08:28.314 --> 00:08:29.790 or anything like that.

NOTE Confidence: 0.877886

00:08:29.790 --> 00:08:31.630 It's just helps us conceptualize.

NOTE Confidence: 0.877886

00:08:31.630 --> 00:08:34.264 And I will use that terminology

NOTE Confidence: 0.877886

00:08:34.264 --> 00:08:36.020 a little bit later.

NOTE Confidence: 0.877886

00:08:36.020 --> 00:08:39.020 So we looked at complex cancer surgery and

NOTE Confidence: 0.877886

00:08:39.020 --> 00:08:41.826 these were the procedures we looked at.

NOTE Confidence: 0.877886

00:08:41.830 --> 00:08:43.540 There were 17,000 patients that

NOTE Confidence: 0.877886

00:08:43.540 --> 00:08:45.797 had surgery at top ranked hospitals

NOTE Confidence: 0.877886

00:08:45.797 --> 00:08:47.240 and 12,000 affiliates.

NOTE Confidence: 0.877886

00:08:47.240 --> 00:08:49.562 Other than a little bit difference

NOTE Confidence: 0.877886

00:08:49.562 --> 00:08:50.723 in the age,

NOTE Confidence: 0.877886

00:08:50.730 --> 00:08:52.660 most of the associated demographics

NOTE Confidence: 0.877886

00:08:52.660 --> 00:08:54.204 were actually pretty similar.

NOTE Confidence: 0.877886

00:08:54.210 --> 00:08:56.919 When you looked at the case mix,

NOTE Confidence: 0.877886

00:08:56.920 --> 00:08:57.326 meaning,

NOTE Confidence: 0.877886

00:08:57.326 --> 00:08:59.356 what types of procedures the

NOTE Confidence: 0.877886

00:08:59.356 --> 00:09:00.980 affiliates were doing compared

NOTE Confidence: 0.877886

00:09:01.046 --> 00:09:02.716 to the top ranked hospitals,

NOTE Confidence: 0.877886

00:09:02.720 --> 00:09:05.415 you see that most of the surgeries

NOTE Confidence: 0.877886

00:09:05.415 --> 00:09:07.858 were colectomies at affiliates so 60.

NOTE Confidence: 0.877886

00:09:07.860 --> 00:09:10.914 3% of all the complex surgeries

NOTE Confidence: 0.877886

00:09:10.914 --> 00:09:14.230 they were doing were colon based.

NOTE Confidence: 0.877886

00:09:14.230 --> 00:09:16.180 Where is the top ranked hospitals

NOTE Confidence: 0.877886

00:09:16.180 --> 00:09:18.573 that was just a third and when

NOTE Confidence: 0.877886

00:09:18.573 --> 00:09:19.937 you look at Whipples,

NOTE Confidence: 0.877886

00:09:19.940 --> 00:09:22.005 Whipples made up a very small percentage

NOTE Confidence: 0.877886

00:09:22.005 --> 00:09:24.310 of what was happening at affiliates,

NOTE Confidence: 0.877886

00:09:24.310 --> 00:09:26.680 but a reasonable percentage of what

NOTE Confidence: 0.877886

00:09:26.680 --> 00:09:29.010 happened at top ranked hospitals.

NOTE Confidence: 0.877886

00:09:29.010 --> 00:09:31.200 And there is a sense of

NOTE Confidence: 0.877886

00:09:31.200 --> 00:09:32.660 regionalization within these networks,

NOTE Confidence: 0.877886

00:09:32.660 --> 00:09:33.310 so again,

NOTE Confidence: 0.877886

00:09:33.310 --> 00:09:34.935 the previous slides were looking

NOTE Confidence: 0.877886

00:09:34.935 --> 00:09:37.600 at it from the affiliate or the

NOTE Confidence: 0.877886

00:09:37.600 --> 00:09:39.224 top ranked hospitals standpoint.

NOTE Confidence: 0.877886

00:09:39.230 --> 00:09:41.790 But if you look at the type of

NOTE Confidence: 0.877886

00:09:41.790 --> 00:09:44.133 surgery and say where are all

NOTE Confidence: 0.877886

00:09:44.133 --> 00:09:46.163 of the colectomies being done,

NOTE Confidence: 0.877886

00:09:46.170 --> 00:09:48.360 what's the split for all colectomies?

NOTE Confidence: 0.877886

00:09:48.360 --> 00:09:50.550 More than half of all colectomies

NOTE Confidence: 0.877886

00:09:50.550 --> 00:09:52.010 are happening at affiliates,

NOTE Confidence: 0.877886

00:09:52.010 --> 00:09:54.195 whereas for Whipples only 18% of

NOTE Confidence: 0.877886

00:09:54.195 --> 00:09:56.020 Whipples are happening in affiliates.

NOTE Confidence: 0.8423933

00:09:56.020 --> 00:09:58.603 So it does seem that the more

NOTE Confidence: 0.8423933

00:09:58.603 --> 00:10:00.130 dangerous operations in this.

NOTE Confidence: 0.8423933

00:10:00.130 --> 00:10:02.923 Mix are happening at the top ranked

NOTE Confidence: 0.8423933

00:10:02.923 --> 00:10:05.269 hospital as appeared the affiliates.

NOTE Confidence: 0.8423933

00:10:05.270 --> 00:10:07.926 So the the code words are very different.

NOTE Confidence: 0.8423933

00:10:07.930 --> 00:10:09.278 Affiliate hospitals are smaller,

NOTE Confidence: 0.8423933

00:10:09.278 --> 00:10:11.300 so if you look at the

NOTE Confidence: 0.8423933

00:10:11.368 --> 00:10:12.928 beds it's 200 versus 700.

NOTE Confidence: 0.8423933

00:10:12.930 --> 00:10:16.080 If you look at other things that have been

NOTE Confidence: 0.8423933

00:10:16.080 --> 00:10:18.617 associated other attributes that have been

NOTE Confidence: 0.8423933

00:10:18.617 --> 00:10:21.530 associated with quality that you affiliates.

NOTE Confidence: 0.8423933

00:10:21.530 --> 00:10:23.402 There's a big difference there for

NOTE Confidence: 0.8423933

00:10:23.402 --> 00:10:24.650 Commission on cancer accreditation.

NOTE Confidence: 0.8423933

00:10:24.650 --> 00:10:26.210 The affiliates are less likely.

NOTE Confidence: 0.8423933

00:10:26.210 --> 00:10:29.630 They are far less likely to be a teaching

NOTE Confidence: 0.8423933

00:10:29.630 --> 00:10:32.748 hospital in the annual volume is much lower.

NOTE Confidence: 0.8423933

00:10:32.750 --> 00:10:36.598 If you look at the use of minimally

NOTE Confidence: 0.8423933

00:10:36.598 --> 00:10:39.658 invasive techniques and leapfrog standards.

NOTE Confidence: 0.8423933

00:10:39.660 --> 00:10:41.540 It's far and away.

NOTE Confidence: 0.8423933

00:10:41.540 --> 00:10:43.890 Favors the top ranked hospital,

NOTE Confidence: 0.8423933

00:10:43.890 --> 00:10:46.305 so we looked at 90 day mortality

NOTE Confidence: 0.8423933

00:10:46.305 --> 00:10:47.650 and we looked at.

NOTE Confidence: 0.8423933

00:10:47.650 --> 00:10:50.128 We first use an aggregate approach which

NOTE Confidence: 0.8423933

00:10:50.128 --> 00:10:52.552 meaning we took all the patients that

NOTE Confidence: 0.8423933

00:10:52.552 --> 00:10:54.888 had surgery at the top ranked hospitals

NOTE Confidence: 0.8423933

00:10:54.888 --> 00:10:57.568 and we compared him to all the patients

NOTE Confidence: 0.8423933

00:10:57.568 --> 00:11:00.700 who had surgery at the affiliates.

NOTE Confidence: 0.8423933

00:11:00.700 --> 00:11:03.388 And the dark blue bars are the

NOTE Confidence: 0.8423933

00:11:03.388 --> 00:11:05.495 top ranked hospital and the

NOTE Confidence: 0.8423933

00:11:05.495 --> 00:11:07.690 lighter ones are the affiliates.

NOTE Confidence: 0.8423933

00:11:07.690 --> 00:11:10.978 The different procedures are on the X axis,

NOTE Confidence: 0.8423933

00:11:10.980 --> 00:11:13.446 and a taller bar means a

NOTE Confidence: 0.8423933

00:11:13.446 --> 00:11:15.090 higher 90 day mortality.

NOTE Confidence: 0.8423933

00:11:15.090 --> 00:11:17.202 And for everything the

NOTE Confidence: 0.8423933

00:11:17.202 --> 00:11:19.842 affiliate has a taller bar.

NOTE Confidence: 0.8423933

00:11:19.850 --> 00:11:23.414 When you look at it in an adjusted way,

NOTE Confidence: 0.8423933

00:11:23.420 --> 00:11:25.410 this is a logistic regression.

NOTE Confidence: 0.8423933

00:11:25.410 --> 00:11:28.070 Looking at 90 day mortality and it's

NOTE Confidence: 0.8423933

00:11:28.070 --> 00:11:30.967 listed here for each of the procedures.

NOTE Confidence: 0.8423933

00:11:30.970 --> 00:11:34.138 But when you look at all the procedures,

NOTE Confidence: 0.8423933

00:11:34.140 --> 00:11:36.135 its mortality was 1.4 times

NOTE Confidence: 0.8423933

00:11:36.135 --> 00:11:37.731 higher and affiliate hospital

NOTE Confidence: 0.8423933

00:11:37.731 --> 00:11:39.697 versus the top ranked hospital.

NOTE Confidence: 0.8423933

00:11:39.700 --> 00:11:42.248 We did not include in our adjustment

NOTE Confidence: 0.8423933

00:11:42.248 --> 00:11:43.824 hospital factors because patients

NOTE Confidence: 0.8423933

00:11:43.824 --> 00:11:45.516 don't consider those typically

NOTE Confidence: 0.8423933

00:11:45.516 --> 00:11:47.631 when they are making decisions,

NOTE Confidence: 0.8423933

00:11:47.640 --> 00:11:50.419 they look at a top ranked hospital.

NOTE Confidence: 0.8423933

00:11:50.420 --> 00:11:52.680 They look at the brand.

NOTE Confidence: 0.8423933

00:11:52.680 --> 00:11:55.752 They're not looking at teaching status

NOTE Confidence: 0.8423933

00:11:55.752 --> 00:11:58.990 or ciocie accreditation or annual volume.

NOTE Confidence: 0.8423933

00:11:58.990 --> 00:12:01.300 We now looked at a family approach

NOTE Confidence: 0.8423933

00:12:01.300 --> 00:12:03.457 where we took each parent and

NOTE Confidence: 0.8423933

00:12:03.457 --> 00:12:05.653 looked at all of their children.

NOTE Confidence: 0.8423933

00:12:05.660 --> 00:12:08.198 So we took one top ranked

NOTE Confidence: 0.8423933

00:12:08.198 --> 00:12:10.988 hospital and compared it to all

NOTE Confidence: 0.8423933

00:12:10.988 --> 00:12:13.016 of their affiliates combined.

NOTE Confidence: 0.8423933

00:12:13.020 --> 00:12:15.295 And we use the standardized mortality ratio,

NOTE Confidence: 0.8423933

00:12:15.300 --> 00:12:18.023 which is similar to what CMS uses

NOTE Confidence: 0.8423933

00:12:18.023 --> 00:12:20.848 to create its star rating system.

NOTE Confidence: 0.8423933

00:12:20.850 --> 00:12:23.706 Here the Orange of the top ranked

NOTE Confidence: 0.8423933

00:12:23.706 --> 00:12:26.502 hospitals and the blue are the

NOTE Confidence: 0.8423933

00:12:26.502 --> 00:12:27.990 affiliates collectively and

NOTE Confidence: 0.8423933

00:12:27.990 --> 00:12:30.620 anything to the right screen.

NOTE Confidence: 0.8423933

00:12:30.620 --> 00:12:32.945 Right means it's less safe

NOTE Confidence: 0.8423933

00:12:32.945 --> 00:12:35.270 than anything to its left.

NOTE Confidence: 0.8423933

00:12:35.270 --> 00:12:38.534 So here you can see the orange dots

NOTE Confidence: 0.8423933

00:12:38.534 --> 00:12:41.720 seem to be to the left and the

NOTE Confidence: 0.8423933

00:12:41.720 --> 00:12:45.100 blue dots seem to be right saying

NOTE Confidence: 0.8423933

00:12:45.100 --> 00:12:48.040 showing there's a higher adjusted

NOTE Confidence: 0.8423933

00:12:48.040 --> 00:12:50.238 mortality at the affiliates.

NOTE Confidence: 0.8423933

00:12:50.238 --> 00:12:55.380 And when you look at all of them combined.

NOTE Confidence: 0.8423933

00:12:55.380 --> 00:12:58.924 83% of the time the blue bars were

NOTE Confidence: 0.8423933

00:12:58.924 --> 00:13:02.630 to the right of the orange bars,

NOTE Confidence: 0.8423933

00:13:02.630 --> 00:13:05.913 so 83% of the time the affiliates

NOTE Confidence: 0.8423933

00:13:05.913 --> 00:13:09.280 were less safe than the specific

NOTE Confidence: 0.8423933

00:13:09.280 --> 00:13:11.137 top ranked hospital.

NOTE Confidence: 0.8423933

00:13:11.140 --> 00:13:12.295 So in summary,

NOTE Confidence: 0.8423933

00:13:12.295 --> 00:13:14.990 the chance of dying from complex surgery

NOTE Confidence: 0.8423933

00:13:15.060 --> 00:13:17.187 an affiliate is about 40% higher

NOTE Confidence: 0.8423933

00:13:17.187 --> 00:13:20.203 than it is at the top ranked hospital.

NOTE Confidence: 0.8423933

00:13:20.210 --> 00:13:22.100 An 83% of the time.

NOTE Confidence: 0.8423933

00:13:22.100 --> 00:13:24.350 So it's not just a couple

NOTE Confidence: 0.8423933

00:13:24.350 --> 00:13:25.850 of top ranked hospitals

NOTE Confidence: 0.88831955

00:13:25.933 --> 00:13:27.389 that are the issue,

NOTE Confidence: 0.88831955

00:13:27.390 --> 00:13:29.280 and we've done sensitivity analysis.

NOTE Confidence: 0.88831955

00:13:29.280 --> 00:13:31.248 Looking at does it matter where

NOTE Confidence: 0.88831955

00:13:31.248 --> 00:13:34.149 in the top 50 you fall we have

NOTE Confidence: 0.88831955

00:13:34.149 --> 00:13:36.044 adjusted for things like volume

NOTE Confidence: 0.88831955

00:13:36.044 --> 00:13:39.085 and hospital attributes and it does

NOTE Confidence: 0.88831955

00:13:39.085 --> 00:13:41.157 not eliminate this differential.

NOTE Confidence: 0.88831955

00:13:41.160 --> 00:13:43.242 So we wanted to look at

NOTE Confidence: 0.88831955

00:13:43.242 --> 00:13:45.040 this in a different way.

NOTE Confidence: 0.88831955

00:13:45.040 --> 00:13:47.392 We looked in the National Cancer

NOTE Confidence: 0.88831955

00:13:47.392 --> 00:13:49.483 database because this allowed us to

NOTE Confidence: 0.88831955

00:13:49.483 --> 00:13:51.845 look at all ages an with a lot more

NOTE Confidence: 0.88831955

00:13:51.845 --> 00:13:54.215 patients and better staging information.

NOTE Confidence: 0.88831955

00:13:54.220 --> 00:13:56.481 For those of you that aren't familiar

NOTE Confidence: 0.88831955

00:13:56.481 --> 00:13:58.460 with the National Cancer database,

NOTE Confidence: 0.88831955

00:13:58.460 --> 00:14:00.554 it's it contributing to the National

NOTE Confidence: 0.88831955

00:14:00.554 --> 00:14:01.950 Cancer database is compulsory

NOTE Confidence: 0.88831955

00:14:02.004 --> 00:14:03.749 for all COC accredited hospitals.

NOTE Confidence: 0.88831955

00:14:03.750 --> 00:14:06.870 It ends up capturing about 70% of the

NOTE Confidence: 0.88831955

00:14:06.870 --> 00:14:09.870 cancer care in the United States.

NOTE Confidence: 0.88831955

00:14:09.870 --> 00:14:14.007 So we looked between 2012 and 16.

NOTE Confidence: 0.88831955

00:14:14.010 --> 00:14:17.990 We expanded the number of.

NOTE Confidence: 0.88831955

00:14:17.990 --> 00:14:20.503 Cancers that we were looking at and

NOTE Confidence: 0.88831955

00:14:20.503 --> 00:14:23.348 we ended up with 120,000 patients,

NOTE Confidence: 0.88831955

00:14:23.350 --> 00:14:25.405 80,000 at top ranked hospitals

NOTE Confidence: 0.88831955

00:14:25.405 --> 00:14:26.638 and 40,000 affiliates.

NOTE Confidence: 0.88831955

00:14:26.640 --> 00:14:28.700 This is again unadjusted mortality,

NOTE Confidence: 0.88831955

00:14:28.700 --> 00:14:31.996 so the the blue bars are the affiliates.

NOTE Confidence: 0.88831955

00:14:32.000 --> 00:14:34.502 The orange bars at the top

NOTE Confidence: 0.88831955

00:14:34.502 --> 00:14:37.348 ranked in for every one of them.

NOTE Confidence: 0.88831955

00:14:37.350 --> 00:14:39.410 The Blue Bar is taller,

NOTE Confidence: 0.88831955

00:14:39.410 --> 00:14:41.885 meaning there's a higher unadjusted

NOTE Confidence: 0.88831955

00:14:41.885 --> 00:14:43.865 mortality at the affiliates.

NOTE Confidence: 0.88831955

00:14:43.870 --> 00:14:46.518 When you look at a 90 day mortality

NOTE Confidence: 0.88831955

00:14:46.518 --> 00:14:48.479 in an adjusted model,

NOTE Confidence: 0.88831955

00:14:48.480 --> 00:14:51.007 the odds ratio of 90 day mortality

NOTE Confidence: 0.88831955

00:14:51.007 --> 00:14:53.090 was actually 1.7 times higher.

NOTE Confidence: 0.88831955

00:14:53.090 --> 00:14:56.105 So your 70 * 70% more likely to

NOTE Confidence: 0.88831955

00:14:56.105 --> 00:14:58.295 die from your cancer surgery at

NOTE Confidence: 0.88831955

00:14:58.295 --> 00:15:00.275 an affiliate hospital compared

NOTE Confidence: 0.88831955

00:15:00.275 --> 00:15:02.835 to the top ranked hospital.

NOTE Confidence: 0.88831955

00:15:02.840 --> 00:15:05.516 We wanted to look at long-term

NOTE Confidence: 0.88831955

00:15:05.516 --> 00:15:06.854 survival as well.

NOTE Confidence: 0.88831955

00:15:06.860 --> 00:15:10.300 So if you look at Unadjusted Stage 3,

NOTE Confidence: 0.88831955

00:15:10.300 --> 00:15:11.094 colon cancer,

NOTE Confidence: 0.88831955

00:15:11.094 --> 00:15:13.873 the red line is the top ranked

NOTE Confidence: 0.88831955

00:15:13.873 --> 00:15:15.030 hospital survival.

NOTE Confidence: 0.88831955

00:15:15.030 --> 00:15:18.040 The blue line is the affiliate survival,

NOTE Confidence: 0.88831955

00:15:18.040 --> 00:15:22.340 and so this is just for Stage 3 colon cancer.

NOTE Confidence: 0.88831955

00:15:22.340 --> 00:15:24.490 It's significant for Stage 1,

NOTE Confidence: 0.88831955

00:15:24.490 --> 00:15:26.640 two and three colon cancer.

NOTE Confidence: 0.88831955

00:15:26.640 --> 00:15:29.220 We also looked at lung cancer,

NOTE Confidence: 0.88831955

00:15:29.220 --> 00:15:32.916 and we really only did those two cancer

NOTE Confidence: 0.88831955

00:15:32.916 --> 00:15:35.667 types because in this in this way,

NOTE Confidence: 0.88831955

00:15:35.670 --> 00:15:37.930 because the numbers were low.

NOTE Confidence: 0.88831955

00:15:37.930 --> 00:15:40.558 The for the other cancer types,

NOTE Confidence: 0.88831955

00:15:40.560 --> 00:15:43.640 so we just looked at stage stratified,

NOTE Confidence: 0.88831955

00:15:43.640 --> 00:15:46.307 colon and lung and it was significantly

NOTE Confidence: 0.88831955

00:15:46.307 --> 00:15:49.502 higher at the top ranked hospital versus

NOTE Confidence: 0.88831955

00:15:49.502 --> 00:15:51.977 the affiliate after cancer surgery.

NOTE Confidence: 0.88831955

00:15:51.980 --> 00:15:54.170 And we landmark these outside

NOTE Confidence: 0.88831955

00:15:54.170 --> 00:15:55.922 the 90 day mortality.

NOTE Confidence: 0.88831955

00:15:55.930 --> 00:15:58.863 So it wasn't just that you were

NOTE Confidence: 0.88831955

00:15:58.863 --> 00:16:00.760 having fewer surgical deaths,

NOTE Confidence: 0.88831955

00:16:00.760 --> 00:16:03.928 even of if you just looked at people

NOTE Confidence: 0.88831955

00:16:03.928 --> 00:16:06.470 that survived their cancer surgery.

NOTE Confidence: 0.88831955

00:16:06.470 --> 00:16:09.730 The survival was higher.

NOTE Confidence: 0.88831955

00:16:09.730 --> 00:16:13.699 We also looked at this in an adjusted way.

NOTE Confidence: 0.88831955

00:16:13.700 --> 00:16:16.787 We use gamma models and time ratios,

NOTE Confidence: 0.88831955

00:16:16.790 --> 00:16:20.198 so a time ratio just means relative to

NOTE Confidence: 0.88831955

00:16:20.198 --> 00:16:23.396 the survival at the top ranked hospital.

NOTE Confidence: 0.88831955

00:16:23.400 --> 00:16:27.369 So this is the plot of the adjusted survival.

NOTE Confidence: 0.88831955

00:16:27.370 --> 00:16:29.960 So anything to the left of the

NOTE Confidence: 0.88831955

00:16:29.960 --> 00:16:33.038 yellow line means that they had less

NOTE Confidence: 0.88831955

00:16:33.038 --> 00:16:35.393 survival that affiliates had less

NOTE Confidence: 0.88831955

00:16:35.393 --> 00:16:37.950 survival than top ranked hospitals.

NOTE Confidence: 0.88831955

00:16:37.950 --> 00:16:40.818 So overall, all of the procedures.

NOTE Confidence: 0.88831955

00:16:40.820 --> 00:16:43.648 The survival was less at the affiliates

NOTE Confidence: 0.88831955

00:16:43.648 --> 00:16:46.209 versus the top ranked hospitals,

NOTE Confidence: 0.88831955

00:16:46.210 --> 00:16:49.630 so overall the after surgery the

NOTE Confidence: 0.88831955

00:16:49.630 --> 00:16:52.444 patients at affiliate hospitals only

NOTE Confidence: 0.88831955

00:16:52.444 --> 00:16:55.503 lived about 3/4 as long as patients

NOTE Confidence: 0.88831955

00:16:55.503 --> 00:16:59.316 that had surgery at top ranked hospitals.

NOTE Confidence: 0.88831955

00:16:59.320 --> 00:17:01.978 So in that that data was

NOTE Confidence: 0.88831955

00:17:01.978 --> 00:17:03.750 adjusted for volume as

NOTE Confidence: 0.84117377

00:17:03.849 --> 00:17:07.146 well and it did not change the

NOTE Confidence: 0.84117377

00:17:07.146 --> 00:17:09.510 significance of the findings.

NOTE Confidence: 0.84117377

00:17:09.510 --> 00:17:12.205 So the summary of that this research

NOTE Confidence: 0.84117377

00:17:12.205 --> 00:17:15.719 is that the public believes that brand

NOTE Confidence: 0.84117377

00:17:15.719 --> 00:17:18.564 sharing equals quality sharing that

NOTE Confidence: 0.84117377

00:17:18.564 --> 00:17:21.627 surgical mortality is 1.7 times higher.

NOTE Confidence: 0.84117377

00:17:21.630 --> 00:17:25.025 If you have surgery at a affiliative,

NOTE Confidence: 0.84117377

00:17:25.030 --> 00:17:27.982 a top ranked hospital compared to

NOTE Confidence: 0.84117377

00:17:27.982 --> 00:17:30.850 the actual top ranked hospital.

NOTE Confidence: 0.84117377

00:17:30.850 --> 00:17:33.124 And that the survival is shorter

NOTE Confidence: 0.84117377

00:17:33.124 --> 00:17:35.077 at the affiliate compared to

NOTE Confidence: 0.84117377

00:17:35.077 --> 00:17:36.927 the actual top ranked hospital.

NOTE Confidence: 0.84117377

00:17:36.930 --> 00:17:39.234 So affiliation does not in and

NOTE Confidence: 0.84117377

00:17:39.234 --> 00:17:41.530 of itself equal care equality,

NOTE Confidence: 0.84117377

00:17:41.530 --> 00:17:44.946 despite the fact that that a large

NOTE Confidence: 0.84117377

00:17:44.946 --> 00:17:48.758 proportion of the public believes it does.

NOTE Confidence: 0.84117377

00:17:48.760 --> 00:17:52.162 So is this the problem or is

NOTE Confidence: 0.84117377

00:17:52.162 --> 00:17:53.620 this the solution?

NOTE Confidence: 0.84117377

00:17:53.620 --> 00:17:57.309 So we actually believe that the network

NOTE Confidence: 0.84117377

00:17:57.309 --> 00:18:00.505 infrastructure can be leveraged to be the

NOTE Confidence: 0.84117377

00:18:00.505 --> 00:18:04.607 solution to a lot of the gaps in cancer care.

NOTE Confidence: 0.84117377

00:18:04.610 --> 00:18:08.215 And it really provides three key things.

NOTE Confidence: 0.84117377

00:18:08.220 --> 00:18:08.813 Connectivity,

NOTE Confidence: 0.84117377

00:18:08.813 --> 00:18:10.592 accountability and ability.

NOTE Confidence: 0.84117377

00:18:10.592 --> 00:18:13.557 So from the connectivity standpoint,

NOTE Confidence: 0.84117377

00:18:13.560 --> 00:18:17.320 if you look at the current cancer surgery

NOTE Confidence: 0.84117377

00:18:17.320 --> 00:18:20.917 market share a lot of hospitals have a piece

NOTE Confidence: 0.84117377

00:18:20.917 --> 00:18:24.979 of the pie and they're totally disconnected,

NOTE Confidence: 0.84117377

00:18:24.980 --> 00:18:26.884 and it's very difficult

NOTE Confidence: 0.84117377

00:18:26.884 --> 00:18:28.788 to share best practices.

NOTE Confidence: 0.84117377

00:18:28.790 --> 00:18:30.694 The there's privacy issues.

NOTE Confidence: 0.84117377

00:18:30.694 --> 00:18:33.074 There's competition among the hospitals.

NOTE Confidence: 0.84117377

00:18:33.080 --> 00:18:35.455 There's the lack of compatibility

NOTE Confidence: 0.84117377

00:18:35.455 --> 00:18:36.880 between their systems,

NOTE Confidence: 0.84117377

00:18:36.880 --> 00:18:38.568 so as a result,

NOTE Confidence: 0.84117377

00:18:38.568 --> 00:18:40.256 it's very difficult to

NOTE Confidence: 0.84117377

00:18:40.256 --> 00:18:42.230 do quality improvement.

NOTE Confidence: 0.84117377

00:18:42.230 --> 00:18:43.445 Across these hospitals.

NOTE Confidence: 0.84117377

00:18:43.445 --> 00:18:46.280 But you gotta keep in mind that

NOTE Confidence: 0.84117377

00:18:46.359 --> 00:18:49.143 there's a connection between the top

NOTE Confidence: 0.84117377

00:18:49.143 --> 00:18:51.890 ranked hospitals and their affiliates.

NOTE Confidence: 0.84117377

00:18:51.890 --> 00:18:53.706 That eliminates these barriers.

NOTE Confidence: 0.84117377

00:18:53.706 --> 00:18:57.038 It turns out that the these networks

NOTE Confidence: 0.84117377

00:18:57.038 --> 00:18:59.668 around the top ranked hospitals,

NOTE Confidence: 0.84117377

00:18:59.670 --> 00:19:03.126 they have a huge piece of the pie.

NOTE Confidence: 0.84117377

00:19:03.130 --> 00:19:06.218 It's not a one out of three complex

NOTE Confidence: 0.84117377

00:19:06.218 --> 00:19:07.973 surgeries actually happens within

NOTE Confidence: 0.84117377

00:19:07.973 --> 00:19:10.228 these networks and every year

NOTE Confidence: 0.84117377

00:19:10.228 --> 00:19:12.659 their market share is increasing,

NOTE Confidence: 0.84117377

00:19:12.660 --> 00:19:14.904 so it's eliminating the barriers that

NOTE Confidence: 0.84117377

00:19:14.904 --> 00:19:17.489 prevent a lot of quality improvement

NOTE Confidence: 0.84117377

00:19:17.489 --> 00:19:20.014 within These Top Rank networks.

NOTE Confidence: 0.84117377

00:19:20.020 --> 00:19:22.696 And they are major players in

NOTE Confidence: 0.84117377

00:19:22.696 --> 00:19:24.480 the complex cancer surgery.

NOTE Confidence: 0.84117377

00:19:24.480 --> 00:19:28.470 Domain. Accountability.

NOTE Confidence: 0.84117377

00:19:28.470 --> 00:19:30.322 So for instance Yale.

NOTE Confidence: 0.84117377

00:19:30.322 --> 00:19:32.637 I has multiple sites within

NOTE Confidence: 0.84117377

00:19:32.637 --> 00:19:34.767 the state and we have.

NOTE Confidence: 0.84117377

00:19:34.770 --> 00:19:37.892 These are multiple affiliates and all of

NOTE Confidence: 0.84117377

00:19:37.892 --> 00:19:40.645 the networks around top ranked hospitals

NOTE Confidence: 0.84117377

00:19:40.645 --> 00:19:43.767 have a similar map of different states.

NOTE Confidence: 0.84117377

00:19:43.770 --> 00:19:46.014 They are comprised of

NOTE Confidence: 0.84117377

00:19:46.014 --> 00:19:47.697 very different hospitals.

NOTE Confidence: 0.84117377

00:19:47.700 --> 00:19:51.326 And the temptation is to identify with

NOTE Confidence: 0.84117377

00:19:51.326 --> 00:19:56.053 one of the hospitals that people at each

NOTE Confidence: 0.84117377

00:19:56.053 --> 00:20:00.180 of their hospitals feel that they had.

NOTE Confidence: 0.84117377

00:20:00.180 --> 00:20:02.644 Dentify with their hospital,

NOTE Confidence: 0.84117377

00:20:02.644 --> 00:20:05.108 but the reality is.

NOTE Confidence: 0.84117377

00:20:05.110 --> 00:20:08.302 The network is our identity and we have

NOTE Confidence: 0.84117377

00:20:08.302 --> 00:20:11.623 to embrace that and the we should have

NOTE Confidence: 0.84117377

00:20:11.623 --> 00:20:14.448 one set of expectations an for safety,

NOTE Confidence: 0.84117377

00:20:14.450 --> 00:20:14.923 effectiveness,

NOTE Confidence: 0.84117377

00:20:14.923 --> 00:20:17.761 timeliness and the patient experience should

NOTE Confidence: 0.84117377

00:20:17.761 --> 00:20:20.980 be the same across the entire network.

NOTE Confidence: 0.84117377

00:20:20.980 --> 00:20:23.260 And there are bodies that are

NOTE Confidence: 0.84117377

00:20:23.260 --> 00:20:25.945 starting to look at networks as

NOTE Confidence: 0.84117377

00:20:25.945 --> 00:20:28.660 individual entities to be accredited.

NOTE Confidence: 0.84117377

00:20:28.660 --> 00:20:31.378 So while I think there's a,

NOTE Confidence: 0.84117377

00:20:31.380 --> 00:20:33.762 there's a moral obligation to match

NOTE Confidence: 0.84117377

00:20:33.762 --> 00:20:36.800 outcomes and care with public expectations.

NOTE Confidence: 0.84117377

00:20:36.800 --> 00:20:40.022 There's likely going to become some

NOTE Confidence: 0.84117377

00:20:40.022 --> 00:20:42.965 oversight that will look at how

NOTE Confidence: 0.84117377

00:20:42.965 --> 00:20:45.757 well in the way in which care is

NOTE Confidence: 0.84117377

00:20:45.852 --> 00:20:48.720 delivered across these networks.

NOTE Confidence: 0.84117377

00:20:48.720 --> 00:20:51.246 The last is the ability the

NOTE Confidence: 0.84117377

00:20:51.246 --> 00:20:52.930 giving hospitals the ability

NOTE Confidence: 0.84117377

00:20:53.005 --> 00:20:54.957 to provide excellent care,

NOTE Confidence: 0.84117377

00:20:54.960 --> 00:20:56.744 so excellent care is

NOTE Confidence: 0.84117377

00:20:56.744 --> 00:20:58.528 comprised of three domains.

NOTE Confidence: 0.84117377

00:20:58.530 --> 00:21:00.646 First is infrastructure which

NOTE Confidence: 0.84117377

00:21:00.646 --> 00:21:03.820 are the resources in the support.

NOTE Confidence: 0.8826257

00:21:03.820 --> 00:21:05.520 And for this quite simply,

NOTE Confidence: 0.8826257

00:21:05.520 --> 00:21:07.210 the scenario has to match

NOTE Confidence: 0.8826257

00:21:07.210 --> 00:21:08.224 the hospital environment.

NOTE Confidence: 0.8826257

00:21:08.230 --> 00:21:10.478 If the hospital is not equipped to care

NOTE Confidence: 0.8826257

00:21:10.478 --> 00:21:12.837 for big surgery and the complications of

NOTE Confidence: 0.8826257

00:21:12.837 --> 00:21:15.350 that surgery or stem cell transplants,

NOTE Confidence: 0.8826257

00:21:15.350 --> 00:21:17.384 that's not where it should take

NOTE Confidence: 0.8826257

00:21:17.384 --> 00:21:18.740 place within the network.

NOTE Confidence: 0.8826257

00:21:18.740 --> 00:21:20.430 But there are other opportunities,

NOTE Confidence: 0.8826257

00:21:20.430 --> 00:21:22.150 so regionalization within a

NOTE Confidence: 0.8826257

00:21:22.150 --> 00:21:24.300 network I think is important.

NOTE Confidence: 0.8826257

00:21:24.300 --> 00:21:26.904 Process needs to be lead to consistent

NOTE Confidence: 0.8826257

00:21:26.904 --> 00:21:29.998 outcomes, but it also needs to be

NOTE Confidence: 0.8826257

00:21:29.998 --> 00:21:32.620 adaptable to the individual nuances.

NOTE Confidence: 0.8826257

00:21:32.620 --> 00:21:35.068 And I think the best way to think

NOTE Confidence: 0.8826257

00:21:35.068 --> 00:21:37.418 of process is to think of the user.

NOTE Confidence: 0.8826257

00:21:37.420 --> 00:21:38.920 So from the patient's perspective,

NOTE Confidence: 0.8826257

00:21:38.920 --> 00:21:41.062 and there's no better user perspective

NOTE Confidence: 0.8826257

00:21:41.062 --> 00:21:43.808 in my opinion than the users of Amazon.

NOTE Confidence: 0.8826257

00:21:43.810 --> 00:21:44.851 It's single access.

NOTE Confidence: 0.8826257

00:21:44.851 --> 00:21:47.280 It feels like it's one big store,

NOTE Confidence: 0.8826257

00:21:47.280 --> 00:21:49.116 although it's a whole bunch of

NOTE Confidence: 0.8826257

00:21:49.116 --> 00:21:50.340 different stores in different

NOTE Confidence: 0.8826257

00:21:50.401 --> 00:21:52.137 structures that are participating,

NOTE Confidence: 0.8826257

00:21:52.140 --> 00:21:54.569 it feels like it's close to home,

NOTE Confidence: 0.8826257

00:21:54.570 --> 00:21:56.300 but it's almost never close

NOTE Confidence: 0.8826257

00:21:56.300 --> 00:21:57.684 to where you live,

NOTE Confidence: 0.8826257

00:21:57.690 --> 00:21:59.776 and it does allow for the public

NOTE Confidence: 0.8826257

00:21:59.776 --> 00:22:01.849 to make an informed choice,

NOTE Confidence: 0.8826257

00:22:01.850 --> 00:22:04.349 and I think that's important is to

NOTE Confidence: 0.8826257

00:22:04.349 --> 00:22:06.807 allow people to have a choice that

NOTE Confidence: 0.8826257

00:22:06.807 --> 00:22:09.140 where they want to be cared for,

NOTE Confidence: 0.8826257

00:22:09.140 --> 00:22:13.298 and be informed as to the implications.

NOTE Confidence: 0.8826257

00:22:13.300 --> 00:22:14.180 Great network,

NOTE Confidence: 0.8826257

00:22:14.180 --> 00:22:17.260 feels like a great team and that

NOTE Confidence: 0.8826257

00:22:17.260 --> 00:22:20.498 includes not just surgeons but medical

NOTE Confidence: 0.8826257

00:22:20.498 --> 00:22:22.666 oncology and radiation oncology,

NOTE Confidence: 0.8826257

00:22:22.670 --> 00:22:26.331 but also the nurses and the technicians

NOTE Confidence: 0.8826257

00:22:26.331 --> 00:22:29.080 and the therapists you have to.

NOTE Confidence: 0.8826257

00:22:29.080 --> 00:22:32.026 You have to expand by programs.

NOTE Confidence: 0.8826257

00:22:32.030 --> 00:22:34.988 It's not just a Ala carte

NOTE Confidence: 0.8826257

00:22:34.988 --> 00:22:36.467 expansion through affiliation.

NOTE Confidence: 0.8826257

00:22:36.470 --> 00:22:39.375 You really have to program

NOTE Confidence: 0.8826257

00:22:39.375 --> 00:22:41.699 build throughout a network.

NOTE Confidence: 0.8826257

00:22:41.700 --> 00:22:43.292 And finally, Clinical Excellence.

NOTE Confidence: 0.8826257

00:22:43.292 --> 00:22:44.486 In my opinion,

NOTE Confidence: 0.8826257

00:22:44.490 --> 00:22:46.078 Clinical Excellence in staff

NOTE Confidence: 0.8826257

00:22:46.078 --> 00:22:48.063 is comprised of three things.

NOTE Confidence: 0.8826257

00:22:48.070 --> 00:22:51.010 The knowledge, skill, and judgment.

NOTE Confidence: 0.8826257

00:22:51.010 --> 00:22:53.206 And you need to have experts.

NOTE Confidence: 0.8826257

00:22:53.210 --> 00:22:55.779 So here is an example of experts.

NOTE Confidence: 0.8826257

00:22:55.780 --> 00:22:57.976 This is the division of thoracic

NOTE Confidence: 0.8826257

00:22:57.976 --> 00:22:59.074 surgery at Yale.

NOTE Confidence: 0.8826257

00:22:59.080 --> 00:23:01.632 But you have to keep in mind that

NOTE Confidence: 0.8826257

00:23:01.632 --> 00:23:04.098 there are experts out of outside of

NOTE Confidence: 0.8826257

00:23:04.098 --> 00:23:06.756 New Haven and we have to recognize

NOTE Confidence: 0.8826257

00:23:06.756 --> 00:23:08.836 and partner with these experts

NOTE Confidence: 0.8826257

00:23:08.836 --> 00:23:12.210 and and give them what they need

NOTE Confidence: 0.8826257

00:23:12.210 --> 00:23:14.330 to be clinically successful.

NOTE Confidence: 0.8826257

00:23:14.330 --> 00:23:17.466 And we can't just have physician experts.

NOTE Confidence: 0.8826257

00:23:17.470 --> 00:23:19.948 It's gotta be experts at every

NOTE Confidence: 0.8826257

00:23:19.948 --> 00:23:22.390 every touch point with patients,

NOTE Confidence: 0.8826257

00:23:22.390 --> 00:23:25.666 there has to be content expertise

NOTE Confidence: 0.8826257

00:23:25.666 --> 00:23:27.304 across the domain.

NOTE Confidence: 0.8826257

00:23:27.310 --> 00:23:29.920 Process may be our signature.

NOTE Confidence: 0.8826257

00:23:29.920 --> 00:23:31.900 But excellent people are our

NOTE Confidence: 0.8826257

00:23:31.900 --> 00:23:34.834 margin and we have to give people

NOTE Confidence: 0.8826257

00:23:34.834 --> 00:23:37.450 what they need to be successful.

NOTE Confidence: 0.8826257

00:23:37.450 --> 00:23:40.516 So when you think of a network.

NOTE Confidence: 0.8826257

00:23:40.520 --> 00:23:42.648 We have to take great care patients.

NOTE Confidence: 0.8826257

00:23:42.650 --> 00:23:43.499 There's no doubt,

NOTE Confidence: 0.8826257

00:23:43.499 --> 00:23:46.899 but we also have to be a great place to work.

NOTE Confidence: 0.8826257

00:23:46.900 --> 00:23:48.036 Every decision we make,

NOTE Confidence: 0.8826257

00:23:48.036 --> 00:23:50.100 we have to think about what are

NOTE Confidence: 0.8826257

00:23:50.100 --> 00:23:51.605 the implication on our patients

NOTE Confidence: 0.8826257

00:23:51.605 --> 00:23:53.589 and our ability to provide care.

NOTE Confidence: 0.8826257

00:23:53.590 --> 00:23:55.606 But we also have to think of

NOTE Confidence: 0.8826257

00:23:55.606 --> 00:23:57.176 the implications on the people

NOTE Confidence: 0.8826257

00:23:57.176 --> 00:23:58.456 who are working here,

NOTE Confidence: 0.8826257

00:23:58.460 --> 00:23:59.980 because if it were not,

NOTE Confidence: 0.8826257

00:23:59.980 --> 00:24:01.948 these two things simultaneously,

NOTE Confidence: 0.8826257

00:24:01.948 --> 00:24:04.408 it's not a sustainable model.

NOTE Confidence: 0.8826257

00:24:04.410 --> 00:24:06.690 I thank you and I'd be happy to

NOTE Confidence: 0.8826257

00:24:06.690 --> 00:24:08.320 take questions for 2.5 minutes.

NOTE Confidence: 0.836853

00:24:09.790 --> 00:24:11.665 Thanks Dan, that certainly was

NOTE Confidence: 0.836853

00:24:11.665 --> 00:24:14.508 stimulating and brings up a lot of issues.

NOTE Confidence: 0.836853

00:24:14.510 --> 00:24:16.946 Let me ask the first question

NOTE Confidence: 0.836853

00:24:16.946 --> 00:24:19.262 as questions are coming in so

NOTE Confidence: 0.836853

00:24:19.262 --> 00:24:21.404 it's sort of a two parter one.

NOTE Confidence: 0.836853

00:24:21.410 --> 00:24:23.220 When you operate at Bridgeport

NOTE Confidence: 0.836853

00:24:23.220 --> 00:24:24.668 or at New London,

NOTE Confidence: 0.836853

00:24:24.670 --> 00:24:27.302 is that an affiliation or is that as

NOTE Confidence: 0.836853

00:24:27.302 --> 00:24:30.120 if you're operating at the same center?

NOTE Confidence: 0.85960984

00:24:30.990 --> 00:24:34.080 So the we have the same

NOTE Confidence: 0.85960984

00:24:34.080 --> 00:24:35.625 expectations for outcomes,

NOTE Confidence: 0.85960984

00:24:35.630 --> 00:24:39.200 but the people that are involved in

NOTE Confidence: 0.85960984

00:24:39.200 --> 00:24:43.122 the care are we have any Mace who

NOTE Confidence: 0.85960984

00:24:43.122 --> 00:24:46.470 is spends time at both campuses,

NOTE Confidence: 0.85960984

00:24:46.470 --> 00:24:49.302 spends time at tumor board at

NOTE Confidence: 0.85960984

00:24:49.302 --> 00:24:53.290 this campus and uses a lot of the

NOTE Confidence: 0.85960984

00:24:53.290 --> 00:24:55.790 shared infrastructure so that the

NOTE Confidence: 0.85960984

00:24:55.790 --> 00:24:58.849 intake process is driven through.

NOTE Confidence: 0.85960984

00:24:58.850 --> 00:25:00.878 Here the Park Ave.

NOTE Confidence: 0.85960984

00:25:00.878 --> 00:25:03.920 Cure model is the same care

NOTE Confidence: 0.85960984

00:25:04.033 --> 00:25:07.120 model as it is in New Haven,

NOTE Confidence: 0.85960984

00:25:07.120 --> 00:25:08.605 so different people,

NOTE Confidence: 0.85960984

00:25:08.605 --> 00:25:11.575 but people that are tightly integrated

NOTE Confidence: 0.85960984

00:25:11.575 --> 00:25:13.789 into the New Haven infrastructure

NOTE Confidence: 0.85960984

00:25:13.789 --> 00:25:16.736 so that we believe we we deliver

NOTE Confidence: 0.85960984

00:25:16.736 --> 00:25:19.190 a very similar level of care.

NOTE Confidence: 0.85960984

00:25:19.190 --> 00:25:22.766 We just don't do the same things there.

NOTE Confidence: 0.85960984

00:25:22.770 --> 00:25:24.554 There are complex cases,

NOTE Confidence: 0.85960984

00:25:24.554 --> 00:25:26.784 we just don't do there.

NOTE Confidence: 0.8020786

00:25:27.880 --> 00:25:28.936 Thanks, I'm hurting.

NOTE Confidence: 0.8020786

00:25:28.936 --> 00:25:30.696 Chow asks from the VA.

NOTE Confidence: 0.8020786

00:25:30.700 --> 00:25:32.482 Is it possible that patients who

NOTE Confidence: 0.8020786

00:25:32.482 --> 00:25:34.605 ended up going to the community

NOTE Confidence: 0.8020786

00:25:34.605 --> 00:25:36.349 hospitals had fewer resources,

NOTE Confidence: 0.8020786

00:25:36.350 --> 00:25:37.678 an worse socioeconomic status?

NOTE Confidence: 0.8020786

00:25:37.678 --> 00:25:40.589 And that was the reason for the difference?

NOTE Confidence: 0.79570556

00:25:41.710 --> 00:25:47.350 The so when you adjust for so the

NOTE Confidence: 0.79570556

00:25:47.350 --> 00:25:53.266 NCD has income by zipcode, but the.

NOTE Confidence: 0.79570556

00:25:53.266 --> 00:25:59.080 When you look at when you just for race,

NOTE Confidence: 0.79570556

00:25:59.080 --> 00:26:00.880 adjust for income.

NOTE Confidence: 0.79570556

00:26:00.880 --> 00:26:02.680 Adjust for education.

NOTE Confidence: 0.79570556

00:26:02.680 --> 00:26:05.008 These factors still exist,

NOTE Confidence: 0.79570556

00:26:05.008 --> 00:26:09.423 so I think that those are certainly

NOTE Confidence: 0.79570556

00:26:09.423 --> 00:26:13.438 things that influence choice and.

NOTE Confidence: 0.79570556

00:26:13.440 --> 00:26:16.440 We have a lot of research in a

NOTE Confidence: 0.79570556

00:26:16.440 --> 00:26:19.013 separate vein as to why patients

NOTE Confidence: 0.79570556

00:26:19.013 --> 00:26:21.617 choose the hospital that they do

NOTE Confidence: 0.79570556

00:26:21.711 --> 00:26:24.987 an in a separate survey looked at

NOTE Confidence: 0.79570556

00:26:24.987 --> 00:26:27.543 barriers to traveling for safer care

NOTE Confidence: 0.79570556

00:26:27.543 --> 00:26:29.829 because it's pretty well known that

NOTE Confidence: 0.79570556

00:26:29.829 --> 00:26:32.020 people prefer safer environments,

NOTE Confidence: 0.79570556

00:26:32.020 --> 00:26:34.516 but they have barriers that cannot

NOTE Confidence: 0.79570556

00:26:34.516 --> 00:26:36.770 that prevent them from coming.

NOTE Confidence: 0.79570556

00:26:36.770 --> 00:26:38.498 We found that about,

NOTE Confidence: 0.79570556

00:26:38.498 --> 00:26:41.535 I think it was about 75% of

NOTE Confidence: 0.79570556

00:26:41.535 --> 00:26:43.760 people that wanted to come.

NOTE Confidence: 0.79570556

00:26:43.760 --> 00:26:46.854 Two, the flagship in a hypothetical model,

NOTE Confidence: 0.79570556

00:26:46.860 --> 00:26:48.072 had a barrier.

NOTE Confidence: 0.79570556

00:26:48.072 --> 00:26:50.092 The interesting thing is when

NOTE Confidence: 0.79570556

00:26:50.092 --> 00:26:52.179 we looked at facilitators,

NOTE Confidence: 0.79570556

00:26:52.180 --> 00:26:55.716 it was almost always a low cost facilitator,

NOTE Confidence: 0.79570556

00:26:55.720 --> 00:26:58.583 meaning it was a ride or it

NOTE Confidence: 0.79570556

00:26:58.583 --> 00:27:01.919 was a night to stay or parking,

NOTE Confidence: 0.79570556

00:27:01.920 --> 00:27:06.104 or but it wasn't a huge thing that

NOTE Confidence: 0.79570556

00:27:06.104 --> 00:27:09.999 was keeping them from being able to.

NOTE Confidence: 0.79570556

00:27:10.000 --> 00:27:13.094 Jetta come we are our new line

NOTE Confidence: 0.79570556

00:27:13.094 --> 00:27:15.542 of investigation is looking on

NOTE Confidence: 0.79570556

00:27:15.542 --> 00:27:18.107 the impact of Medicaid expansion

NOTE Confidence: 0.79570556

00:27:18.107 --> 00:27:20.360 on cancer care and so.

NOTE Confidence: 0.79570556

00:27:20.360 --> 00:27:22.355 I think that's also ties into that,

NOTE Confidence: 0.79570556

00:27:22.360 --> 00:27:24.648 so we should have more for you on

NOTE Confidence: 0.82296413

00:27:24.650 --> 00:27:26.198 that front. In the future we

NOTE Confidence: 0.82296413

00:27:26.198 --> 00:27:28.079 have time for one more question.

NOTE Confidence: 0.82296413

00:27:28.080 --> 00:27:29.928 The questioner asks this time of affiliation

NOTE Confidence: 0.82296413

00:27:29.928 --> 00:27:31.510 overtime lead to improved outcome.

NOTE Confidence: 0.82296413

00:27:31.510 --> 00:27:33.386 Also for the Children's Hospital and I'll

NOTE Confidence: 0.82296413

00:27:33.386 --> 00:27:35.611 just add you showed a slide where you

NOTE Confidence: 0.82296413

00:27:35.611 --> 00:27:37.654 compared expertise at the main center and

NOTE Confidence: 0.82296413

00:27:37.654 --> 00:27:39.520 then you showed care center physicians.

NOTE Confidence: 0.82296413

00:27:39.520 --> 00:27:41.704 But you were showing surgeons in one picture

NOTE Confidence: 0.82296413

00:27:41.704 --> 00:27:43.527 and medical oncologists in the other.

NOTE Confidence: 0.82296413

00:27:43.530 --> 00:27:45.392 So is this hold for all disciplines

NOTE Confidence: 0.82296413

00:27:45.392 --> 00:27:47.530 or is this just for surgery? Little

NOTE Confidence: 0.82296413

00:27:47.530 --> 00:27:52.240 confusing. I think it I think that. So.

NOTE Confidence: 0.82296413

00:27:52.240 --> 00:27:55.256 I will say TuneIn on Friday to surgery

NOTE Confidence: 0.82296413

00:27:55.256 --> 00:27:57.870 grand rounds where I have an hour and

NOTE Confidence: 0.82296413

00:27:57.870 --> 00:28:00.537 I'm going to go into a lot of this.

NOTE Confidence: 0.82296413

00:28:00.540 --> 00:28:03.108 But I one trick is to answer the

NOTE Confidence: 0.82296413

00:28:03.108 --> 00:28:05.187 question you have the answer to.

NOTE Confidence: 0.82296413

00:28:05.190 --> 00:28:07.838 So I'm going to show you very quickly.

NOTE Confidence: 0.82296413

00:28:07.840 --> 00:28:09.760 We had 144 affiliations that took

NOTE Confidence: 0.82296413

00:28:09.760 --> 00:28:11.500 place during our study period.

NOTE Confidence: 0.82296413

00:28:11.500 --> 00:28:13.957 We look the year before and after just to

NOTE Confidence: 0.82296413

00:28:13.957 --> 00:28:16.479 see does affiliation make things better,

NOTE Confidence: 0.82296413

00:28:16.480 --> 00:28:19.459 but top bar the dark one is pre affiliation.

NOTE Confidence: 0.82296413

00:28:19.460 --> 00:28:21.698 The lighter one is after affiliation.

NOTE Confidence: 0.82296413

00:28:21.700 --> 00:28:24.836 So and then these are just the affiliates.

NOTE Confidence: 0.82296413

00:28:24.840 --> 00:28:27.332 And then we also look at non

NOTE Confidence: 0.82296413

00:28:27.332 --> 00:28:29.539 affiliates and see what happened.

NOTE Confidence: 0.82296413

00:28:29.540 --> 00:28:32.468 So if you look at the hospital beds

NOTE Confidence: 0.82296413

00:28:32.468 --> 00:28:35.027 they got a little bit smaller.

NOTE Confidence: 0.82296413

00:28:35.030 --> 00:28:37.354 If you look at the OC accreditation

NOTE Confidence: 0.82296413

00:28:37.354 --> 00:28:40.704 they got they picked up more of the

NOTE Confidence: 0.82296413

00:28:40.704 --> 00:28:42.075 affiliates gained accreditation,

NOTE Confidence: 0.82296413

00:28:42.080 --> 00:28:44.481 but you also saw an effect like

NOTE Confidence: 0.82296413

00:28:44.481 --> 00:28:46.789 that in the non affiliates.

NOTE Confidence: 0.82296413

00:28:46.790 --> 00:28:49.726 When you look at the number of complex

NOTE Confidence: 0.82296413

00:28:49.726 --> 00:28:52.509 surgeries the affiliates got busier after.

NOTE Confidence: 0.82296413

00:28:52.510 --> 00:28:52.946 Affiliation,

NOTE Confidence: 0.82296413

00:28:52.946 --> 00:28:56.434 and that didn't happen in the non affiliates,

NOTE Confidence: 0.82296413

00:28:56.440 --> 00:28:58.625 so the the affiliation increased

NOTE Confidence: 0.82296413

00:28:58.625 --> 00:28:59.936 their market share.

NOTE Confidence: 0.82296413

00:28:59.940 --> 00:29:02.900 But if you look at 90 day mortality

NOTE Confidence: 0.82296413

00:29:02.900 --> 00:29:05.179 before and after affiliation,

NOTE Confidence: 0.82296413

00:29:05.180 --> 00:29:06.724 there's a big drop,

NOTE Confidence: 0.82296413

00:29:06.724 --> 00:29:08.654 so the affiliates got safer

NOTE Confidence: 0.82296413

00:29:08.654 --> 00:29:09.990 after affiliation,

NOTE Confidence: 0.82296413

00:29:09.990 --> 00:29:12.606 so that was really encouraging unfortunately,

NOTE Confidence: 0.82296413

00:29:12.610 --> 00:29:13.048 however.

NOTE Confidence: 0.82296413

00:29:13.048 --> 00:29:15.238 And the non affiliates also

NOTE Confidence: 0.82296413

00:29:15.238 --> 00:29:17.570 dropped during that time period.

NOTE Confidence: 0.82296413

00:29:17.570 --> 00:29:20.181 And when you look in a difference

NOTE Confidence: 0.82296413

00:29:20.181 --> 00:29:21.300 in difference model,

NOTE Confidence: 0.82296413

00:29:21.300 --> 00:29:22.792 there actually really the

NOTE Confidence: 0.82296413

00:29:22.792 --> 00:29:24.657 change overtime is very similar.

NOTE Confidence: 0.82296413

00:29:24.660 --> 00:29:26.898 We could find no effect that

NOTE Confidence: 0.82296413

00:29:26.898 --> 00:29:28.390 affiliation made hospitals better.

NOTE Confidence: 0.82296413

00:29:28.390 --> 00:29:30.819 It seems that the top ranked hospitals

NOTE Confidence: 0.82296413

00:29:30.819 --> 00:29:33.240 choose to affiliate with better hospitals,

NOTE Confidence: 0.82296413

00:29:33.240 --> 00:29:35.844 so affiliates are better than non affiliates.

NOTE Confidence: 0.82296413

00:29:35.850 --> 00:29:38.293 But the active affiliation in these 144

NOTE Confidence: 0.82296413

00:29:38.293 --> 00:29:40.698 hospitals did not make anything better.

NOTE Confidence: 0.82296413

00:29:40.700 --> 00:29:41.072 OK,

NOTE Confidence: 0.82296413

00:29:41.072 --> 00:29:41.444 well,

NOTE Confidence: 0.82296413

00:29:41.444 --> 00:29:42.560 that will have

NOTE Confidence: 0.8485389

00:29:42.560 --> 00:29:44.520 to be the last word.

NOTE Confidence: 0.8485389

00:29:44.520 --> 00:29:47.238 Certainly we need to come to some more of

NOTE Confidence: 0.8485389

00:29:47.238 --> 00:29:49.845 your lectures and talk about this more,

NOTE Confidence: 0.8485389

00:29:49.850 --> 00:29:52.223 but you know, certainly this is vitally

NOTE Confidence: 0.8485389

00:29:52.223 --> 00:29:53.906 important for patients and physicians

NOTE Confidence: 0.8485389

00:29:53.906 --> 00:29:55.506 like to understand these data.

NOTE Confidence: 0.8485389

00:29:55.506 --> 00:29:57.176 Thank you, Dan. Thank you.

NOTE Confidence: 0.8485389

00:29:57.176 --> 00:30:00.318 OK, well we have a second talk today and.

NOTE Confidence: 0.8485389

00:30:00.320 --> 00:30:02.660 I'm also a colleague and friend,

NOTE Confidence: 0.8485389

00:30:02.660 --> 00:30:03.390 Veronica Chang,

NOTE Confidence: 0.8485389

00:30:03.390 --> 00:30:05.215 Professor of neurosurgery who's going

NOTE Confidence: 0.8485389

00:30:05.215 --> 00:30:08.022 to talk to us about challenges in

NOTE Confidence: 0.8485389

00:30:08.022 --> 00:30:09.674 brain cancer metastases management.

NOTE Confidence: 0.8485389

00:30:09.680 --> 00:30:12.382 I have a little blurb here also

NOTE Confidence: 0.8485389

00:30:12.382 --> 00:30:13.970 from Renee for her.

NOTE Confidence: 0.8485389

00:30:13.970 --> 00:30:16.700 If I can get it up here.

NOTE Confidence: 0.8485389

00:30:16.700 --> 00:30:18.968 Doctor Chang is a professor of

NOTE Confidence: 0.8485389

00:30:18.968 --> 00:30:20.480 neurosurgery and radiation oncology

NOTE Confidence: 0.8485389

00:30:20.543 --> 00:30:22.123 and director of stereotactic

NOTE Confidence: 0.8485389

00:30:22.123 --> 00:30:24.493 radiosurgery and the Gamma Knife Center.

NOTE Confidence: 0.8485389

00:30:24.500 --> 00:30:26.780 She received her medical degree from

NOTE Confidence: 0.8485389

00:30:26.780 --> 00:30:29.599 the University of WA and completed her

NOTE Confidence: 0.8485389

00:30:29.599 --> 00:30:32.047 residency at Yale School of Medicine.

NOTE Confidence: 0.8485389

00:30:32.050 --> 00:30:34.890 Her fellowship at Johns Hopkins.

NOTE Confidence: 0.8485389

00:30:34.890 --> 00:30:37.690 Veronica leads in a row surgical arm of

NOTE Confidence: 0.8485389

00:30:37.690 --> 00:30:40.389 the brain metastasis program at Yale.

NOTE Confidence: 0.8485389

00:30:40.390 --> 00:30:43.148 This is a program that's comprised of

NOTE Confidence: 0.8485389

00:30:43.148 --> 00:30:44.774 Multidisciplinary Physicians in the

NOTE Confidence: 0.8485389

00:30:44.774 --> 00:30:46.679 specialty areas of medical oncology,

NOTE Confidence: 0.8485389

00:30:46.680 --> 00:30:47.862 radiation oncology, neurosurgery,

NOTE Confidence: 0.8485389

00:30:47.862 --> 00:30:49.099 radiology, pathology, neurooncology.

NOTE Confidence: 0.8485389

00:30:49.099 --> 00:30:51.793 This is the nationally ranked unique

NOTE Confidence: 0.8485389

00:30:51.793 --> 00:30:53.589 program specifically dedicated to

NOTE Confidence: 0.8485389

00:30:53.589 --> 00:30:55.165 coordinating clinical management of

NOTE Confidence: 0.8485389

00:30:55.165 --> 00:30:57.135 patients with brain metastases as

NOTE Confidence: 0.8485389

00:30:57.193 --> 00:30:59.089 well as the performance of brain

NOTE Confidence: 0.8485389

00:30:59.089 --> 00:31:00.826 science of science, basic science,

NOTE Confidence: 0.8485389

00:31:00.826 --> 00:31:02.398 translation and clinical trials.

NOTE Confidence: 0.8485389

00:31:02.400 --> 00:31:05.640 She's an active member of our long sport.

NOTE Confidence: 0.8485389

00:31:05.640 --> 00:31:07.456 Saronic it's a pleasure to have you here.

NOTE Confidence: 0.8485389

00:31:07.460 --> 00:31:09.091 Today we started a few minutes late

NOTE Confidence: 0.8485389

00:31:09.091 --> 00:31:11.109 so I won't cut you short at the end.

NOTE Confidence: 0.8485389

00:31:11.110 --> 00:31:12.706 We'll make sure we have time for

NOTE Confidence: 0.8485389

00:31:12.706 --> 00:31:14.298 questions as well. The floor is yours.

NOTE Confidence: 0.702726092

00:31:15.330 --> 00:31:20.328 OK thanks Ray. How? Sorry, hang on a second.

NOTE Confidence: 0.8352323

00:31:33.010 --> 00:31:34.360 OK, does that look alright?

NOTE Confidence: 0.85832

00:31:36.870 --> 00:31:40.246 OK, so thank you Roy for that introduction.

NOTE Confidence: 0.77872515

00:31:42.530 --> 00:31:48.124 That was very kind so. I'm going to.

NOTE Confidence: 0.77872515

00:31:48.124 --> 00:31:49.896 My talk is going to be a little

NOTE Confidence: 0.77872515

00:31:49.896 --> 00:31:51.546 bit different than dance today.

NOTE Confidence: 0.77872515

00:31:51.550 --> 00:31:53.600 That's not at all that

NOTE Confidence: 0.77872515

00:31:53.600 --> 00:31:54.830 would be uncomfortable.

NOTE Confidence: 0.77872515

00:31:54.830 --> 00:31:57.730 And before I start,

NOTE Confidence: 0.77872515

00:31:57.730 --> 00:32:00.630 these are my disclosures.

NOTE Confidence: 0.77872515

00:32:00.630 --> 00:32:02.480 So as you all know,

NOTE Confidence: 0.77872515

00:32:02.480 --> 00:32:05.440 brain tester sees code about 20 to 40%

NOTE Confidence: 0.77872515

00:32:05.440 --> 00:32:08.740 of patients with metastatic cancer.

NOTE Confidence: 0.77872515

00:32:08.740 --> 00:32:11.140 And so you can see on the left back when

NOTE Confidence: 0.77872515

00:32:11.200 --> 00:32:13.360 I started treating brain metastases,

NOTE Confidence: 0.77872515

00:32:13.360 --> 00:32:16.720 we only thought that a few types of

NOTE Confidence: 0.77872515

00:32:16.720 --> 00:32:19.198 cancer really went to the brain.

NOTE Confidence: 0.77872515

00:32:19.200 --> 00:32:21.608 This is obviously changed over the years,

NOTE Confidence: 0.77872515

00:32:21.610 --> 00:32:24.211 and so you can see on the right now

NOTE Confidence: 0.77872515

00:32:24.211 --> 00:32:26.303 that pretty much almost any cancer

NOTE Confidence: 0.77872515

00:32:26.303 --> 00:32:29.371 type can go to the brain because while

NOTE Confidence: 0.77872515

00:32:29.371 --> 00:32:31.860 about 10% of brain metastases can be

NOTE Confidence: 0.77872515

00:32:31.860 --> 00:32:33.990 found at initial diagnosis of cancer,

NOTE Confidence: 0.77872515

00:32:33.990 --> 00:32:35.710 by far the vast majority,

NOTE Confidence: 0.77872515

00:32:35.710 --> 00:32:38.254 so 90% developed later in the course of

NOTE Confidence: 0.77872515

00:32:38.254 --> 00:32:40.869 cancer and as patients are living longer,

NOTE Confidence: 0.77872515

00:32:40.870 --> 00:32:43.470 I think the brain metastasis

NOTE Confidence: 0.77872515

00:32:43.470 --> 00:32:46.070 problem is becoming more prevalent.

NOTE Confidence: 0.77872515

00:32:46.070 --> 00:32:47.967 And so over the last two decades,

NOTE Confidence: 0.77872515

00:32:47.970 --> 00:32:49.225 then significant changes have occurred

NOTE Confidence: 0.77872515

00:32:49.225 --> 00:32:50.950 in the management of brain metastases.

NOTE Confidence: 0.77872515

00:32:50.950 --> 00:32:53.064 And while there have been an increasing

NOTE Confidence: 0.77872515

00:32:53.064 --> 00:32:54.838 number of successes in treatment and

NOTE Confidence: 0.77872515

00:32:54.838 --> 00:32:56.464 want to concentrate today on some

NOTE Confidence: 0.77872515

00:32:56.464 --> 00:32:58.402 of the challenges that have arisen

NOTE Confidence: 0.77872515

00:32:58.402 --> 00:33:00.012 from these changes in paradigm.

NOTE Confidence: 0.77872515

00:33:00.020 --> 00:33:02.631 And so the biggest change in brain

NOTE Confidence: 0.77872515

00:33:02.631 --> 00:33:04.513 metastasis management has been the

NOTE Confidence: 0.77872515

00:33:04.513 --> 00:33:06.253 move from whole brain radiation

NOTE Confidence: 0.77872515

00:33:06.253 --> 00:33:08.360 therapy with or without surgery,

NOTE Confidence: 0.77872515

00:33:08.360 --> 00:33:10.726 which was supported by the petrol studies

NOTE Confidence: 0.77872515

00:33:10.726 --> 00:33:13.471 in the 1980s to the incorporation of

NOTE Confidence: 0.77872515

00:33:13.471 --> 00:33:15.556 brain radiosurgery first as salvage,

NOTE Confidence: 0.77872515

00:33:15.560 --> 00:33:18.416 then for a few lesions as first line

NOTE Confidence: 0.77872515

00:33:18.416 --> 00:33:20.445 treatment and then for radiosurgery

NOTE Confidence: 0.77872515

00:33:20.445 --> 00:33:23.343 to pretty much everything and now to

NOTE Confidence: 0.77872515

00:33:23.417 --> 00:33:26.501 a combination of CNS penetrating drugs

NOTE Confidence: 0.77872515

00:33:26.501 --> 00:33:28.557 in combination with radiosurgery.

NOTE Confidence: 0.77872515

00:33:28.560 --> 00:33:30.248 And I know that many of you are

NOTE Confidence: 0.77872515

00:33:30.248 --> 00:33:31.330 familiar with radiosurgery.

NOTE Confidence: 0.77872515

00:33:31.330 --> 00:33:33.346 But for those of you who are not,

NOTE Confidence: 0.77872515

00:33:33.350 --> 00:33:34.814 gamma knife is the machine that

NOTE Confidence: 0.77872515

00:33:34.814 --> 00:33:36.942 we use here at our institution for

NOTE Confidence: 0.77872515

00:33:36.942 --> 00:33:38.767 the delivery of brain radiosurgery.

NOTE Confidence: 0.77872515

00:33:38.770 --> 00:33:40.816 For the majority of our patients,

NOTE Confidence: 0.77872515

00:33:40.820 --> 00:33:42.800 gamma knife still requires the

NOTE Confidence: 0.77872515

00:33:42.800 --> 00:33:44.384 application of an immobilizing

NOTE Confidence: 0.77872515

00:33:44.384 --> 00:33:46.367 headframe that then it allows the

NOTE Confidence: 0.77872515

00:33:46.367 --> 00:33:48.260 placement of each metastasis in the

NOTE Confidence: 0.77872515

00:33:48.260 --> 00:33:50.353 into the middle of the radiation beams,

NOTE Confidence: 0.77872515

00:33:50.360 --> 00:33:52.514 which enables the delivery of a

NOTE Confidence: 0.77872515

00:33:52.514 --> 00:33:54.321 very accurately targeted high dose

NOTE Confidence: 0.77872515

00:33:54.321 --> 00:33:56.463 of radiation in a single day to

NOTE Confidence: 0.77872515

00:33:56.463 --> 00:33:58.177 single fraction to target lesions

NOTE Confidence: 0.77872515

00:33:58.177 --> 00:33:59.907 almost anywhere in the brain.

NOTE Confidence: 0.7196441

00:34:02.610 --> 00:34:06.744 And also sorry. And so,

NOTE Confidence: 0.7196441

00:34:06.744 --> 00:34:08.766 with all our radiosurgery capable machines,

NOTE Confidence: 0.7196441

00:34:08.770 --> 00:34:11.392 how about we now also have

NOTE Confidence: 0.7196441

00:34:11.392 --> 00:34:12.703 mask based capability?

NOTE Confidence: 0.7196441

00:34:12.710 --> 00:34:15.134 And so, while accuracy of treatment

NOTE Confidence: 0.7196441

00:34:15.134 --> 00:34:16.750 and long treatment tolerability

NOTE Confidence: 0.7196441

00:34:16.811 --> 00:34:18.437 is still best in the frame,

NOTE Confidence: 0.7196441

00:34:18.440 --> 00:34:20.588 the mask is further extent expanded.

NOTE Confidence: 0.7196441

00:34:20.590 --> 00:34:22.334 Our capability to treat

NOTE Confidence: 0.7196441

00:34:22.334 --> 00:34:24.078 patients like this one.

NOTE Confidence: 0.7196441

00:34:24.080 --> 00:34:26.237 And so this is a 64 year old lady who was

NOTE Confidence: 0.7196441

00:34:26.237 --> 00:34:28.109 just recently diagnosed with lung cancer.

NOTE Confidence: 0.7196441

00:34:28.110 --> 00:34:30.138 Some of you may remember her.

NOTE Confidence: 0.7196441

00:34:30.140 --> 00:34:32.222 And this patient would previously have

NOTE Confidence: 0.7196441

00:34:32.222 --> 00:34:34.277 had whole brain radiation therapy because

NOTE Confidence: 0.7196441

00:34:34.277 --> 00:34:36.709 of the large number and size of lesions.

NOTE Confidence: 0.7196441

00:34:36.710 --> 00:34:39.046 Today what we can do is break the

NOTE Confidence: 0.7196441

00:34:39.046 --> 00:34:41.120 radiosurgery up into three to five days.

NOTE Confidence: 0.7196441

00:34:41.120 --> 00:34:42.590 So on the first day,

NOTE Confidence: 0.7196441

00:34:42.590 --> 00:34:44.606 the frame is applied and all the

NOTE Confidence: 0.7196441

00:34:44.606 --> 00:34:46.566 smaller lesions are treated so you can

NOTE Confidence: 0.7196441

00:34:46.566 --> 00:34:48.510 see that there's quite a few lesions

NOTE Confidence: 0.7196441

00:34:48.510 --> 00:34:51.118 that are less than 3 centimeters in diameter,

NOTE Confidence: 0.7196441

00:34:51.120 --> 00:34:53.360 and all of these are treated in

NOTE Confidence: 0.7196441

00:34:53.360 --> 00:34:55.390 single fraction as they would be

NOTE Confidence: 0.7196441

00:34:55.390 --> 00:34:57.394 for most of their other patients.

NOTE Confidence: 0.7196441

00:34:57.400 --> 00:34:59.584 Then a plan is made for the larger

NOTE Confidence: 0.7196441

00:34:59.584 --> 00:35:02.226 lesions in the first of three or five

NOTE Confidence: 0.7196441

00:35:02.226 --> 00:35:04.440 fractions can be administered in the frame,

NOTE Confidence: 0.7196441

00:35:04.440 --> 00:35:06.883 and the patient comes back for 204

NOTE Confidence: 0.7196441

00:35:06.883 --> 00:35:08.687 more treatments than performed in

NOTE Confidence: 0.7196441

00:35:08.687 --> 00:35:11.102 the mask to only the larger lesions.

NOTE Confidence: 0.7196441

00:35:11.110 --> 00:35:13.000 And so it's gotten very complicated

NOTE Confidence: 0.7196441

00:35:13.000 --> 00:35:14.260 from a planning standpoint,

NOTE Confidence: 0.7196441

00:35:14.260 --> 00:35:16.619 but this often allows us to avoid

NOTE Confidence: 0.7196441

00:35:16.619 --> 00:35:18.350 whole radiation therapy altogether.

NOTE Confidence: 0.7196441

00:35:18.350 --> 00:35:21.409 And it means that radiation can be

NOTE Confidence: 0.7196441

00:35:21.409 --> 00:35:23.319 completed usually within a week.

NOTE Confidence: 0.7196441

00:35:23.320 --> 00:35:25.462 And so this may seem a little

NOTE Confidence: 0.7196441

00:35:25.462 --> 00:35:26.820 crazy on our part,

NOTE Confidence: 0.7196441

00:35:26.820 --> 00:35:28.728 but parallel to our institutional practice,

NOTE Confidence: 0.7196441

00:35:28.730 --> 00:35:30.420 the national use of radiosurgery

NOTE Confidence: 0.7196441

00:35:30.420 --> 00:35:32.110 has grown exponentially as well

NOTE Confidence: 0.7196441

00:35:32.172 --> 00:35:34.020 as you can see from these grants

NOTE Confidence: 0.7196441

00:35:34.020 --> 00:35:35.719 from the National Cancer database.

NOTE Confidence: 0.7196441

00:35:35.720 --> 00:35:36.940 So on the left,

NOTE Confidence: 0.7196441

00:35:36.940 --> 00:35:39.539 obviously is what we used to do before,

NOTE Confidence: 0.7196441

00:35:39.540 --> 00:35:41.524 and then on the right you can see

NOTE Confidence: 0.7196441

00:35:41.524 --> 00:35:43.455 that not only is ready yesterday

NOTE Confidence: 0.7196441

00:35:43.455 --> 00:35:45.513 being used as first line treatment

NOTE Confidence: 0.7196441

00:35:45.573 --> 00:35:47.169 for patients living longer,

NOTE Confidence: 0.7196441

00:35:47.170 --> 00:35:48.755 and often undergoing second and

NOTE Confidence: 0.7196441

00:35:48.755 --> 00:35:50.023 third treatments with radiosurgery,

NOTE Confidence: 0.7196441

00:35:50.030 --> 00:35:51.938 and so its use is escalated

NOTE Confidence: 0.7196441

00:35:51.938 --> 00:35:53.210 or around the country.

NOTE Confidence: 0.83142716

00:35:56.520 --> 00:35:58.823 And so not only then do we

NOTE Confidence: 0.83142716

00:35:58.823 --> 00:36:00.168 increasingly see treatment plans

NOTE Confidence: 0.83142716

00:36:00.168 --> 00:36:02.488 that look like this one on the left,

NOTE Confidence: 0.83142716

00:36:02.490 --> 00:36:04.994 where the blue dots are the first treatment,

NOTE Confidence: 0.83142716

00:36:05.000 --> 00:36:06.570 yellow dots, the second treatment,

NOTE Confidence: 0.83142716

00:36:06.570 --> 00:36:08.322 and so each time the patient

NOTE Confidence: 0.83142716

00:36:08.322 --> 00:36:10.020 comes is more lesions treated,

NOTE Confidence: 0.83142716

00:36:10.020 --> 00:36:12.216 but to the right you can see in every

NOTE Confidence: 0.83142716

00:36:12.216 --> 00:36:14.136 increasing number of radiosurgery capable

NOTE Confidence: 0.83142716

00:36:14.136 --> 00:36:16.302 machines being developed, and so on.

NOTE Confidence: 0.83142716

00:36:16.302 --> 00:36:18.186 The top is the cyber knife,

NOTE Confidence: 0.83142716

00:36:18.190 --> 00:36:19.912 which was the first iteration outside

NOTE Confidence: 0.83142716

00:36:19.912 --> 00:36:22.463 the gamma knife in the middle of picture

NOTE Confidence: 0.83142716

00:36:22.463 --> 00:36:24.143 is Linux based radiosurgery machines.

NOTE Confidence: 0.83142716

00:36:24.150 --> 00:36:26.846 So they look very much like our standard.

NOTE Confidence: 0.83142716

00:36:26.850 --> 00:36:28.434 Radiation machines then on

NOTE Confidence: 0.83142716

00:36:28.434 --> 00:36:30.414 the bottom is the ZAP.

NOTE Confidence: 0.83142716

00:36:30.420 --> 00:36:32.646 Which is the newest self shielded

NOTE Confidence: 0.83142716

00:36:32.646 --> 00:36:34.579 machine that you might start

NOTE Confidence: 0.83142716

00:36:34.579 --> 00:36:36.459 seeing coming on the market?

NOTE Confidence: 0.83142716

00:36:36.460 --> 00:36:39.058 And so the question arises then,

NOTE Confidence: 0.83142716

00:36:39.060 --> 00:36:41.310 as radiosurgery becomes

NOTE Confidence: 0.83142716

00:36:41.310 --> 00:36:42.810 increasingly available.

NOTE Confidence: 0.83142716

00:36:42.810 --> 00:36:45.395 Many lesions is too many

NOTE Confidence: 0.83142716

00:36:45.395 --> 00:36:47.463 to treat with radiosurgery.

NOTE Confidence: 0.83142716

00:36:47.470 --> 00:36:48.368 And so,

NOTE Confidence: 0.83142716

00:36:48.368 --> 00:36:50.613 based on survival literature which

NOTE Confidence: 0.83142716

00:36:50.613 --> 00:36:53.489 we're realizing now is not great for us,

NOTE Confidence: 0.83142716

00:36:53.490 --> 00:36:55.134 large popularity population data

NOTE Confidence: 0.83142716

00:36:55.134 --> 00:36:58.064 suggests that there is no upper limit

NOTE Confidence: 0.83142716

00:36:58.064 --> 00:37:00.024 to when to consider radiosurgery

NOTE Confidence: 0.83142716

00:37:00.024 --> 00:37:02.432 since there are groups that that

NOTE Confidence: 0.83142716

00:37:02.432 --> 00:37:04.362 show that median overall survival

NOTE Confidence: 0.83142716

00:37:04.362 --> 00:37:07.170 durations can be in the order of 18

NOTE Confidence: 0.83142716

00:37:07.170 --> 00:37:09.840 to 20 months in patients with greater

NOTE Confidence: 0.83142716

00:37:09.840 --> 00:37:13.123 than 30 metastases treated at one sitting.

NOTE Confidence: 0.8473731

00:37:15.230 --> 00:37:17.030 From the neurocognition outcome standpoint,

NOTE Confidence: 0.8473731

00:37:17.030 --> 00:37:20.252 which is where we'd like to be without data,

NOTE Confidence: 0.8473731

00:37:20.260 --> 00:37:22.050 there is no guidance here,

NOTE Confidence: 0.8473731

00:37:22.050 --> 00:37:23.478 since the largest randomized

NOTE Confidence: 0.8473731

00:37:23.478 --> 00:37:25.263 study involved only patients with

NOTE Confidence: 0.8473731

00:37:25.263 --> 00:37:27.078 one to three brain metastases,

NOTE Confidence: 0.8473731

00:37:27.080 --> 00:37:31.152 and this study only showed that whole brain

NOTE Confidence: 0.8473731

00:37:31.152 --> 00:37:34.097 radiation therapy was bad for cognition.

NOTE Confidence: 0.8473731

00:37:34.100 --> 00:37:36.516 And so the only data that we have

NOTE Confidence: 0.8473731

00:37:36.516 --> 00:37:39.433 to go on is this small study that

NOTE Confidence: 0.8473731

00:37:39.433 --> 00:37:41.821 was done which tried to correlate

NOTE Confidence: 0.8473731

00:37:41.821 --> 00:37:44.691 the number of lesions with how much

NOTE Confidence: 0.8473731

00:37:44.691 --> 00:37:46.855 dose the whole brain might achieve

NOTE Confidence: 0.8473731

00:37:46.855 --> 00:37:49.509 received in a single day of treatment.

NOTE Confidence: 0.8473731

00:37:49.510 --> 00:37:52.446 And so we believe that for greyhole rain

NOTE Confidence: 0.8473731

00:37:52.446 --> 00:37:55.368 dose, which is marked on the left axis

NOTE Confidence: 0.8473731

00:37:55.368 --> 00:37:57.219 correlates probably about 25 lesions,

NOTE Confidence: 0.8473731

00:37:57.220 --> 00:38:00.286 which is the current our current

NOTE Confidence: 0.8473731

00:38:00.286 --> 00:38:02.330 upper limit of safety.

NOTE Confidence: 0.8473731

00:38:02.330 --> 00:38:02.662 Unfortunately,

NOTE Confidence: 0.8473731

00:38:02.662 --> 00:38:05.318 there's very little other data to guide us,

NOTE Confidence: 0.8473731

00:38:05.320 --> 00:38:07.644 and so it's important not only to

NOTE Confidence: 0.8473731

00:38:07.644 --> 00:38:09.623 remember that number of lesions treated

NOTE Confidence: 0.8473731

00:38:09.623 --> 00:38:12.330 needs to be taken in context of patient

NOTE Confidence: 0.8473731

00:38:12.330 --> 00:38:14.790 expected survival and cognitive reserve.

NOTE Confidence: 0.8473731

00:38:14.790 --> 00:38:15.480 But also,

NOTE Confidence: 0.8473731

00:38:15.480 --> 00:38:16.860 patient ability to tolerate,

NOTE Confidence: 0.8473731

00:38:16.860 --> 00:38:18.585 delete the treatment and so

NOTE Confidence: 0.8473731

00:38:18.585 --> 00:38:19.965 treat in 25 lesions,

NOTE Confidence: 0.8473731

00:38:19.970 --> 00:38:21.910 translates into three hours of

NOTE Confidence: 0.8473731

00:38:21.910 --> 00:38:23.850 physics planning while the patient

NOTE Confidence: 0.8473731

00:38:23.919 --> 00:38:25.641 sits and waits with the headframe

NOTE Confidence: 0.8473731

00:38:25.641 --> 00:38:27.544 on and then an additional three

NOTE Confidence: 0.8473731

00:38:27.544 --> 00:38:29.626 more hours of having one's head

NOTE Confidence: 0.8473731

00:38:29.626 --> 00:38:31.508 locked in the machine for treatment,

NOTE Confidence: 0.8473731

00:38:31.508 --> 00:38:33.810 making it a 7 to 8 hour

NOTE Confidence: 0.8473731

00:38:33.810 --> 00:38:35.148 minimum treatment day.

NOTE Confidence: 0.8473731

00:38:35.150 --> 00:38:37.432 And obviously the time is spent is

NOTE Confidence: 0.8473731

00:38:37.432 --> 00:38:41.630 worth it if the results are good, but.

NOTE Confidence: 0.8473731

00:38:41.630 --> 00:38:42.798 It's not for everybody.

NOTE Confidence: 0.8827373

00:38:44.990 --> 00:38:46.862 So for many patients who still

NOTE Confidence: 0.8827373

00:38:46.862 --> 00:38:49.091 live less than a year after

NOTE Confidence: 0.8827373

00:38:49.091 --> 00:38:50.907 diagnosis of brain metastases,

NOTE Confidence: 0.8827373

00:38:50.910 --> 00:38:52.455 though radiosurgery still

NOTE Confidence: 0.8827373

00:38:52.455 --> 00:38:55.030 remains the first line treatment.

NOTE Confidence: 0.8827373

00:38:55.030 --> 00:38:56.854 And so on the bottom you can see

NOTE Confidence: 0.8827373

00:38:56.854 --> 00:38:58.777 here a volume change overtime graph

NOTE Confidence: 0.8827373

00:38:58.777 --> 00:39:01.180 that we published quite a while ago,

NOTE Confidence: 0.8827373

00:39:01.180 --> 00:39:03.188 now showing that if you live only nine

NOTE Confidence: 0.8827373

00:39:03.188 --> 00:39:05.079 months there is that initial shrinkage

NOTE Confidence: 0.8827373

00:39:05.079 --> 00:39:06.749 of the radiosurgery treated lesion.

NOTE Confidence: 0.8827373

00:39:06.750 --> 00:39:09.440 As you can see all the way to the left

NOTE Confidence: 0.8827373

00:39:09.513 --> 00:39:12.457 of the graph and then the volume remains

NOTE Confidence: 0.8827373

00:39:12.457 --> 00:39:15.247 stable over the course of your lifetime.

NOTE Confidence: 0.8827373

00:39:15.250 --> 00:39:17.826 If however, you live longer than that,

NOTE Confidence: 0.8827373

00:39:17.830 --> 00:39:20.448 then there is an increasing chance that

NOTE Confidence: 0.8827373

00:39:20.448 --> 00:39:22.705 you could run into this phenomenon

NOTE Confidence: 0.8827373

00:39:22.705 --> 00:39:25.972 that you see around the 12 to 18 month

NOTE Confidence: 0.8827373

00:39:25.972 --> 00:39:28.499 mark where the lesions start to grow,

NOTE Confidence: 0.8827373

00:39:28.500 --> 00:39:30.702 and so as radiosurgery has become

NOTE Confidence: 0.8827373

00:39:30.702 --> 00:39:31.807 more popular. Nationally.

NOTE Confidence: 0.8827373

00:39:31.807 --> 00:39:33.642 The rate of this phenomenon

NOTE Confidence: 0.8827373

00:39:33.642 --> 00:39:34.743 has significantly increased,

NOTE Confidence: 0.8827373

00:39:34.750 --> 00:39:36.906 and so this is a phenomenon that

NOTE Confidence: 0.8827373

00:39:36.906 --> 00:39:38.800 is unique to radiosurgery,

NOTE Confidence: 0.8827373

00:39:38.800 --> 00:39:42.064 does not occur after a whole

NOTE Confidence: 0.8827373

00:39:42.064 --> 00:39:43.696 brain radiation alone.

NOTE Confidence: 0.8827373

00:39:43.700 --> 00:39:46.620 And and it's becoming

NOTE Confidence: 0.8827373

00:39:46.620 --> 00:39:48.080 increasingly problematic.

NOTE Confidence: 0.8827373

00:39:48.080 --> 00:39:49.560 And so when we first

NOTE Confidence: 0.8827373

00:39:49.560 --> 00:39:50.448 encountered this phenomenon,

NOTE Confidence: 0.8827373

00:39:50.450 --> 00:39:53.105 it was assumed that regrowth was due to tour,

NOTE Confidence: 0.8827373

00:39:53.110 --> 00:39:54.951 'cause that's what it was when things

NOTE Confidence: 0.8827373

00:39:54.951 --> 00:39:56.660 regrew after horn radiation therapy.

NOTE Confidence: 0.8827373

00:39:56.660 --> 00:39:57.548 But in fact,

NOTE Confidence: 0.8827373

00:39:57.548 --> 00:39:59.414 we know now that 50% of

NOTE Confidence: 0.8827373

00:39:59.414 --> 00:40:00.566 radio graphic regrowth.

NOTE Confidence: 0.8827373

00:40:00.566 --> 00:40:04.109 Can be due to post high dose radiation,

NOTE Confidence: 0.8827373

00:40:04.110 --> 00:40:05.000 inflammatory phenomenon

NOTE Confidence: 0.8827373

00:40:05.000 --> 00:40:06.780 known as radiation necrosis,

NOTE Confidence: 0.8827373

00:40:06.780 --> 00:40:09.874 which you can see on the right,

NOTE Confidence: 0.8827373

00:40:09.880 --> 00:40:12.442 and so is images show perivascular

NOTE Confidence: 0.8827373

00:40:12.442 --> 00:40:14.767 and intra parenchymal T cell

NOTE Confidence: 0.8827373

00:40:14.767 --> 00:40:16.919 infiltration associated with the

NOTE Confidence: 0.8827373

00:40:16.919 --> 00:40:19.609 standard necrosis and Astra Cytosis

NOTE Confidence: 0.8827373

00:40:19.683 --> 00:40:21.779 and Vascular Highlanders issue

NOTE Confidence: 0.8827373

00:40:21.779 --> 00:40:24.399 that you see following radiation.

NOTE Confidence: 0.8827373

00:40:24.400 --> 00:40:26.374 While we do not really understand

NOTE Confidence: 0.8827373

00:40:26.374 --> 00:40:28.151 the pathophysiology still behind the

NOTE Confidence: 0.8827373

00:40:28.151 --> 00:40:30.186 development of radiation necrosis clinically,

NOTE Confidence: 0.8827373

00:40:30.190 --> 00:40:32.020 we have relied on experience

NOTE Confidence: 0.8827373

00:40:32.020 --> 00:40:33.850 that suggests that if disease

NOTE Confidence: 0.8827373

00:40:33.915 --> 00:40:35.620 is progressing in the body,

NOTE Confidence: 0.8827373

00:40:35.620 --> 00:40:37.900 then regrowth in the brain

NOTE Confidence: 0.8827373

00:40:37.900 --> 00:40:40.180 is likely to be tumor.

NOTE Confidence: 0.8827373

00:40:40.180 --> 00:40:41.568 On the other hand,

NOTE Confidence: 0.8827373

00:40:41.568 --> 00:40:43.650 what we've learned is that patients

NOTE Confidence: 0.8827373

00:40:43.722 --> 00:40:45.986 who are doing well in the body and

NOTE Confidence: 0.8827373

00:40:45.986 --> 00:40:47.611 have been successfully treated

NOTE Confidence: 0.8827373

00:40:47.611 --> 00:40:50.086 with immunotherapy or have received

NOTE Confidence: 0.8827373

00:40:50.086 --> 00:40:52.450 repeat radiation for presumed tumor,

NOTE Confidence: 0.8827373

00:40:52.450 --> 00:40:55.060 regrowing in the brain and more

NOTE Confidence: 0.8827373

00:40:55.060 --> 00:40:58.079 likely to develop radiation necrosis.

NOTE Confidence: 0.8827373

00:40:58.080 --> 00:40:58.395 Unfortunately,

NOTE Confidence: 0.8827373

00:40:58.395 --> 00:40:59.970 even with these clinical predictors

NOTE Confidence: 0.8827373

00:40:59.970 --> 00:41:01.230 were not always right,

NOTE Confidence: 0.8827373

00:41:01.230 --> 00:41:03.841 and so we turned to image Ng

NOTE Confidence: 0.8827373

00:41:03.841 --> 00:41:05.850 to try to help us.

NOTE Confidence: 0.8827373

00:41:05.850 --> 00:41:07.306 And over the years,

NOTE Confidence: 0.8827373

00:41:07.306 --> 00:41:09.490 many imaging sequences have been proposed,

NOTE Confidence: 0.8827373

00:41:09.490 --> 00:41:11.230 including those listed here.

NOTE Confidence: 0.8827373

00:41:11.230 --> 00:41:13.405 The latest favorite is more

NOTE Confidence: 0.8827373

00:41:13.405 --> 00:41:15.496 profusion and so to the right is

NOTE Confidence: 0.8827373

00:41:15.496 --> 00:41:17.650 an example of how wrong we can

NOTE Confidence: 0.8827373

00:41:17.650 --> 00:41:19.714 still be with these images though.

NOTE Confidence: 0.8827373

00:41:19.720 --> 00:41:22.690 So this is a patient who had his right

NOTE Confidence: 0.8827373

00:41:22.690 --> 00:41:24.878 temporal and then right cerebellar

NOTE Confidence: 0.8827373

00:41:24.878 --> 00:41:27.103 lesion treated nine months ago.

NOTE Confidence: 0.8827373

00:41:27.110 --> 00:41:28.670 The lesion started to regrow

NOTE Confidence: 0.8827373

00:41:28.670 --> 00:41:29.918 an on Mr Perfusion.

NOTE Confidence: 0.8827373

00:41:29.920 --> 00:41:31.774 Blue areas are considered low blood

NOTE Confidence: 0.8827373

00:41:31.774 --> 00:41:33.962 flow whereas green to red areas are

NOTE Confidence: 0.8827373

00:41:33.962 --> 00:41:35.452 considered higher blood flow and

NOTE Confidence: 0.8827373

00:41:35.452 --> 00:41:37.407 so where there's less blood flow,

NOTE Confidence: 0.8827373

00:41:37.410 --> 00:41:40.209 we think it's less likely to be to Moran.

NOTE Confidence: 0.8827373

00:41:40.210 --> 00:41:43.298 More blood flow more likely to be tumor.

NOTE Confidence: 0.8827373

00:41:43.300 --> 00:41:45.256 So the right temporal lesion was

NOTE Confidence: 0.8827373

00:41:45.256 --> 00:41:47.484 red's tumor and the right cerebellar

NOTE Confidence: 0.8827373

00:41:47.484 --> 00:41:50.070 lesion was read as radiation necrosis.

NOTE Confidence: 0.8827373

00:41:50.070 --> 00:41:51.570 Both lesions ultimately needed

NOTE Confidence: 0.8827373

00:41:51.570 --> 00:41:52.695 resection for symptomatology,

NOTE Confidence: 0.8827373

00:41:52.700 --> 00:41:54.092 and in fact,

NOTE Confidence: 0.8827373

00:41:54.092 --> 00:41:56.876 the pathology was the exact opposite.

NOTE Confidence: 0.80241376

00:41:56.880 --> 00:41:59.575 And so unfortunately today the

NOTE Confidence: 0.80241376

00:41:59.575 --> 00:42:01.731 gold standard for differentiation

NOTE Confidence: 0.80241376

00:42:01.731 --> 00:42:03.792 differentiating tumor from radiation

NOTE Confidence: 0.80241376

00:42:03.792 --> 00:42:05.720 across this remains surgical.

NOTE Confidence: 0.80241376

00:42:05.720 --> 00:42:07.340 One imaging modality that has

NOTE Confidence: 0.80241376

00:42:07.340 --> 00:42:09.335 been reported to be more helpful

NOTE Confidence: 0.80241376

00:42:09.335 --> 00:42:11.189 in Europe is amono acid pet.

NOTE Confidence: 0.80241376

00:42:11.190 --> 00:42:12.800 The traditional amino acid compound

NOTE Confidence: 0.80241376

00:42:12.800 --> 00:42:14.930 that has been most studied and used,

NOTE Confidence: 0.80241376

00:42:14.930 --> 00:42:16.494 his radio labeled methionine,

NOTE Confidence: 0.80241376

00:42:16.494 --> 00:42:18.449 which unfortunately has a very

NOTE Confidence: 0.80241376

00:42:18.449 --> 00:42:20.537 short half life and his therefore

NOTE Confidence: 0.80241376

00:42:20.537 --> 00:42:22.520 being too expensive to make and

NOTE Confidence: 0.80241376

00:42:22.520 --> 00:42:24.248 use here in the United States.

NOTE Confidence: 0.80241376

00:42:24.250 --> 00:42:25.620 A much more stable compound,

NOTE Confidence: 0.80241376

00:42:25.620 --> 00:42:27.198 however, has recently come on the

NOTE Confidence: 0.80241376

00:42:27.198 --> 00:42:28.630 market called flu sick living,

NOTE Confidence: 0.80241376

00:42:28.630 --> 00:42:30.534 and so I just wanted to introduce

NOTE Confidence: 0.80241376

00:42:30.534 --> 00:42:32.842 you to a new image Ng trial

NOTE Confidence: 0.80241376

00:42:32.842 --> 00:42:34.266 that we're starting here.

NOTE Confidence: 0.80241376

00:42:34.270 --> 00:42:36.870 So pursue is a phase 2B trial which

NOTE Confidence: 0.80241376

00:42:36.870 --> 00:42:39.378 is currently open for any brain

NOTE Confidence: 0.80241376

00:42:39.378 --> 00:42:41.166 metastasis patient with lesions

NOTE Confidence: 0.80241376

00:42:41.166 --> 00:42:43.010 regrowing after radiosurgery.

NOTE Confidence: 0.80241376

00:42:43.010 --> 00:42:45.560 Its purpose is to gather preliminary

NOTE Confidence: 0.80241376

00:42:45.560 --> 00:42:48.529 data to help define the image in

NOTE Confidence: 0.80241376

00:42:48.529 --> 00:42:50.899 cutoff values for classic luvene pet

NOTE Confidence: 0.80241376

00:42:50.899 --> 00:42:53.459 by correlating preoperative imaging

NOTE Confidence: 0.80241376

00:42:53.459 --> 00:42:56.239 with post craniotomy pathology.

NOTE Confidence: 0.80241376

00:42:56.240 --> 00:42:58.022 Once these image in cut offs

NOTE Confidence: 0.80241376

00:42:58.022 --> 00:42:59.210 have been defined though,

NOTE Confidence: 0.80241376

00:42:59.210 --> 00:43:00.700 then we'll be opening revelate,

NOTE Confidence: 0.80241376

00:43:00.700 --> 00:43:02.392 which will be a phase three

NOTE Confidence: 0.80241376

00:43:02.392 --> 00:43:03.895 study to determine the efficacy

NOTE Confidence: 0.80241376

00:43:03.895 --> 00:43:05.450 of flu sick Lavigne Pat.

NOTE Confidence: 0.80241376

00:43:05.450 --> 00:43:06.593 In different shading,

NOTE Confidence: 0.80241376

00:43:06.593 --> 00:43:08.117 tumor from radiation necrosis.

NOTE Confidence: 0.80241376

00:43:08.120 --> 00:43:09.098 For this study,

NOTE Confidence: 0.80241376

00:43:09.098 --> 00:43:10.402 both patients undergoing craniotomy

NOTE Confidence: 0.80241376

00:43:10.402 --> 00:43:12.000 and laser thermal coagulation,

NOTE Confidence: 0.80241376

00:43:12.000 --> 00:43:14.824 which will talk about a little bit later,

NOTE Confidence: 0.80241376

00:43:14.830 --> 00:43:15.781 will be eligible,

NOTE Confidence: 0.80241376

00:43:15.781 --> 00:43:18.000 and so hopefully you'll be seeing this

NOTE Confidence: 0.80241376

00:43:18.058 --> 00:43:20.074 study coming around and will be able

NOTE Confidence: 0.80241376

00:43:20.074 --> 00:43:22.326 to move closer towards obtaining a

NOTE Confidence: 0.80241376

00:43:22.326 --> 00:43:24.090 noninvasive method of differentiating

NOTE Confidence: 0.80241376

00:43:24.090 --> 00:43:25.770 tumor from radiation process.

NOTE Confidence: 0.83972985

00:43:28.250 --> 00:43:30.634 So the next challenge is what to do

NOTE Confidence: 0.83972985

00:43:30.634 --> 00:43:33.500 once we workout, whether the lesion is

NOTE Confidence: 0.83972985

00:43:33.500 --> 00:43:35.550 regrowing tumor or radiation necrosis.

NOTE Confidence: 0.83972985

00:43:35.550 --> 00:43:39.099 What's interesting over the years is that

NOTE Confidence: 0.83972985

00:43:39.099 --> 00:43:41.830 management options for radiation necrosis

NOTE Confidence: 0.83972985

00:43:41.830 --> 00:43:45.214 have become more available than tumor.

NOTE Confidence: 0.83972985

00:43:45.220 --> 00:43:47.607 And so these are the options available.

NOTE Confidence: 0.83972985

00:43:47.610 --> 00:43:49.058 Obviously for radiation necrosis

NOTE Confidence: 0.83972985

00:43:49.058 --> 00:43:51.230 it's possible just to observe the

NOTE Confidence: 0.83972985

00:43:51.287 --> 00:43:53.225 lesions because some of these lesions

NOTE Confidence: 0.83972985

00:43:53.225 --> 00:43:54.800 will resolve on their own.

NOTE Confidence: 0.83972985

00:43:54.800 --> 00:43:57.187 We've learned though, as I said before,

NOTE Confidence: 0.83972985

00:43:57.190 --> 00:43:59.188 that radiation necrosis tends to occur

NOTE Confidence: 0.83972985

00:43:59.188 --> 00:44:01.859 in patients tends to occur more often

NOTE Confidence: 0.83972985

00:44:01.859 --> 00:44:03.567 in patients receiving immunotherapy.

NOTE Confidence: 0.83972985

00:44:03.570 --> 00:44:07.140 And so stopping immunotherapy as an option,

NOTE Confidence: 0.83972985

00:44:07.140 --> 00:44:09.508 and certainly avoiding reradiation,

NOTE Confidence: 0.83972985

00:44:09.508 --> 00:44:13.060 is probably one of the biggest

NOTE Confidence: 0.83972985

00:44:13.150 --> 00:44:16.288 ways of avoiding making this worse.

NOTE Confidence: 0.83972985

00:44:16.290 --> 00:44:17.680 There are many medical therapies

NOTE Confidence: 0.83972985

00:44:17.680 --> 00:44:18.792 that have been tried.

NOTE Confidence: 0.83972985

00:44:18.800 --> 00:44:21.334 The only one that has been demonstrated

NOTE Confidence: 0.83972985

00:44:21.334 --> 00:44:23.083 to be efficacious's purpose is

NOTE Confidence: 0.83972985

00:44:23.083 --> 00:44:24.877 a map in a randomized trial.

NOTE Confidence: 0.83972985

00:44:24.880 --> 00:44:27.608 But what we've also learned is that surgical

NOTE Confidence: 0.83972985

00:44:27.608 --> 00:44:29.510 management has been very effective,

NOTE Confidence: 0.83972985

00:44:29.510 --> 00:44:32.022 and so back in the day we only

NOTE Confidence: 0.83972985

00:44:32.022 --> 00:44:33.420 had craniotomy available.

NOTE Confidence: 0.83972985

00:44:33.420 --> 00:44:35.556 But if you completely remove a

NOTE Confidence: 0.83972985

00:44:35.556 --> 00:44:36.980 radiation across this lesion,

NOTE Confidence: 0.83972985

00:44:36.980 --> 00:44:39.680 then resolution is is rapid.

NOTE Confidence: 0.83972985

00:44:39.680 --> 00:44:42.026 Not everybody wants a craniotomy though,

NOTE Confidence: 0.83972985

00:44:42.030 --> 00:44:44.374 and so over the last five or six

NOTE Confidence: 0.83972985

00:44:44.374 --> 00:44:46.603 years we've developed a technique

NOTE Confidence: 0.83972985

00:44:46.603 --> 00:44:48.699 called laser thermal coagulation.

NOTE Confidence: 0.83972985

00:44:48.700 --> 00:44:50.062 Shorten does lit,

NOTE Confidence: 0.83972985

00:44:50.062 --> 00:44:54.310 which is helped us with with this population.

NOTE Confidence: 0.83972985

00:44:54.310 --> 00:44:55.129 And so again,

NOTE Confidence: 0.83972985

00:44:55.129 --> 00:44:57.510 for those who are not familiar letters is

NOTE Confidence: 0.83972985

00:44:57.510 --> 00:44:59.570 a minimally invasive stereotactic procedure.

NOTE Confidence: 0.83972985

00:44:59.570 --> 00:45:01.586 So through the same smaller 5

NOTE Confidence: 0.83972985

00:45:01.586 --> 00:45:03.519 millimeter stab incision in the skin,

NOTE Confidence: 0.83972985

00:45:03.520 --> 00:45:05.464 we can introduce a biopsy needle

NOTE Confidence: 0.83972985

00:45:05.464 --> 00:45:07.469 through the skull into the lesion,

NOTE Confidence: 0.83972985

00:45:07.470 --> 00:45:08.358 take a bite,

NOTE Confidence: 0.83972985

00:45:08.358 --> 00:45:10.854 and then take out the needle and through

NOTE Confidence: 0.83972985

00:45:10.854 --> 00:45:13.718 the same hole we can introduce the laser,

NOTE Confidence: 0.83972985

00:45:13.720 --> 00:45:17.482 which is what you can see on the left.

NOTE Confidence: 0.83972985

00:45:17.490 --> 00:45:19.190 Patient then gets introduced

NOTE Confidence: 0.83972985

00:45:19.190 --> 00:45:20.890 into the MRI machine.

NOTE Confidence: 0.83972985

00:45:20.890 --> 00:45:23.572 Um and we check to make sure that the

NOTE Confidence: 0.83972985

00:45:23.572 --> 00:45:26.377 laser is inside the middle of the lesion.

NOTE Confidence: 0.83972985

00:45:26.380 --> 00:45:28.855 We then turn the laser on and you can

NOTE Confidence: 0.83972985

00:45:28.855 --> 00:45:31.546 see the yellow lines around the lesion.

NOTE Confidence: 0.83972985

00:45:31.550 --> 00:45:34.286 Those are the lines are the heat lines

NOTE Confidence: 0.83972985

00:45:34.286 --> 00:45:36.717 that allow us to know when to stop.

NOTE Confidence: 0.83972985

00:45:36.720 --> 00:45:39.508 Turn off the laser.

NOTE Confidence: 0.83972985

00:45:39.510 --> 00:45:41.958 And so this is an example of how

NOTE Confidence: 0.83972985

00:45:41.958 --> 00:45:43.300 radiation necrosis works best,

NOTE Confidence: 0.83972985

00:45:43.300 --> 00:45:45.960 and so to the left you can see a patient

NOTE Confidence: 0.83972985

00:45:46.035 --> 00:45:48.597 who had in fact 23 lesions treated

NOTE Confidence: 0.83972985

00:45:48.597 --> 00:45:50.568 with radiosurgery of all of them.

NOTE Confidence: 0.83972985

00:45:50.570 --> 00:45:52.906 Though this was the only lesion in the

NOTE Confidence: 0.83972985

00:45:52.906 --> 00:45:55.309 right basal ganglia that became a problem.

NOTE Confidence: 0.83972985

00:45:55.310 --> 00:45:56.890 So it started to regrow,

NOTE Confidence: 0.83972985

00:45:56.890 --> 00:45:59.725 was associated with a lot of adima around it.

NOTE Confidence: 0.83972985

00:45:59.730 --> 00:46:03.510 We went ahead and treated this lesion.

NOTE Confidence: 0.83972985

00:46:03.510 --> 00:46:05.673 And you can see that the incision

NOTE Confidence: 0.83972985

00:46:05.673 --> 00:46:07.750 is only a couple staples.

NOTE Confidence: 0.83972985

00:46:07.750 --> 00:46:09.706 Long patient was able to go

NOTE Confidence: 0.83972985

00:46:09.706 --> 00:46:11.630 home first day after surgery.

NOTE Confidence: 0.83972985

00:46:11.630 --> 00:46:14.059 They were able to come off steroids

NOTE Confidence: 0.83972985

00:46:14.059 --> 00:46:16.933 in a week and you can see in

NOTE Confidence: 0.83972985

00:46:16.933 --> 00:46:18.337 two weeks how quickly.

NOTE Confidence: 0.83972985

00:46:18.340 --> 00:46:20.100 Even though the lesion size

NOTE Confidence: 0.83972985

00:46:20.100 --> 00:46:21.508 itself is not decreased,

NOTE Confidence: 0.83972985

00:46:21.510 --> 00:46:23.275 that the edema has gotten

NOTE Confidence: 0.83972985

00:46:23.275 --> 00:46:24.687 better by six weeks.

NOTE Confidence: 0.83972985

00:46:24.690 --> 00:46:26.700 Obviously good resolution and so so

NOTE Confidence: 0.83972985

00:46:26.700 --> 00:46:29.568 the nice thing is we haven't had to

NOTE Confidence: 0.83972985

00:46:29.568 --> 00:46:31.393 do craniotomies for these lesions,

NOTE Confidence: 0.83972985

00:46:31.400 --> 00:46:33.850 which are obviously significantly morbid.

NOTE Confidence: 0.83972985

00:46:33.850 --> 00:46:35.956 And have been able to offer

NOTE Confidence: 0.83972985

00:46:35.956 --> 00:46:37.009 one additional option.

NOTE Confidence: 0.858445

00:46:39.380 --> 00:46:42.724 Home and so how we decide which option

NOTE Confidence: 0.858445

00:46:42.724 --> 00:46:46.144 to treat with with for radiation

NOTE Confidence: 0.858445

00:46:46.144 --> 00:46:49.259 necrosis still remains highly variable.

NOTE Confidence: 0.858445

00:46:49.260 --> 00:46:52.140 So we went back and looked at our

NOTE Confidence: 0.858445

00:46:52.140 --> 00:46:53.421 institutional experience to try

NOTE Confidence: 0.858445

00:46:53.421 --> 00:46:55.405 and work out if we could start to

NOTE Confidence: 0.858445

00:46:55.472 --> 00:46:57.768 standardize how we choose what we do.

NOTE Confidence: 0.858445

00:46:57.770 --> 00:47:00.969 So the first study we did looked

NOTE Confidence: 0.858445

00:47:00.969 --> 00:47:02.780 at craniotomy versus lit.

NOTE Confidence: 0.858445

00:47:02.780 --> 00:47:05.531 So what we learned was that both

NOTE Confidence: 0.858445

00:47:05.531 --> 00:47:08.242 tools are pretty good at taking

NOTE Confidence: 0.858445

00:47:08.242 --> 00:47:10.170 care of radiation necrosis.

NOTE Confidence: 0.858445

00:47:10.170 --> 00:47:11.842 What it appears though,

NOTE Confidence: 0.858445

00:47:11.842 --> 00:47:13.932 is that symptom resolution and

NOTE Confidence: 0.858445

00:47:13.932 --> 00:47:15.953 ability to wean off steroids

NOTE Confidence: 0.858445

00:47:15.953 --> 00:47:17.863 may be better with craniotomy.

NOTE Confidence: 0.858445

00:47:17.870 --> 00:47:20.282 But what we realized also was

NOTE Confidence: 0.858445

00:47:20.282 --> 00:47:22.956 that the lesion volume was larger

NOTE Confidence: 0.858445

00:47:22.956 --> 00:47:24.916 in our craniotomy patients.

NOTE Confidence: 0.858445

00:47:24.920 --> 00:47:27.349 And so when we took out all

NOTE Confidence: 0.858445

00:47:27.349 --> 00:47:29.459 the lesions that were greater

NOTE Confidence: 0.858445

00:47:29.459 --> 00:47:31.934 than 3 centimeters in diameter,

NOTE Confidence: 0.858445

00:47:31.940 --> 00:47:35.504 and what you can see all the way to

NOTE Confidence: 0.858445

00:47:35.504 --> 00:47:38.957 the left is that is that in fact,

NOTE Confidence: 0.858445

00:47:38.960 --> 00:47:40.556 the two surgical tools,

NOTE Confidence: 0.858445

00:47:40.556 --> 00:47:41.753 litton craniotomy basically

NOTE Confidence: 0.858445

00:47:41.753 --> 00:47:43.510 become comperable in Efficacy.

NOTE Confidence: 0.858445

00:47:43.510 --> 00:47:46.670 And really what becomes a?

NOTE Confidence: 0.858445

00:47:46.670 --> 00:47:49.211 Decider for how well things work is

NOTE Confidence: 0.858445

00:47:49.211 --> 00:47:52.120 whether or not the lesion is radiation,

NOTE Confidence: 0.858445

00:47:52.120 --> 00:47:52.504 necrosis,

NOTE Confidence: 0.858445

00:47:52.504 --> 00:47:53.272 or tumor,

NOTE Confidence: 0.858445

00:47:53.272 --> 00:47:55.960 and so from this we started first

NOTE Confidence: 0.858445

00:47:56.034 --> 00:47:58.617 of all to try and detect lesions

NOTE Confidence: 0.858445

00:47:58.617 --> 00:48:01.395 when they're small so that we can

NOTE Confidence: 0.858445

00:48:01.395 --> 00:48:03.385 take advantage of the minimally

NOTE Confidence: 0.858445

00:48:03.385 --> 00:48:05.155 invasive technique of lit,

NOTE Confidence: 0.858445

00:48:05.155 --> 00:48:07.430 rather than having to condemn

NOTE Confidence: 0.858445

00:48:07.430 --> 00:48:09.500 the patient to craniotomy.

NOTE Confidence: 0.858445

00:48:09.500 --> 00:48:10.142 But obviously,

NOTE Confidence: 0.858445

00:48:10.142 --> 00:48:12.068 if the lesion is larger than

NOTE Confidence: 0.858445

00:48:12.068 --> 00:48:13.556 3 centimeters then craniotomy

NOTE Confidence: 0.858445

00:48:13.556 --> 00:48:14.738 is still effective.

NOTE Confidence: 0.685159811764706

00:48:17.100 --> 00:48:21.591 Um? The what we did next was then can

NOTE Confidence: 0.685159811764706

00:48:21.591 --> 00:48:26.118 try and compare use of lit to Aston.

NOTE Confidence: 0.685159811764706

00:48:26.120 --> 00:48:29.067 And what you can see here is

NOTE Confidence: 0.685159811764706

00:48:29.067 --> 00:48:32.115 that we actually have two very

NOTE Confidence: 0.685159811764706

00:48:32.115 --> 00:48:34.363 different populations being chosen

NOTE Confidence: 0.685159811764706

00:48:34.363 --> 00:48:38.109 for the two different treatments.

NOTE Confidence: 0.685159811764706

00:48:38.110 --> 00:48:41.305 So lit patients tending to be a little bit

NOTE Confidence: 0.685159811764706

00:48:41.305 --> 00:48:44.340 better functionally, and not only that,

NOTE Confidence: 0.685159811764706

00:48:44.340 --> 00:48:46.830 but the time from radiosurgery tool.

NOTE Confidence: 0.685159811764706

00:48:46.830 --> 00:48:49.326 It tends to be significantly longer

NOTE Confidence: 0.685159811764706

00:48:49.326 --> 00:48:52.219 than for those getting bear versus man.

NOTE Confidence: 0.685159811764706

00:48:52.220 --> 00:48:53.800 So for whatever reason,

NOTE Confidence: 0.685159811764706

00:48:53.800 --> 00:48:56.170 patients who have lesions that are

NOTE Confidence: 0.685159811764706

00:48:56.245 --> 00:48:58.657 regrowing early after radiosurgery a are

NOTE Confidence: 0.685159811764706

00:48:58.657 --> 00:49:01.769 tend to be getting drug more frequently.

NOTE Confidence: 0.8684395

00:49:03.980 --> 00:49:05.064 In addition to that,

NOTE Confidence: 0.8684395

00:49:05.064 --> 00:49:07.170 when we look at local lesional control,

NOTE Confidence: 0.8684395

00:49:07.170 --> 00:49:09.282 what we also see is 2 very different

NOTE Confidence: 0.8684395

00:49:09.282 --> 00:49:11.458 patterns of response, again making the

NOTE Confidence: 0.8684395

00:49:11.458 --> 00:49:13.654 two treatments very hard to compare.

NOTE Confidence: 0.8684395

00:49:13.660 --> 00:49:16.828 If we start with the graph on the right,

NOTE Confidence: 0.8684395

00:49:16.830 --> 00:49:19.385 the graph shows 3D volume change overtime

NOTE Confidence: 0.8684395

00:49:19.385 --> 00:49:22.209 again and you can see that the black

NOTE Confidence: 0.8684395

00:49:22.209 --> 00:49:24.920 line which is the business, is a Medline.

NOTE Confidence: 0.8684395

00:49:24.920 --> 00:49:27.020 There's a relatively rapid decrease in

NOTE Confidence: 0.8684395

00:49:27.020 --> 00:49:29.150 lesion size in response to Adbaston,

NOTE Confidence: 0.8684395

00:49:29.150 --> 00:49:30.890 but this response ultimately

NOTE Confidence: 0.8684395

00:49:30.890 --> 00:49:32.630 does not last forever.

NOTE Confidence: 0.8684395

00:49:32.630 --> 00:49:34.751 In addition, on the left you can

NOTE Confidence: 0.8684395

00:49:34.751 --> 00:49:37.149 see based on the runner criterion,

NOTE Confidence: 0.8684395

00:49:37.150 --> 00:49:39.438 that while a 15% a subset of patients

NOTE Confidence: 0.8684395

00:49:39.438 --> 00:49:42.030 had an excellent response to Avastin,

NOTE Confidence: 0.8684395

00:49:42.030 --> 00:49:45.153 showing a CR both at three and six months,

NOTE Confidence: 0.8684395

00:49:45.160 --> 00:49:47.967 the majority of patients only have disease

NOTE Confidence: 0.8684395

00:49:47.967 --> 00:49:49.980 stabilization and then progression.

NOTE Confidence: 0.8684395

00:49:49.980 --> 00:49:51.372 In comparison, after lit,

NOTE Confidence: 0.8684395

00:49:51.372 --> 00:49:53.932 there is the expected increase in lesion

NOTE Confidence: 0.8684395

00:49:53.932 --> 00:49:56.410 volume from the surgical procedure itself,

NOTE Confidence: 0.8684395

00:49:56.410 --> 00:49:59.182 but then a good long term

NOTE Confidence: 0.8684395

00:49:59.182 --> 00:50:00.106 volumetric response.

NOTE Confidence: 0.8684395

00:50:00.110 --> 00:50:02.504 You Irano this is less easy to

NOTE Confidence: 0.8684395

00:50:02.504 --> 00:50:04.259 interpret because much of the

NOTE Confidence: 0.8684395

00:50:04.259 --> 00:50:06.233 volume change were large enough to

NOTE Confidence: 0.8684395

00:50:06.233 --> 00:50:08.580 result in a progression of disease.

NOTE Confidence: 0.8684395

00:50:08.580 --> 00:50:11.016 Reading early on that then resolved

NOTE Confidence: 0.8684395

00:50:11.016 --> 00:50:13.519 to stable disease by six months.

NOTE Confidence: 0.8684395

00:50:13.520 --> 00:50:14.657 And so ultimately,

NOTE Confidence: 0.8684395

00:50:14.657 --> 00:50:16.173 local control was significantly

NOTE Confidence: 0.8684395

00:50:16.173 --> 00:50:18.439 better at six months and beyond

NOTE Confidence: 0.8684395

00:50:18.439 --> 00:50:20.214 for laser compared to Avastin.

NOTE Confidence: 0.8684395

00:50:20.220 --> 00:50:22.884 But obviously if you have a large lesion

NOTE Confidence: 0.8684395

00:50:22.884 --> 00:50:25.420 with Mass Effect relatively early on,

NOTE Confidence: 0.8684395

00:50:25.420 --> 00:50:26.908 that can't be surgically

NOTE Confidence: 0.8684395

00:50:26.908 --> 00:50:28.024 respected than Avastin.

NOTE Confidence: 0.8684395

00:50:28.030 --> 00:50:29.890 Now clearly plays a role.

NOTE Confidence: 0.84736407

00:50:32.170 --> 00:50:33.650 Lastly, from a multi institutional

NOTE Confidence: 0.84736407

00:50:33.650 --> 00:50:35.368 study of lit, we learned that

NOTE Confidence: 0.84736407

00:50:35.368 --> 00:50:36.748 complete ablation of a radiation

NOTE Confidence: 0.84736407

00:50:36.748 --> 00:50:38.598 across this lesion results in better

NOTE Confidence: 0.84736407

00:50:38.598 --> 00:50:40.158 local control than partial ablation.

NOTE Confidence: 0.84736407

00:50:40.160 --> 00:50:42.127 They can see in the first 2

NOTE Confidence: 0.84736407

00:50:42.127 --> 00:50:44.308 lines of the table to the left,

NOTE Confidence: 0.84736407

00:50:44.310 --> 00:50:46.347 and so the smaller the lesion at

NOTE Confidence: 0.84736407

00:50:46.347 --> 00:50:48.805 the time of lit, the more likely

NOTE Confidence: 0.84736407

00:50:48.805 --> 00:50:50.880 it will resolve post operatively.

NOTE Confidence: 0.84736407

00:50:50.880 --> 00:50:52.728 And so this last point is you can

NOTE Confidence: 0.84736407

00:50:52.728 --> 00:50:54.157 see also applies to regrowing

NOTE Confidence: 0.84736407

00:50:54.157 --> 00:50:55.975 tumor which is the bottom two

NOTE Confidence: 0.84736407

00:50:55.975 --> 00:50:57.707 rows of the table to the left.

NOTE Confidence: 0.84736407

00:50:57.710 --> 00:50:59.999 And for this reason we have started

NOTE Confidence: 0.84736407

00:50:59.999 --> 00:51:01.731 advocating for lit much earlier

NOTE Confidence: 0.84736407

00:51:01.731 --> 00:51:03.777 in the course of these patients.

NOTE Confidence: 0.84736407

00:51:03.780 --> 00:51:05.460 Whether we think it's radiation,

NOTE Confidence: 0.84736407

00:51:05.460 --> 00:51:08.178 necrosis, or tumor.

NOTE Confidence: 0.84736407

00:51:08.180 --> 00:51:09.527 To the right,

NOTE Confidence: 0.84736407

00:51:09.527 --> 00:51:11.772 the study also underscores one

NOTE Confidence: 0.84736407

00:51:11.772 --> 00:51:14.242 more problem in brain metastasis

NOTE Confidence: 0.84736407

00:51:14.242 --> 00:51:16.722 management and that is that

NOTE Confidence: 0.84736407

00:51:16.722 --> 00:51:19.414 regrowing tumor both in the local

NOTE Confidence: 0.84736407

00:51:19.414 --> 00:51:21.429 control as well as survival.

NOTE Confidence: 0.84736407

00:51:21.430 --> 00:51:24.790 Data is a much bigger problem to

NOTE Confidence: 0.84736407

00:51:24.790 --> 00:51:27.140 manage the radiation necrosis.

NOTE Confidence: 0.84736407

00:51:27.140 --> 00:51:29.240 And so this brings us to,

NOTE Confidence: 0.84736407

00:51:29.240 --> 00:51:32.040 kind of how we offer radiation dosing here.

NOTE Confidence: 0.84736407

00:51:32.040 --> 00:51:34.464 And so while we would prefer that our

NOTE Confidence: 0.84736407

00:51:34.464 --> 00:51:36.589 patients not get either complication,

NOTE Confidence: 0.84736407

00:51:36.590 --> 00:51:39.040 if we had to pick one complication,

NOTE Confidence: 0.84736407

00:51:39.040 --> 00:51:40.675 radiation necrosis would be the

NOTE Confidence: 0.84736407

00:51:40.675 --> 00:51:43.124 preferable one because we seem to have

NOTE Confidence: 0.84736407

00:51:43.124 --> 00:51:44.636 better treatment options available.

NOTE Confidence: 0.86773807

00:51:47.250 --> 00:51:49.609 Alright, and so for the last few

NOTE Confidence: 0.86773807

00:51:49.609 --> 00:51:52.074 minutes I wanted to move away from

NOTE Confidence: 0.86773807

00:51:52.074 --> 00:51:54.595 surgery and radiation and talk a little

NOTE Confidence: 0.86773807

00:51:54.595 --> 00:51:57.248 bit about work that we've been doing.

NOTE Confidence: 0.86773807

00:51:57.250 --> 00:51:58.694 Looking at recurrent tumors.

NOTE Confidence: 0.86773807

00:51:58.694 --> 00:52:00.860 So recurrent tumor being the most

NOTE Confidence: 0.86773807

00:52:00.927 --> 00:52:03.314 difficult of the problems that we manage.

NOTE Confidence: 0.86773807

00:52:03.320 --> 00:52:05.045 Unfortunately more radiation and surgery

NOTE Confidence: 0.86773807

00:52:05.045 --> 00:52:07.240 is usually morbid for the patient,

NOTE Confidence: 0.86773807

00:52:07.240 --> 00:52:10.039 and so is there a way that we look

NOTE Confidence: 0.86773807

00:52:10.039 --> 00:52:12.459 at changing systemic therapy to

NOTE Confidence: 0.86773807

00:52:12.459 --> 00:52:15.489 be more effective in the brain?

NOTE Confidence: 0.86773807

00:52:15.490 --> 00:52:18.631 And so I want to thank doctor Hertz and

NOTE Confidence: 0.86773807

00:52:18.631 --> 00:52:21.509 the support group for the opportunity

NOTE Confidence: 0.86773807

00:52:21.509 --> 00:52:24.520 to participate in the lung score.

NOTE Confidence: 0.86773807

00:52:24.520 --> 00:52:26.333 And credit for the work that I'm

NOTE Confidence: 0.86773807

00:52:26.333 --> 00:52:28.413 about to present goes mostly to my

NOTE Confidence: 0.86773807

00:52:28.413 --> 00:52:29.973 collaborators Don Wayne and pathology

NOTE Confidence: 0.86773807

00:52:29.973 --> 00:52:31.899 and Abby Patel and radiation oncology

NOTE Confidence: 0.86773807

00:52:31.899 --> 00:52:33.758 and they labs for hosting us,

NOTE Confidence: 0.86773807

00:52:33.758 --> 00:52:35.248 but also to Stephanie Chokers.

NOTE Confidence: 0.86773807

00:52:35.250 --> 00:52:37.716 One of our star neurosurgery residents

NOTE Confidence: 0.86773807

00:52:37.716 --> 00:52:40.170 who is really the force behind

NOTE Confidence: 0.86773807

00:52:40.170 --> 00:52:42.739 getting a lot of this work done.

NOTE Confidence: 0.86773807

00:52:42.740 --> 00:52:44.388 And so as background,

NOTE Confidence: 0.86773807

00:52:44.388 --> 00:52:47.510 the two proposed mechanisms for CNS failure,

NOTE Confidence: 0.86773807

00:52:47.510 --> 00:52:47.996 particularly,

NOTE Confidence: 0.86773807

00:52:47.996 --> 00:52:51.398 we've been looking at lung cancers with

NOTE Confidence: 0.86773807

00:52:51.398 --> 00:52:53.938 targetable mutations or either that drug

NOTE Confidence: 0.86773807

00:52:53.938 --> 00:52:56.182 penetration into the CNS remains low,

NOTE Confidence: 0.86773807

00:52:56.190 --> 00:52:58.360 and so compared with the

NOTE Confidence: 0.86773807

00:52:58.360 --> 00:52:59.228 systemic concentrations,

NOTE Confidence: 0.86773807

00:52:59.230 --> 00:53:01.735 tolerance can developed in the

NOTE Confidence: 0.86773807

00:53:01.735 --> 00:53:03.739 central nervous system overtime.

NOTE Confidence: 0.86773807

00:53:03.740 --> 00:53:06.014 Or the second mechanism is that

NOTE Confidence: 0.86773807

00:53:06.014 --> 00:53:08.110 as shown by Priscilla breast,

NOTE Confidence: 0.86773807

00:53:08.110 --> 00:53:10.510 you know through the whole exome

NOTE Confidence: 0.86773807

00:53:10.510 --> 00:53:12.692 sequencing data that she's presented

NOTE Confidence: 0.86773807

00:53:12.692 --> 00:53:14.728 before that clinically actionable

NOTE Confidence: 0.86773807

00:53:14.728 --> 00:53:17.273 gene alterations can be present

NOTE Confidence: 0.86773807

00:53:17.342 --> 00:53:18.698 in brain metastases.

NOTE Confidence: 0.86773807

00:53:18.700 --> 00:53:20.512 That would that may not be

NOTE Confidence: 0.86773807

00:53:20.512 --> 00:53:22.170 found in the primary tumor.

NOTE Confidence: 0.86773807

00:53:22.170 --> 00:53:23.259 Brain metastasis tissue,

NOTE Confidence: 0.86773807

00:53:23.259 --> 00:53:23.622 however,

NOTE Confidence: 0.86773807

00:53:23.622 --> 00:53:25.800 is often difficult to obtain and

NOTE Confidence: 0.86773807

00:53:25.858 --> 00:53:27.508 so we propose that perhaps by

NOTE Confidence: 0.86773807

00:53:27.508 --> 00:53:29.488 looking at cell free DNA in the CSF,

NOTE Confidence: 0.86773807

00:53:29.490 --> 00:53:32.311 we may be able to better study

NOTE Confidence: 0.86773807

00:53:32.311 --> 00:53:33.520 CNS tumor mutations.

NOTE Confidence: 0.86773807

00:53:33.520 --> 00:53:35.974 So we started a CSF biorepository

NOTE Confidence: 0.86773807

00:53:35.974 --> 00:53:38.770 in 2017 and have been collecting

NOTE Confidence: 0.86773807

00:53:38.770 --> 00:53:42.004 time matched CSF blood and brain

NOTE Confidence: 0.86773807

00:53:42.004 --> 00:53:44.399 metastasis tissue where possible.

NOTE Confidence: 0.86773807

00:53:44.400 --> 00:53:46.680 Things slow down a little bit with kovid,

NOTE Confidence: 0.86773807

00:53:46.680 --> 00:53:48.675 but we have over 100 samples down.

NOTE Confidence: 0.86773807

00:53:48.680 --> 00:53:51.669 This is a breakdown of their pathologies.

NOTE Confidence: 0.86773807

00:53:51.670 --> 00:53:53.062 And this is the gene panel

NOTE Confidence: 0.86773807

00:53:53.062 --> 00:53:53.990 that we've been using,

NOTE Confidence: 0.86773807

00:53:53.990 --> 00:53:55.150 which we recognize it would

NOTE Confidence: 0.86773807

00:53:55.150 --> 00:53:56.310 be a little bit limited,

NOTE Confidence: 0.86773807

00:53:56.310 --> 00:53:58.956 but we had to start it somewhere.

NOTE Confidence: 0.86773807

00:53:58.960 --> 00:54:02.080 And so this is a little bit of a busy slide,

NOTE Confidence: 0.86773807

00:54:02.080 --> 00:54:04.152 but what you can see is that we've

NOTE Confidence: 0.86773807

00:54:04.152 --> 00:54:05.407 been successful at finding tumor

NOTE Confidence: 0.86773807

00:54:05.407 --> 00:54:07.417 DNA in the CSF in about 2/3 of

NOTE Confidence: 0.86773807

00:54:07.417 --> 00:54:09.227 our patients with purely intra

NOTE Confidence: 0.86773807

00:54:09.227 --> 00:54:10.313 parenchymal brain metastasis.

NOTE Confidence: 0.86773807

00:54:10.320 --> 00:54:12.018 So not left a meningeal disease,

NOTE Confidence: 0.86773807

00:54:12.020 --> 00:54:14.210 although the amount of DNA

NOTE Confidence: 0.86773807

00:54:14.210 --> 00:54:15.962 has been highly variable.

NOTE Confidence: 0.86773807

00:54:15.970 --> 00:54:16.614 In addition,

NOTE Confidence: 0.86773807

00:54:16.614 --> 00:54:19.190 in the table on the left to the

NOTE Confidence: 0.86773807

00:54:19.266 --> 00:54:21.569 top you can see that while tumor

NOTE Confidence: 0.86773807

00:54:21.569 --> 00:54:23.805 DNA was also detectable in the

NOTE Confidence: 0.86773807

00:54:23.805 --> 00:54:26.145 blood of many of our patients,

NOTE Confidence: 0.86773807

00:54:26.150 --> 00:54:28.098 with interpretable brain metastases,

NOTE Confidence: 0.86773807

00:54:28.098 --> 00:54:30.046 neither patient with cytology

NOTE Confidence: 0.86773807

00:54:30.046 --> 00:54:31.384 proven leptomeningeal disease

NOTE Confidence: 0.86773807

00:54:31.384 --> 00:54:33.184 had tumor DNA in their plasma.

NOTE Confidence: 0.86773807

00:54:33.190 --> 00:54:35.360 And so when we broke down our

NOTE Confidence: 0.86773807

00:54:35.360 --> 00:54:37.513 population into patients with no stable

NOTE Confidence: 0.86773807

00:54:37.513 --> 00:54:39.057 or progressing systemic disease,

NOTE Confidence: 0.86773807

00:54:39.060 --> 00:54:41.160 you can see that plasma DNA tends

NOTE Confidence: 0.86773807

00:54:41.160 --> 00:54:43.063 actually to be more reflective

NOTE Confidence: 0.86773807

00:54:43.063 --> 00:54:44.927 of extracranial disease than

NOTE Confidence: 0.86773807

00:54:44.927 --> 00:54:46.325 intra cranial disease.

NOTE Confidence: 0.86773807

00:54:46.330 --> 00:54:48.280 And Lastly to the right,

NOTE Confidence: 0.86773807

00:54:48.280 --> 00:54:50.185 when matching mutations found in

NOTE Confidence: 0.86773807

00:54:50.185 --> 00:54:52.090 CSF plasma and brain metastasis

NOTE Confidence: 0.82737577

00:54:52.153 --> 00:54:55.083 tissue, it appears in fact that tumor DNA

NOTE Confidence: 0.82737577

00:54:55.083 --> 00:54:58.497 in the CSF matches the brain metastasis

NOTE Confidence: 0.82737577

00:54:58.497 --> 00:55:01.875 much better than plasma circulating DNA.

NOTE Confidence: 0.82737577

00:55:01.880 --> 00:55:04.160 And so it seems that tumor DNA found

NOTE Confidence: 0.82737577

00:55:04.160 --> 00:55:07.118 in the CSF may be a better way to

NOTE Confidence: 0.82737577

00:55:07.118 --> 00:55:08.469 study brain metastases. Mutation.

NOTE Confidence: 0.82737577

00:55:08.469 --> 00:55:10.563 We need to collect obviously more

NOTE Confidence: 0.82737577

00:55:10.563 --> 00:55:12.870 samples and so will be coming to you

NOTE Confidence: 0.82737577

00:55:12.870 --> 00:55:14.980 all to try and get these samples,

NOTE Confidence: 0.82737577

00:55:14.980 --> 00:55:17.572 but we're hoping that if the data is in

NOTE Confidence: 0.82737577

00:55:17.572 --> 00:55:20.289 fact validated that will be able to UCSF,

NOTE Confidence: 0.82737577

00:55:20.290 --> 00:55:22.537 perhaps as a way to inform changes

NOTE Confidence: 0.82737577

00:55:22.537 --> 00:55:24.488 in their systemic therapy options

NOTE Confidence: 0.82737577

00:55:24.488 --> 00:55:26.340 for current brain metastases.

NOTE Confidence: 0.82737577

00:55:26.340 --> 00:55:27.912 Thank you very much and I'm

NOTE Confidence: 0.82737577

00:55:27.912 --> 00:55:28.960 happy to take questions.

NOTE Confidence: 0.846523

00:55:30.200 --> 00:55:31.870 Thanks Veronica, that was wonderful.

NOTE Confidence: 0.846523

00:55:31.870 --> 00:55:33.910 We do have time for questions

NOTE Confidence: 0.846523

00:55:33.910 --> 00:55:35.540 as the questions come in.

NOTE Confidence: 0.846523

00:55:35.540 --> 00:55:37.424 Just wanna remind everyone that we

NOTE Confidence: 0.846523

00:55:37.424 --> 00:55:40.217 have our ask a review on October 23rd.

NOTE Confidence: 0.846523

00:55:40.220 --> 00:55:42.884 This year we're doing it virtually from 821.

NOTE Confidence: 0.8060832

00:55:45.040 --> 00:55:47.650 So tell us a little bit more about how

NOTE Confidence: 0.8060832

00:55:47.650 --> 00:55:50.079 you get the CSF from the patients.

NOTE Confidence: 0.8060832

00:55:50.080 --> 00:55:52.006 These are lumbar punctures that are

NOTE Confidence: 0.8060832

00:55:52.006 --> 00:55:53.550 done on patients identified from

NOTE Confidence: 0.8060832

00:55:53.550 --> 00:55:54.966 the clinics. So yeah,

NOTE Confidence: 0.8060832

00:55:54.966 --> 00:55:57.976 so we actually have a variety so I can

NOTE Confidence: 0.8060832

00:55:57.976 --> 00:56:00.553 just go back here for a second so we

NOTE Confidence: 0.8060832

00:56:00.553 --> 00:56:02.993 have a variety of points where we can.

NOTE Confidence: 0.8060832

00:56:03.000 --> 00:56:05.232 We can get CSF so the biggest one

NOTE Confidence: 0.8060832

00:56:05.232 --> 00:56:07.151 is mostly been from craniotomy so

NOTE Confidence: 0.8060832

00:56:07.151 --> 00:56:09.497 we try and identify a site where

NOTE Confidence: 0.8060832

00:56:09.497 --> 00:56:11.495 we can get CSF that's distant.

NOTE Confidence: 0.8060832

00:56:11.500 --> 00:56:13.390 Then the lesion that we're about

NOTE Confidence: 0.8060832

00:56:13.390 --> 00:56:15.634 to respect and we get the CSF

NOTE Confidence: 0.8060832

00:56:15.634 --> 00:56:17.169 before we reset the lesion.

NOTE Confidence: 0.8060832

00:56:17.170 --> 00:56:18.762 So hopefully there's no.

NOTE Confidence: 0.8060832

00:56:18.762 --> 00:56:19.160 Contamination,

NOTE Confidence: 0.8060832

00:56:19.160 --> 00:56:21.080 but Yes the other places,

NOTE Confidence: 0.8060832

00:56:21.080 --> 00:56:23.580 so one is on the wards and so I think

NOTE Confidence: 0.8060832

00:56:23.655 --> 00:56:26.295 if there's any concern in patients

NOTE Confidence: 0.8060832

00:56:26.295 --> 00:56:28.612 for leptomeningeal disease and we're

NOTE Confidence: 0.8060832

00:56:28.612 --> 00:56:31.037 getting a diagnostic lumbar puncture,

NOTE Confidence: 0.8060832

00:56:31.040 --> 00:56:33.548 then it would be nice to

NOTE Confidence: 0.8060832

00:56:33.548 --> 00:56:35.850 get CSF at that time.

NOTE Confidence: 0.8060832

00:56:35.850 --> 00:56:38.216 And then the last mechanism is one

NOTE Confidence: 0.8060832

00:56:38.216 --> 00:56:40.526 that's a little bit unique and has

NOTE Confidence: 0.8060832

00:56:40.526 --> 00:56:43.439 provided a little bit of a challenge also.

NOTE Confidence: 0.8060832

00:56:43.440 --> 00:56:45.366 So patients who are actually getting

NOTE Confidence: 0.8060832

00:56:45.366 --> 00:56:48.044 re biopsy as part of kind of the

NOTE Confidence: 0.8060832

00:56:48.044 --> 00:56:49.709 lung protocols for progression of

NOTE Confidence: 0.8060832

00:56:49.709 --> 00:56:51.942 disease if they also have progression

NOTE Confidence: 0.8060832

00:56:51.942 --> 00:56:53.782 in their central nervous system.

NOTE Confidence: 0.8060832

00:56:53.790 --> 00:56:55.870 So untreated brain metastases that

NOTE Confidence: 0.8060832

00:56:55.870 --> 00:56:58.549 we've been asking those patients at the

NOTE Confidence: 0.8060832

00:56:58.549 --> 00:57:00.685 time of their broad to have a lumbar

NOTE Confidence: 0.8060832

00:57:00.749 --> 00:57:03.108 puncture performed to get CSF as well,

NOTE Confidence: 0.8060832

00:57:03.110 --> 00:57:06.239 and so those are kind of the

NOTE Confidence: 0.8060832

00:57:06.239 --> 00:57:08.350 three opportunities that we have.

NOTE Confidence: 0.8060832

00:57:08.350 --> 00:57:09.121 And then yes,

NOTE Confidence: 0.8060832

00:57:09.121 --> 00:57:10.663 and then obviously in the clinic,

NOTE Confidence: 0.8060832

00:57:10.670 --> 00:57:12.086 if we're seeing patients that need

NOTE Confidence: 0.8060832

00:57:12.086 --> 00:57:13.769 number of functions for clinical reasons,

NOTE Confidence: 0.8060832

00:57:13.770 --> 00:57:14.025 right?

NOTE Confidence: 0.8060832

00:57:14.025 --> 00:57:14.280 We

NOTE Confidence: 0.80774677

00:57:14.280 --> 00:57:15.828 do have a question someone asks,

NOTE Confidence: 0.80774677

00:57:15.830 --> 00:57:17.538 they say thank you for your wonderful

NOTE Confidence: 0.80774677

00:57:17.538 --> 00:57:19.126 program and all your help with

NOTE Confidence: 0.80774677

00:57:19.126 --> 00:57:20.476 brain metastases over the years.

NOTE Confidence: 0.80774677

00:57:20.480 --> 00:57:22.802 Is there a limit to the number of metastases

NOTE Confidence: 0.80774677

00:57:22.802 --> 00:57:24.597 that you can use gamma knife for?

NOTE Confidence: 0.88614994

00:57:26.070 --> 00:57:29.086 Yeah, so I think it goes back to,

NOTE Confidence: 0.88614994

00:57:29.090 --> 00:57:31.358 you know, kind of what we

NOTE Confidence: 0.88614994

00:57:31.358 --> 00:57:32.870 think patients can tolerate.

NOTE Confidence: 0.88614994

00:57:32.870 --> 00:57:34.004 So gamma knife.

NOTE Confidence: 0.88614994

00:57:34.004 --> 00:57:35.894 Obviously there is no limit.

NOTE Confidence: 0.88614994

00:57:35.900 --> 00:57:38.539 The planning system allows us to treat,

NOTE Confidence: 0.88614994

00:57:38.540 --> 00:57:41.174 I think over. Over 100 lesions

NOTE Confidence: 0.88614994

00:57:41.174 --> 00:57:43.580 now within the planning system,

NOTE Confidence: 0.88614994

00:57:43.580 --> 00:57:45.580 so logistically it's it's not

NOTE Confidence: 0.88614994

00:57:45.580 --> 00:57:47.180 impossible to do that.

NOTE Confidence: 0.88614994

00:57:47.180 --> 00:57:49.180 As I had said though,

NOTE Confidence: 0.88614994

00:57:49.180 --> 00:57:52.404 I think to treat 25 lesions is hard

NOTE Confidence: 0.88614994

00:57:52.404 --> 00:57:55.575 enough for a patient in a single day,

NOTE Confidence: 0.88614994

00:57:55.580 --> 00:57:57.585 and certainly those are 25

NOTE Confidence: 0.88614994

00:57:57.585 --> 00:58:00.380 lesions that are easy to plan and.

NOTE Confidence: 0.88358146

00:58:02.440 --> 00:58:04.080 And relatively easy to treat.

NOTE Confidence: 0.88358146

00:58:04.080 --> 00:58:05.910 I think for those patients

NOTE Confidence: 0.88358146

00:58:05.910 --> 00:58:07.740 who have larger lesions and

NOTE Confidence: 0.88358146

00:58:07.814 --> 00:58:09.849 lesions in more complex areas.

NOTE Confidence: 0.88358146

00:58:09.850 --> 00:58:12.870 Such as up against the.

NOTE Confidence: 0.88358146

00:58:12.870 --> 00:58:14.440 The brain stem or the

NOTE Confidence: 0.88358146

00:58:14.440 --> 00:58:15.696 optic nerves or whatever.

NOTE Confidence: 0.88358146

00:58:15.700 --> 00:58:17.428 Then you know the the planning

NOTE Confidence: 0.88358146

00:58:17.428 --> 00:58:18.991 and the treatment for those

NOTE Confidence: 0.88358146

00:58:18.991 --> 00:58:20.407 lesions takes even longer,

NOTE Confidence: 0.88358146

00:58:20.410 --> 00:58:22.438 so we are our radiation oncologists

NOTE Confidence: 0.88358146

00:58:22.438 --> 00:58:24.937 are trying to keep the cap at 25

NOTE Confidence: 0.88358146

00:58:24.937 --> 00:58:26.943 because we had shown that the whole

NOTE Confidence: 0.88358146

00:58:26.943 --> 00:58:28.875 brain dose is about four Gray.

NOTE Confidence: 0.88358146

00:58:28.880 --> 00:58:30.752 But in addition to that it's

NOTE Confidence: 0.88358146

00:58:30.752 --> 00:58:33.012 about as long as a patient can

NOTE Confidence: 0.88358146

00:58:33.012 --> 00:58:35.480 tolerate 7 or 8 hours with with us.

NOTE Confidence: 0.88358146

00:58:35.480 --> 00:58:38.297 It's not so fun with us down the basement.

NOTE Confidence: 0.88358146

00:58:38.300 --> 00:58:38.930 That's great

NOTE Confidence: 0.83458436

00:58:38.930 --> 00:58:41.132 in the final question from someone

NOTE Confidence: 0.83458436

00:58:41.132 --> 00:58:42.600 who's obviously been watching

NOTE Confidence: 0.83458436

00:58:42.659 --> 00:58:46.439 the entire day. They they ask.

NOTE Confidence: 0.83458436

00:58:46.440 --> 00:58:48.470 Are you doing the gamma knife at

NOTE Confidence: 0.83458436

00:58:48.470 --> 00:58:50.427 sites outside of Cedar Street or is

NOTE Confidence: 0.83458436

00:58:50.427 --> 00:58:52.730 it all being done at the main center?

NOTE Confidence: 0.83458436

00:58:52.730 --> 00:58:54.446 And are there plans to expand

NOTE Confidence: 0.83458436

00:58:54.446 --> 00:58:55.304 this around Connecticut?

NOTE Confidence: 0.71179

00:58:56.460 --> 00:59:01.346 So, so the Gamma Knife Machine Percy.

NOTE Confidence: 0.71179

00:59:01.350 --> 00:59:03.615 There's only one of those

NOTE Confidence: 0.71179

00:59:03.615 --> 00:59:04.974 here in Connecticut.

NOTE Confidence: 0.71179

00:59:04.980 --> 00:59:06.860 The Certificate of need.

NOTE Confidence: 0.71179

00:59:06.860 --> 00:59:09.210 It's difficult to get more

NOTE Confidence: 0.71179

00:59:09.210 --> 00:59:11.787 than one in our little state,

NOTE Confidence: 0.71179

00:59:11.790 --> 00:59:13.086 but brain radiosurgery,

NOTE Confidence: 0.71179

00:59:13.086 --> 00:59:16.110 which can be done either with gamma

NOTE Confidence: 0.71179

00:59:16.184 --> 00:59:18.599 knife or mlynek based techniques.

NOTE Confidence: 0.71179

00:59:18.600 --> 00:59:22.352 There's actually 11 centers around the around

NOTE Confidence: 0.71179

00:59:22.352 --> 00:59:26.467 the state that are that are capable of it.

NOTE Confidence: 0.71179

00:59:26.470 --> 00:59:28.340 With linac based radiosurgery, though,

NOTE Confidence: 0.71179

00:59:28.340 --> 00:59:31.161 this software is not capable really of

NOTE Confidence: 0.71179

00:59:31.161 --> 00:59:33.929 treating more than 10 lesions at a time,

NOTE Confidence: 0.71179

00:59:33.930 --> 00:59:36.168 and once you've exceeded 10 total,

NOTE Confidence: 0.71179

00:59:36.170 --> 00:59:38.431 whether it be all at one time

NOTE Confidence: 0.71179

00:59:38.431 --> 00:59:40.270 or over several treatments,

NOTE Confidence: 0.71179

00:59:40.270 --> 00:59:42.110 then it gets really difficult

NOTE Confidence: 0.71179

00:59:42.110 --> 00:59:44.368 to take into account what's been

NOTE Confidence: 0.71179

00:59:44.368 --> 00:59:46.113 treated before as versus what

NOTE Confidence: 0.71179

00:59:46.113 --> 00:59:48.479 needs to be treated going forward,

NOTE Confidence: 0.71179

00:59:48.480 --> 00:59:51.189 and it's the reason why the multiple

NOTE Confidence: 0.71179

00:59:51.189 --> 00:59:52.950 metastases always end up here,

NOTE Confidence: 0.71179

00:59:52.950 --> 00:59:54.670 and so I think,

NOTE Confidence: 0.71179

00:59:54.670 --> 00:59:57.250 as Doctor Boffa was saying before.

NOTE Confidence: 0.71179

00:59:57.250 --> 00:59:59.315 You know it is the reason why

NOTE Confidence: 0.71179

00:59:59.315 --> 01:00:01.020 we are the referrals.

NOTE Confidence: 0.71179

01:00:01.020 --> 01:00:03.666 I'm not sure that there's enough volume

NOTE Confidence: 0.71179

01:00:03.666 --> 01:00:05.958 necessarily to grow around the state,

NOTE Confidence: 0.71179

01:00:05.960 --> 01:00:10.314 and it's very expensive and time consuming.

NOTE Confidence: 0.71179

01:00:10.320 --> 01:00:11.868 You know, treatment so.

NOTE Confidence: 0.71179

01:00:11.868 --> 01:00:13.803 It's hard to cultivate elsewhere.

NOTE Confidence: 0.71179

01:00:13.810 --> 01:00:14.350 I know,

NOTE Confidence: 0.7919675

01:00:14.350 --> 01:00:15.970 I know. I said last question,

NOTE Confidence: 0.7919675

01:00:15.970 --> 01:00:19.586 but I can't not ask Doctor Sklar's question.

NOTE Confidence: 0.7919675

01:00:19.590 --> 01:00:21.260 Jeff, thank you. He has.

NOTE Confidence: 0.7919675

01:00:21.260 --> 01:00:23.564 How do you propose to UCSF DNA in

NOTE Confidence: 0.7919675

01:00:23.564 --> 01:00:25.250 patients with multiple lesions?

NOTE Confidence: 0.7919675

01:00:25.250 --> 01:00:27.518 For example, your patient who had both

NOTE Confidence: 0.7919675

01:00:27.518 --> 01:00:29.580 tumor necrosis and regrowth of tumor?

NOTE Confidence: 0.92323035

01:00:31.300 --> 01:00:32.210 So.

NOTE Confidence: 0.81545657

01:00:34.540 --> 01:00:36.780 So it's interesting, I don't.

NOTE Confidence: 0.81545657

01:00:36.780 --> 01:00:39.360 I think that finding so we

NOTE Confidence: 0.81545657

01:00:39.360 --> 01:00:41.965 don't have a marker necessarily

NOTE Confidence: 0.81545657

01:00:41.965 --> 01:00:45.109 for radiation Necrosis Persay.

NOTE Confidence: 0.81545657

01:00:45.110 --> 01:00:47.670 What I think that we care about is,

NOTE Confidence: 0.81545657

01:00:47.670 --> 01:00:49.819 is there regrowing tumor and so I

NOTE Confidence: 0.81545657

01:00:49.819 --> 01:00:51.786 think that if we find mutational

NOTE Confidence: 0.81545657

01:00:51.786 --> 01:00:53.742 DNA first of all we don't.

NOTE Confidence: 0.81545657

01:00:53.750 --> 01:00:55.688 We don't 100% know that it

NOTE Confidence: 0.81545657

01:00:55.688 --> 01:00:57.270 correlates with active disease yet,

NOTE Confidence: 0.81545657

01:00:57.270 --> 01:00:59.314 but if we're able to demonstrate that

NOTE Confidence: 0.81545657

01:00:59.314 --> 01:01:01.922 then we need to be concerned that we're

NOTE Confidence: 0.81545657

01:01:01.922 --> 01:01:03.975 not just treating radiation to process

NOTE Confidence: 0.81545657

01:01:03.975 --> 01:01:06.229 and I think that's really the issue.

NOTE Confidence: 0.8395945

01:01:06.870 --> 01:01:08.702 Great, well, I think that we are at

NOTE Confidence: 0.8395945

01:01:08.702 --> 01:01:10.667 time and actually a few minutes over,

NOTE Confidence: 0.8395945

01:01:10.670 --> 01:01:12.694 but no one needs to walk back to

NOTE Confidence: 0.8395945

01:01:12.694 --> 01:01:14.425 their office. So I figured I could

NOTE Confidence: 0.8395945

01:01:14.425 --> 01:01:16.229 get a few more minutes in there.

NOTE Confidence: 0.8395945

01:01:16.230 --> 01:01:17.748 Thank you, Veronica, that was wonderful.

NOTE Confidence: 0.8395945

01:01:17.750 --> 01:01:18.545 Thank you, Dan.

NOTE Confidence: 0.8395945

01:01:18.545 --> 01:01:20.689 Thank you to the organizers Renee and the

NOTE Confidence: 0.8395945

01:01:20.689 --> 01:01:22.553 team and we'll see you back next week.

NOTE Confidence: 0.8395945

01:01:22.560 --> 01:01:24.580 It's been a pleasure moderating today. Have a

NOTE Confidence: 0.8395945

01:01:24.580 --> 01:01:27.765 good day. Everyone. Thank you.